

# University Graduate School

## Administration

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## Overview

The University Graduate School offers degree programs on seven campuses of Indiana University -- Bloomington, East, Indianapolis, Kokomo, Northwest at Gary, South Bend, and Southeast at New Albany -- totalling over 130 master's degrees, and 120 Ph.D.s state-wide.

At Bloomington, the University Graduate School offers over 90 master's degrees and over 80 Ph.D. degrees through the College of Arts and Sciences, School of Art, Architecture, + Design, Kelley School of Business, School of Education, School of Global and International Studies, School of Informatics, Computing, and Engineering, Maurer School of Law, The Media School, School of Medicine, Jacobs School of Music, School of Optometry, School of Public and Environmental Affairs, and School of Public Health.

At Indianapolis, the University Graduate School offers over 40 master's degrees and over 35 Ph.D. degrees through the School of Liberal Arts, School of Health and Rehabilitation Sciences, School of Medicine, School of Public Health, School of Science, School of Informatics and Computing, School of Dentistry, School of Education, School of Nursing, and School of Social Work.

At Kokomo, the University Graduate School offers the Master of Arts; at Northwest, the Master of Liberal Studies; at South Bend, the Master of Arts and Master of Liberal Studies; at East, the Master of Arts; and at Southeast, the Master of Liberal Studies.

## Mission Statement

The mission of the University Graduate School is to promote and support excellence in graduate education for individual students, faculty, departments, and the university as a whole.

In accomplishing this mission, the University Graduate School values excellence, integrity, collaboration, efficiency, innovation, and inclusiveness in all that it does. These values are central to the school's role in encouraging a creative environment for scholarship, research, teaching, and learning. The University Graduate School is a recognized leader in developing new concepts and best practices for graduate education. It assists departments in recruiting, supporting, retaining, and graduating outstanding scholars. Through its connections with national higher education organizations, it serves as a resource in forging the future directions of graduate education.

## History and Organization

In 1908, upon the insistence of faculty members of the College of Arts and Sciences, the university placed its graduate courses into a newly formed unit, the Graduate School, and named biology professor Carl Eigenmann its first dean (1908-27). Four years later, Indiana University awarded its first Ph.D. degree, although Master of Arts degrees had been conferred in cursu upon graduates of Indiana University in the nineteenth century. Today, the Graduate School awards approximately 300 Ph.D.'s and some 500 master's degrees annually. In addition to the Ph.D., the Graduate School at Indiana University has sole jurisdiction over the Master of Arts, the Master of Science, the Master of Arts for Teachers, and the Master of Fine Arts degrees wherever they are offered in the university system. The professional schools have jurisdiction over other postbaccalaureate degrees and provide the instruction for Graduate School degrees in their disciplines. As a university-wide office, the Graduate School grants degrees at five of the university's eight campuses: Bloomington, Fort Wayne, Indianapolis, South Bend, and Southeast.

In the Graduate School's early years, during the presidency of William Lowe Bryan, the university concentrated on undergraduate instruction. When Herman B Wells became president in 1938, graduate education at Indiana began to thrive under the deanship of Fernandes Payne, another biologist (1927-47). With the strong support of President Wells and under the guidance of Dean Payne's successors, English professor and folklorist Stith Thompson (1947-50) and botanist Ralph Cleland (1950-58), the Graduate School grew rapidly during the post-World War II years. Twenty-five graduate fellowships were created during the war years.

John W. Ashton, the second English professor to occupy the Graduate School deanship (1958-65), had served as dean of the College of Arts and Sciences before taking over the new Graduate School offices in Kirkwood Hall. During his tenure in the College and in the Graduate School, Dean Ashton gave strong support to interdisciplinary programs and emerging disciplines such as linguistics, comparative literature, East European studies, folklore, School of Letters, and Uralic and Altaic studies. By 1960, Bernard Berelson's book *Graduate Education in the United States* ranked Indiana University twelfth of 92 institutions of higher education. Allan Carter's *Assessment of Quality in Graduate Education* (1966) also reflected the increased stature of the university's graduate programs. In that work, four Graduate School programs ranked among the top ten of their kind in the nation, and twenty programs emerged among the top twenty.

The appointment of Harrison Shull, a chemist (1965-72), marked an outstanding increase in the research and graduate development activities of the Graduate School. When Dean Shull left the Graduate School to become the vice chancellor for research and development, he took many of these activities with him, leaving the Graduate School to be concerned primarily with graduate education. As the university underwent reorganization under the leadership of President John W. Ryan, two temporary deans, Harry Yamaguchi, a psychologist (1972-77), and James Holland, the third biologist to head the Graduate School (1977-78), presided over an office that, without a

research and development component, was able to focus its attention on the quality of graduate education.

From 1978 until 1987, the historian Leo F. Solt was dean. Under his leadership, the Graduate School became a university-wide entity, encouraging excellence in graduate education throughout the state of Indiana by systematically reviewing all existing programs and by implementing new graduate programs on the Indianapolis and South Bend campuses, as well as on the Bloomington campus. Fellowship funds were increased, and more minority students were recruited; the Graduate School was computerized to improve record keeping and monitoring of students; additional steps were taken to improve the quality of Ph.D. dissertations; and participation by graduate students in the administrative and policy making activity of the Graduate School was encouraged.

Thomas Noblitt, a music historian, was acting dean from 1987 until 1989. During his tenure, new graduate programs were approved for the Northwest and Fort Wayne campuses, and offerings at Bloomington and Indianapolis were expanded. In August 1989, George Walker, a physicist, became associate vice president (and later vice president) for research and dean of the University Graduate School, thus reuniting two offices that had been separated for nearly 20 years. Under his direction, the University Graduate School was reorganized to allow departments and schools to assume a larger part of the responsibility for the monitoring of graduate students' progress toward their degrees. Increased emphasis on financial support for graduate education led to substantial additions to the fellowship budget, new initiatives were undertaken to encourage research on all campuses of the university, and the Graduate Council was significantly expanded. Dean Walker also established a Preparing Future Faculty Program to prepare graduate students to face the full range of professional responsibilities they might encounter in the academy.

In 2003, the Office of Research and the University Graduate School were again separated, and John Slattery, a pharmacologist from the University of Washington, was recruited to head the again independent University Graduate School. Unfortunately he was lured back by the University of Washington, and in the fall of 2005, Sherry Queener (who had been associate dean at Indianapolis) and Eugene R. Kintgen (who had been associate dean at Bloomington) were named acting co-deans. James C. Wimbush, a professor of business administration, was appointed dean of the University Graduate School in September, 2006. Dean Wimbush continues to advocate for the enhancement of graduate education and improvement of the overall quality of graduate student and post-doctoral student life, and works to increase funding for programs promoting educational equality. In July, 2013, Dean Wimbush also was appointed Vice President for Diversity, Equity, and Multicultural Affairs.

In 1951, the faculty elected nine of its number to a Graduate Council. Today, the Graduate Faculty Council has 26 voting members elected by the Graduate Faculty. That faculty of about 3,700 members comes from all campuses of the university. Beginning in 1980, a University Graduate School faculty committee has added new members to the graduate faculty upon nomination

by departmental or school administrators, subject to the approval of the dean of the University Graduate School and, in the case of full members, the Board of Trustees. This process changed in 2005. Currently, all tenured or tenure-eligible faculty are automatically appointed as members of the Graduate Faculty. An additional endorsement to direct doctoral dissertations may be obtained through nomination by the appropriate doctoral program chair or program faculty, subject to approval of the dean of the University Graduate School. The names of all IU faculty members who hold appointments as members of the Graduate Faculty are listed in this bulletin under the names of the program(s) with which they are associated. An asterisk (\*) denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.

Members of the University Graduate School faculty ultimately determine standards of admission, set the general requirements for degrees, pass upon the specific requirements of programs, approve courses for graduate credit, and certify candidates for degrees. These functions are executed by the Graduate Council and the dean and administrative staff. More specifically, the University Graduate School faculty serve on advisory and research committees for doctoral students, direct master's theses and doctoral dissertations, and elect members of the Graduate Council.

The Graduate Council, which represents faculty in all graduate units, meets monthly during the academic year. In addition to the functions delegated to it by the faculty of the University Graduate School, it serves as an executive advisory body to the dean and administrative staff on policy matters. It receives the reports of the school's standing faculty committees; it acts upon recommendations for changes in admission, the curriculum, degree requirements, and procedures for the administration of student programs; it receives and acts upon the recommendations of ad hoc committees appointed by the dean; it gives advice on ways to improve the quality of graduate work; and it seeks ways to coordinate the programs of the University Graduate School with other graduate programs in the university.

In addition, the deans and staff of the University Graduate School monitor indicators of the quality of individual graduate programs, and (through the recorders) the quality of master's and doctoral degrees granted. Mentoring and Preparing Future Faculty programs, both within the departments and centralized in the University Graduate School, ensure that students are integrated into their academic programs and prepared for the full range of professional responsibilities they will encounter in their careers.

The Graduate and Professional Student Organization is the representative body for graduate students enrolled on the Bloomington campus. Likewise, the Graduate and Professional Student Government represents graduate students enrolled in programs on the Indianapolis campus. Both organizations work with the University Graduate School to advocate for the interests of graduate and professional students.

## Contact Information

### University Graduate School

[The University Graduate School, Bloomington Office](#)

Wells Library  
1320 E. 10th Street, Room E546  
Bloomington, IN 47405

(812) 855-8853  
[grdschl@indiana.edu](mailto:grdschl@indiana.edu)

[The University Graduate School, Indianapolis Office](#)

University Library, UL 1170  
755 W. Michigan Street  
Indiana University–Purdue University Indianapolis  
Indianapolis, IN 46202

(317) 274-1577  
[gradoff@iupui.edu](mailto:gradoff@iupui.edu)

## Admission

### Undergraduate Requirements

The University Graduate School will consider applications from students holding baccalaureate degrees from Indiana University or from other accredited four-year collegiate institutions. The University Graduate School may admit students who do not meet stated admission criteria provided that the deficiencies amount to no more than one year's work. The dean will determine the condition of admission in such cases. If more than a year's work is deficient, students should apply to the University Graduate School for admission to the Continuing Nondegree Program. Students from unaccredited institutions may be admitted as special students for one semester; if their records are then satisfactory and their department, program, or school recommends them, they will be given full standing. Ordinarily, a B (3.0) average in the undergraduate major is required for admission to the University Graduate School.

The University Graduate School recognizes the role in contemporary curricula of modern technologies that enhance learning in both traditional formats featuring primarily face-to-face interaction and in non-traditional formats where students and faculty engage each other primarily via electronic means. In considering coursework for admission purposes or for transfer of credit into a degree program, the Graduate School expects programs to evaluate course work and to apply the same criteria for quality to both traditional and distance formats. Course work must be from an accredited four-year collegiate institution to be considered for admission purposes, or must otherwise comply with the requirements for non-accredited institutions (see prior section).

### Indiana University Baccalaureate Degree Candidates

Candidates for baccalaureate degrees at Indiana University may apply for conditional admission to the University Graduate School and may enroll for graduate credit for that portion of their program not required for completion of the baccalaureate degree, provided that:

1. They are within one semester of meeting baccalaureate degree requirements or they are admitted to an accelerated graduate program and enrolled in courses required for the graduate portion

of their degree plan (if the baccalaureate is not completed within that semester, graduate credit earned may not be counted toward an advanced degree).

2. The total course load does not exceed that ordinarily taken by a full-time graduate student.
3. The courses taken for graduate credit are authorized to carry such credit. (In certain instances graduate credit is allowed for undergraduate courses.)

## Application for Admission

To assure that course credit will be eligible to count toward an intended graduate degree, prospective graduate students, including graduates of Indiana University, must make formal application and be admitted to a department, program, or academic school. Most programs of the University Graduate School consider applications for admission and financial aid that are completed by the following dates:

- January 15 for the fall semester
- September 1 for the spring semester
- January 1 for the summer

If a program uses other deadlines, the applicant will be informed by the program staff. Many graduate programs consider applications submitted after a deadline as long as all available spaces for students have not been filled by highly qualified applicants. Inquiries about late applications for admission or financial aid should be addressed to the program of the student's intended major.

### Application Requirements

Electronic applications are the only form of application at IU Bloomington and IUPUI except where accommodations are needed.

All applications must be accompanied by one complete transcript of all previous college and university work and should be submitted directly to the department in which the student wishes to apply.

By action of the Trustees of Indiana University, a nonrefundable application fee of \$60 is required of all domestic applicants. A \$65 application fee is required of all international applicants. At IU Bloomington, Continuing Nondegree Program students are not assessed an application fee, but a \$25 processing fee is assessed each semester in which they enroll. All Graduate Nondegree students on the Indianapolis campus must pay a \$60 fee for domestic applications and a \$65 fee for international applications.

### Acceptance to an Academic Program

Admission (except for Continuing/Graduate Nondegree students) is made to a particular department for a specific degree, and no student shall be permitted to work toward a degree without first having been admitted to do so. A flexible entry procedure for basic science programs at Indianapolis allows Ph.D. students up to one year to identify a research laboratory and degree program. Students desiring to change departments must apply and be admitted to the new program. Requests for change of degree status must be submitted by the department and approved by the dean.

Following the notice of admission to the University Graduate School, an applicant normally has two calendar years in which to enroll. Supplementary transcripts of any additional academic work undertaken during that period are required, and a department may request additional letters of recommendation. Should the updated material prove unsatisfactory, the admission may be canceled. If the applicant fails to enroll within two years, a completely new application is required.

### **Graduate Record Examination (GRE)**

Applicants may be required to take the Graduate Record Examination General Test, Subject Test, or both based on departmental requirements. Information concerning these examinations may be obtained online at [www.ets.org](http://www.ets.org). Further information can be obtained from the University Graduate School Bloomington or Indianapolis office.

## **International Students**

There are special application procedures for those who are not citizens of the United States or who have had their previous schooling outside the United States.

At IU Bloomington, international students can apply through the [Online Graduate And Professional Admissions Application](#) or obtain the international application from the [Office of Admissions](#).

At IUPUI, international students can obtain the international application from the [Office of International Affairs](#). Because of the extra procedures required in evaluating foreign credentials, the application fee for international students is \$65.

Once enrolled, international students who wish to change their program of study must first obtain the approval of the Office of International Services. After such approval is granted, application for formal change of status may be made to the University Graduate School according to the same procedures governing United States citizens.

International students must enroll in at least 8 credit hours each fall and spring semester in order to meet visa requirements. Any exceptions to this regulation must be approved in advance by the Office of International Services for Bloomington students or the Office of International Affairs for Indianapolis students.

### **Test of English as a Foreign Language (TOEFL)**

Since the language of instruction at Indiana University is English, proficiency in reading, writing, speaking, and understanding English is essential. Applicants whose native language is not English should submit proof of such proficiency by the time they apply for admission. Normally this is done by taking the Test of English as a Foreign Language (TOEFL). Results of this test should be submitted as part of the application for admission. The TOEFL examination is given six times a year in the United States and many foreign countries. Further information may be obtained at American consulates or by visiting the [Educational Testing Center TOEFL website](#).

If it is not possible to take the TOEFL, applicants should obtain a statement by a responsible official, ordinarily a United States consular official, attesting that they read, write, speak, and understand the English language well enough to pursue, at an American university, a program leading to an advanced degree in their chosen field. Such

a statement should be submitted with the application for admission.

### **English Language Proficiency Test**

Prior to registration for classes, all new students whose native language is not English are required to take an English Language Proficiency Test administered by the Indiana University Center for English Language Training (CELT) at IU Bloomington, and by the Department of English at IUPUI. If the results of this test indicate that a student needs additional work in English as a second language, appropriate recommendations will be made to the student's academic advisors. This requirement has been established in recognition of the vital importance of language competency to the student's academic success.

Prospective students whose native language is not English and who have been offered positions as associate instructors are required to pass additional tests in English, since success as a teacher at Indiana University is dependent upon one's ability to communicate in the English language. Information regarding these examinations may be obtained directly from the individual academic departments at IU Bloomington or from the Department of English at IUPUI.

## **Nondegree Students**

### **Special Students**

Domestic students who have not been admitted to a degree program but who intend to study primarily in one department may be admitted by that department with the approval of the dean as special students. They must apply to a department just as degree students do and should indicate their desired status.

### **Continuing/Graduate Nondegree Students**

The holder of a baccalaureate degree who wishes to study on a nondegree basis without necessarily concentrating in a single department may be admitted to the University Graduate School as a Continuing/Graduate Nondegree student. Such students may not accumulate more than 18 credit hours in a single subject area, and may enroll only in those courses for which they can obtain specific permission to register, which takes into consideration the academic background of the individual and course enrollment limitations.

In addition to Indiana University tuition and mandatory fees, a program processing fee of \$25 is assessed each semester for Continuing Nondegree students in Bloomington. For details of admission and further information, Bloomington students should consult the [Continuing Non-Degree Program webpage](#) or contact [nondegr@indiana.edu](mailto:nondegr@indiana.edu); Indianapolis students should consult the [Graduate Non-Degree Program webpage](#).

A student initially admitted as a continuing nondegree student who later wishes to obtain a graduate degree must make formal application and be admitted to a departmental degree program. The department may then recommend to the dean that credit earned as a continuing nondegree student be applied to degree requirements. Students should be aware that certain departments, schools, and campuses specifically limit or prohibit work taken under continuing nondegree status from counting



toward a degree after a student has been admitted to a degree program.

## Policies & Procedures

This section provides an overview of the academic regulations and procedures of the University Graduate School and Indiana University.

### Graduate Credit

#### Graduate Course Numbering

Only courses listed in this bulletin or specifically allowed by it may be counted toward the requirements for a degree offered by the University Graduate School. These courses are ordinarily numbered at the 500 level or above.

In certain cases, courses at the 300 and 400 level have been specifically approved for graduate credit; all such courses are listed in this bulletin. Normally, these courses require a higher level of performance and significantly more work (such as an increased number of readings, additional papers, extra class sessions, oral class presentations) for the graduate students than for the undergraduates. Each instructor should identify the graduate students enrolled in the course during the first week of classes and should outline the nature of the work expected of them at that time. In certain other unusual instances the dean may approve, upon recommendation and justification by the student's advisory committee, other 300- or 400-level courses for graduate credit, typically to count toward requirements in the student's outside minor. Such approval should be requested before the course is taken.

In many departments there are strict limitations on the number of 300- and 400-level courses that may be counted toward advanced degree requirements; see departmental notices for details.

#### Course Availability and Abbreviations

Not all courses listed in this bulletin are offered every year and on every campus. Inquiries concerning the availability or suitability of a particular course should be directed to the appropriate departmental chairperson.

The number of hours of credit given a course is indicated in parentheses following the course title. The abbreviation "P" refers to the course prerequisite or prerequisites. Similarly, the abbreviation "R" indicates recommended prerequisites. Courses eligible for a deferred grade are marked by the sign "\*\*\*".

#### Credit Overlap Between Degrees

Courses taken while an undergraduate and counted toward the requirements of a baccalaureate degree may not also be counted toward a graduate degree except as part of an accelerated degree program.

With only two exceptions, courses counted toward the requirements for one advanced degree may not be counted toward requirements for another degree at the same level:

1. In the case of the M.F.A., course work completed as part of an M.A., M.S., or M.A.T. degree may, with the approval of the student's department, be counted toward the M.F.A., provided it otherwise meets the conditions stated in this bulletin.

2. In the case of the Dual Master's Program, certain reductions are allowed in the total number of hours required than if the two degrees had been taken separately. The Dual Master's Program involves two degrees at the master's level; the degrees may be under the jurisdiction of the University Graduate School or of another Indiana University school. For further information, see "Dual Master's Program" under the master's degree requirements.

Work counted toward a master's degree may also be counted toward the Ph.D. if it has been approved by the student's advisory committee and if it otherwise meets the conditions stated in this bulletin, including the rules governing the transfer of credit from other institutions.

#### Transfer of Credit

Upon recommendation of the department and with the approval of the dean, work taken for graduate credit at other institutions may be transferred in partial fulfillment of degree requirements. No course may be transferred from another institution unless the grade is B or higher and unless the course was completed within the time limit prescribed (see "Graduate Credit—General" section above). The following restrictions apply:

1. Candidates for the M.A., M.S., LL.M., or M.A.T. degree may transfer up to 9 hours of graduate credit from other institutions.
2. Candidates for the M.A.T. degree who are graduates of Indiana University may transfer up to 12 hours of graduate credit from other institutions.
3. Candidates for the M.F.A. degree may transfer up to 20 hours of graduate credit from other institutions.
4. Candidates for the Ph.D. degree may transfer up to 30 hours of graduate credit from other institutions.

It must be emphasized that the transfer of credit is not an automatic occurrence. Students must obtain the written consent of both their departmental advisor and the dean before credit earned at other institutions will be added to their records.

## Grading Policies

#### Grading Scale

Grade points are assigned at Indiana University according to the following scale, and grade point averages are computed taking into account any plus or minus which accompanies a letter grade.

A	=	4.0
A-	=	3.7
B+	=	3.3
B	=	3.0
B-	=	2.7
C+	=	2.3
C	=	2.0
C-	=	1.7
D+	=	1.3
D	=	1.0
D-	=	0.7
F	=	0

#### Satisfactory Grades

Ordinarily a minimum of a B (3.0) average in graduate work is required for continuance in graduate study

and for all graduate degrees. Courses completed with grades below C (2.0) are not counted toward degree requirements, but such grades will be counted in calculating a student's grade point average. Some departments may require an average grade in graduate courses higher than 3.0, while others may count no courses completed with grades below 3.0 toward degree requirements (see departmental entries). No work may be transferred from another institution unless the grade is a B (3.0) or higher.

The dean may review a grade record at any time and may place a student on academic probation if the record justifies such action. When the grade point average of a student falls below 3.0 or the student is not making sufficient progress toward the degree, the dean will notify the student that he or she has been placed on probation. Unless the student brings this record up to a 3.0 grade point average or begins making satisfactory progress in the next semester of enrollment, the student will not ordinarily be allowed to continue in the University Graduate School.

### **Incomplete Grades**

The grade of Incomplete may be given only when the completed portion of a student's work is of passing quality. It is the responsibility of the student who has incurred the grade of Incomplete in any course to satisfy the requirements of that course within one calendar year from the date on which the Incomplete is recorded. The student is expected to finish all necessary work in time for the instructor to assign a regular grade before the expiration of this time period. If the student is unable to do so because of circumstances clearly beyond the student's control, it is the student's responsibility to notify the instructor of the course, the graduate advisor, and the dean within the year of such circumstances and to request an extension of time.

According to university policy, every overdue Incomplete will be changed to F after one calendar year. Both the student and the instructor shall be notified of this change in grade. This change will be made unless the dean has received notice of a regular grade duly assigned before that time or has approved a request for an extension of time. A change of the grade F will be considered only if the request for change is accompanied by an explanation of the circumstances involved. Students may not register in a course in which they have a grade of Incomplete.

These regulations do not apply to research and reading courses in which completion of the course work is not usually required at the end of the semester. Incomplete work in those courses will be denoted by R (deferred grade).

### **Withdrawal from Course Work**

Withdrawals prior to the "last day to drop a course with an automatic W" (see official calendar for each semester) are automatically marked W. According to university regulations, withdrawal after this date is permitted only with the approval of the dean of the student's school for urgent reasons related to the student's health or equivalent distress. In all such cases, the student must submit a request for late withdrawal to the advisor or to the departmental chairperson. This request must be supported by the instructor of the course, the graduate

advisor, and the departmental chairperson and then be forwarded to the dean with an accompanying statement outlining the reasons for the request. If the dean approves the request, the student's mark in the course shall be W if the work completed up to the point of withdrawal is passing; otherwise a grade of F shall be recorded. Failure to complete a course without an authorized withdrawal will result in the grade of F.

### **Pass/Fail Option**

Students in good standing (i.e., with a grade point average of 3.0 or better) who have completed graduate course work sufficient for a master's degree may, with the written consent of their graduate advisor or of their advisory committee, enroll in courses outside their major and minor areas on a pass/fail basis under conditions stated in a memorandum available from the University Graduate School office. Such courses may not be used to fulfill departmental language or research-skill requirements. Enrollment under this option will be made at the beginning of the semester and may not be changed after the date fixed for dropping and adding of courses.

### **Full-Time Study**

Ordinarily, students shall be considered full time if they are registered for 8 hours of credit (fall, spring, and summer terms) and their programs of study meet with the approval of the departments. Courses taken as an auditor may not be counted in the definition of "full-time study"; however, courses taken to remove undergraduate deficiencies for admission may be counted. Students holding appointments as associate instructors, graduate assistants, or research assistants must ordinarily be registered for 6 credit hours during each full semester.

For academic purposes, the University Graduate School will consider as full-time certain students who are exceptions to the above definitions:

- M.A. and M.S. candidates whose completed courses and deferred thesis credits total 30 hours
- M.F.A. candidates whose completed courses and deferred thesis credits total 60 hours
- Ph.D. students whose completed courses and deferred dissertation credits total 90 hours, providing they are working on theses or dissertations for the completion of the degree

Such students, however, must enroll in at least one hour of graduate thesis (for master's students) or dissertation (for doctoral students) credit each semester.

For master's candidates, such enrollment will be limited to the five-year period allowed for completion of the master's degree; this enrollment for doctoral candidates will be limited to the seven-year period after passing the qualifying examination.

Students who have already accumulated 90 or more hours of graduate credit and who hold university-administered student appointments as associate instructors, graduate assistants, or research assistants amounting to at least 0.375 FTE (15 hours per week workload) will be required to enroll in at least 6 hours of credit during each semester they continue to hold an appointment. Such hours will be charged at the allocated fee rate.

Students may take no more than 16 hours of credit in any semester or more than a total of 16 credit hours in all the summer sessions in any one year without permission of their graduate advisor. Students who are employed are advised to take into account the demands that such activities make on their time and to reduce their course loads accordingly.

## Residence Requirements

All candidates for graduate degrees (with the exceptions outlined below) must complete at least 30 credit hours of graduate work while enrolled on campuses of Indiana University.

- Of these hours at least one semester or two summer sessions of full-time work must be taken in University Graduate School degree-granting units on the Bloomington, Indianapolis, South Bend, or Southeast campuses
- Candidates for the Ph.D. degree must spend two consecutive semesters during one academic year on the Bloomington or Indianapolis campus.

## Work Done at More Than One Indiana University Campus

Students who plan to earn a degree through a degree-granting unit on one Indiana University campus and who plan to take a substantial number of hours on one or more of the other Indiana University campuses in partial fulfillment of degree requirements should have their programs of study approved in advance by the degree-granting unit. The residency requirement must be met on the campus where the degree-granting unit is located.

## Foreign Language and Research Skills

Individual departments determine whether foreign languages or research skills or both will be required. Where such requirements exist, students must select the specific language(s) or research skill(s) from those approved by the major department and listed in its statement of departmental requirements. Another language demonstrably useful in the student's research program may be substituted upon special recommendation of the major department and approval by the dean.

## Fulfilling Foreign Language Requirements

Reading proficiency in a foreign language is normally established in one of three ways:

1. By achieving an appropriate score on an examination administered on the Bloomington campus by the respective language department; students should contact the language department for details.
2. By completing, with a grade of B (3.0) or better, the reading course 492 (e.g., F492 for French, G492 for German). Students may register for the first course in the sequence, 491 to prepare for 492; those who feel they have sufficient preparation may register for 492, though they should consult the language advisor first.
3. By receiving, in the cases of Catalan, French, German, Italian, Portuguese, Russian, or Spanish, a grade of B (3.0) or better in a literature or

civilization course at Indiana University numbered 300 or higher (exclusive of individual readings and correspondence courses) in which the reading is done in the foreign language. Courses in Russian offered to meet this requirement must be approved by the Department of Slavic and East European Languages and Cultures.

In certain departments, reading proficiency may be demonstrated by presenting an original translation for approval by a faculty examiner designated by the appropriate language department.

For details, consult with the respective language departments.

## Proficiency in Depth in Foreign Language

In certain departments, students have the option of substituting proficiency in depth in one language for reading proficiency in two languages. Proficiency in depth in a language is defined as the ability to read rapidly without the aid of a dictionary and the ability to speak, understand, and write in a manner comparable to that expected of students who have successfully completed fourth-year composition and conversation courses. For information about demonstrating proficiency in depth, students should consult the graduate examiner in the foreign language department concerned.

## Students Whose Native Language is Not English

A student whose native language is not English may, with the permission of the major department, either:

1. Demonstrate the required proficiency in that native language
2. Use English to meet foreign language requirements

Proficiency in English may be demonstrated by taking the Test of English as a Foreign Language (TOEFL) examination. (For further information regarding the TOEFL examination, see "International Students").

## Research Skills

Courses taken to fulfill research-skill requirements may, at the discretion of the student's major department, be counted for graduate credit in a student's program of study provided such courses are listed in this bulletin as carrying graduate credit. Each course must be passed with a grade of B (3.0) or higher to satisfy the proficiency requirement.

## Academic Integrity

Students are expected to adhere to the highest ethical standards in all their course work and research. Individuals violating that code of conduct are subject to disciplinary action; such breaches could lead to expulsion of the student from Indiana University or to rescission of a degree already granted.

To acquaint students more fully with the range of issues relating to academic integrity, The University Graduate School has prepared a document entitled *Integrity in Graduate Study*. Students should also refer to Indiana University's [Code of Student Rights, Responsibilities, and Conduct](#).

The student's research committee is responsible for evaluating whether the academic standards set by the *Code of Student Rights, Responsibilities, and Conduct*

are upheld in the student's thesis or dissertation. Faculty are encouraged to utilize services provided by the campus teaching and learning centers to aid in assessing student research. Consult the University Graduate School website or Indiana University Knowledge Base for more information.

Academic misconduct is any activity that tends to undermine the academic integrity of the institution. It may include, but is not limited to human, hard-copy, or electronic resources, cheating, fabrication, plagiarism, interference, violation of course rules, and facilitating academic misconduct.

## Transfer from One Department to Another

Matriculated students wishing to transfer from one department within the University Graduate School to another should first consult their graduate advisors or advisory committees and the graduate advisor of the new department about the wisdom of the change. International students desiring to make such a change must also obtain the approval of the Office of International Services at IUB or the Office of International Affairs at IUPUI.

## Revalidation of Courses

Normally, a course may not be counted toward degree requirements if it has been completed more than:

- Five years prior to the awarding of the degree for master's students
- Seven years prior to the passing of the qualifying examination for Ph.D. students

The graduate advisor, after consultation with the advisory committee, may, however, recommend to the dean that course work taken prior to the above deadlines be revalidated if it can be demonstrated that the knowledge contained in the course(s) remains current. Currency of knowledge may be demonstrated by such things as:

- Passing an examination specifically on the material covered by the course
- Passing a more advanced course in the same subject area
- Passing a comprehensive examination in which the student demonstrates substantial knowledge of the content of the course; if the qualifying examination is used for the purpose of revalidation, the number of courses to be revalidated by this method should be limited to two in order to avoid compromising the integrity of the qualifying examination process.
- Teaching a comparable course
- Publishing scholarly research demonstrating substantial knowledge of the content and fundamental principles of the course
- Documented professional experience

Each course for which consideration for revalidation is being requested should be justified separately.

## Leave of Absence

Though timely academic progress is essential to all programs of study, students will occasionally encounter extenuating circumstances that affect their ability to make adequate progress and which may necessitate a leave of absence.

All schools must establish and maintain school-level leave policies for students enrolled in graduate degree programs. Graduate student leave policies must be clearly communicated and accessible to all students and, in general, should address all procedural, academic, and financial considerations.

The University Graduate School will likewise provide exceptions and/or increased flexibility with regards to academic progression to all students approved for a leave of absence by their respective schools.

## G901 - Advanced Research

To keep their candidacies active, doctoral students with 90 credit hours or more and Master of Fine Arts students with 60 credit hours or more may enroll in G901 for a flat fee of \$150. Eligible students must have completed all graduate degree requirements except for the dissertation or final project/performance. Enrollment in G901 is limited to six times. Students who do not meet these criteria pay the applicable credit hour rate for dissertation research.

## Degree Conferral

The University Graduate School will recommend the candidate to the Board of Trustees for the degree only upon completion of all the requirements stated in this Bulletin. Degrees are awarded on the last day of each month of the year with the exception of May, August, and December. For the degree conferral schedule, please consult the Registrar's Office.

### Master's Degree Conferral

For all students seeking a master's degree, an application for the degree must be filed with the University Graduate School at least 30 days before the date anticipated for degree conferral. All degree requirements must be completed at least 30 days before the date of expected degree conferral, including submission to the University Graduate School of the master's thesis (if required for degree). Electronic submissions are preferred.

### Ph.D. Conferral

For doctoral students, submission to the University Graduate School of the copies of the completed dissertation and abstract as described under Submission of the Dissertation constitutes an application for conferral of the Ph.D. degree. Doctoral students are reminded:

1. The 30-day announcement deadline prior to the defense of the dissertation and the 30-day deadline prior to degree conferral are nonoverlapping time periods.
2. Research committees frequently require revisions and corrections after the defense of the dissertation. These revisions must be made before the dissertation is ready for submission to the University Graduate School.

## Commencement

All graduate students are encouraged to participate in the Commencement ceremonies. The solemn yet colorful academic pageantry can provide a fitting culmination to a period of intense study and work. All Ph.D. candidates are now hooded by their professors. Procedures for participating in Commencement may be obtained by contacting the University Graduate School.



# General Requirements for Advanced Degrees

## Guidelines for Requirements

The following statements regarding degree requirements outline the minima that are acceptable. The student must meet not only the general requirements of the University Graduate School but also the specific requirements of the individual department(s). See the "Programs by Campus" entries for departmental requirements.

Requirements are given in this bulletin only for degrees awarded by the University Graduate School. Professional graduate degrees are also available at Indiana University. These professional degrees are administered by the respective schools; information regarding these degrees and the requirements for each may be found in the bulletins of the individual schools.

The University Graduate School recommends that those who intend to continue graduate work toward the Ph.D. degree elect one of the traditional master's degree programs requiring a thesis or a foreign language or both.

## About the Requirements for Master's Degrees

The number of credit hours required by the University Graduate School for master's degrees varies according to the individual degree (see each section for details). However, with the exception of the Dual Master's Program, the requirements for all master's degrees must be completed within five consecutive years.

If the master's degree is used to meet part of the requirements to convert a provisional or standard teaching certificate into a professional certificate (which is no longer a life license), the student's degree program must include at least 18 credit hours of graduate work in the major or minor field or both.

With the exception of the Master of Arts for Teachers (M.A.T.), a thesis or reading knowledge of a foreign language is normally required for a master's degree (see departmental entries for exceptions). If a thesis is not required, departments are encouraged to substitute some other type of special project that is creative, exploratory, or experimental in nature. In lieu of the traditional thesis, for example, the department might require seminar papers, presentations, publishable reports, artistic performances, or exhibitions.

The thesis or alternative project should be equivalent to no fewer than 3 nor more than 9 hours of graduate credit; such credit should be granted under an appropriate departmental course or independent study number. Departures from traditional thesis requirements prescribed by the individual departments must be approved by both the department and the dean.

## Master's Degree Types and Requirements

### Master of Arts

Thirty (30) credit hours are required for the M.A. (some departments require more than 30), all of which may be taken in a single department; at least 20 of these credit hours must be earned in the major field. A minimum of 9

credit hours of course work or at least three courses in the major field (excluding thesis) must be numbered 500 or above.

### Master of Science

General requirements for the M.S. are identical with those for the M.A. (see above) with a few exceptions:

- Students in the combined M.S./M.D. program have seven years in which to complete requirements for the M.S. degree
- Students in the M.S. program in Geology at Indianapolis have six years in which to complete requirements for the M.S. degree

### Master of Fine Arts

The M.F.A. degree, which is offered by the School of Art, Architecture, + Design, and the Departments of English and Theatre, Drama, and Contemporary Dance, requires a minimum of 60 credit hours.

### Master of Arts for Teachers

In order to be admitted to this program, students must hold a baccalaureate degree from a regionally accredited institution. The degree should include sufficient hours in each discipline in which students plan to work to enable them to elect courses carrying graduate credit (see departmental entries for details).

Thirty-six (36) credit hours beyond the baccalaureate degree are required, at least 20 of which must be in the major teaching field, with the remainder allocated either to additional work in the major or to one or more minors. Certain interdepartmental programs have specific minor requirements (for details, see the individual program statements).

Each candidate must possess a teacher's certificate (from Indiana or another state in the United States) at the time the degree is conferred, with the exception of international students, who must be certified by their departments. Because in some cases licensing requirements and M.A.T. course requirements may overlap, the teaching certificate will be issued and the degree will be conferred at the same time. Graduates who do not hold certificates (teaching licenses) should have their credentials evaluated for teaching certification purposes by the graduate licensing advisor in the School of Education.

Upon recommendation of the department and approval by the dean, a maximum of 6 credit hours of undergraduate courses taken after completion of the baccalaureate degree may be applied toward the M.A.T. degree. M.A.T. degrees are available in most areas represented in the high school curriculum. Interested students should consult the chairperson of the department or the division concerned to discuss programs of study.

### Dual Master's Program

Students who are concurrently enrolled in two departments may qualify for two master's degrees under a provision that allows credit earned to satisfy the major requirements of one department to count as elective credit in a second department. Dual master's degrees require a minimum of 50 credits, with at least 21 credits earned in each of the programs.

To be eligible for this program, a student must be formally admitted by both departments and by the University

Graduate School. All requirements of both degrees must be met, including passing any departmental examinations and satisfying foreign-language/research-skill requirements.

If both departments require a thesis, the student may write a single thesis that meets the requirements of both fields. The thesis committee will comprise an equal number of representatives of both departments, and the thesis credit will be split between the two. All course work for the program must be completed within a period of six years.

## Assignment to an Advisory Committee

Three or more faculty members should participate in certification of the student's fulfillment of the requirements for a master's degree. Their participation may take any of several forms, such as administering a final or comprehensive examination, or evaluating the candidate's thesis or alternative project. In instances where shortcomings are apparent, the student may be required to complete additional course work or assignments.

## Preparing and Submitting Theses

### Composition Guidelines

Theses must be typed with the body of the text double-spaced. Theses must be written in English unless you and your department/committee have decided otherwise.

For theses that will be bound in paper form, margins must be at least one-and-a-half inches on the left and one inch on the top, right, and bottom. Students who submit their publications in electronic form only may choose to have one-inch margins on all sides.

Page numbers must be consecutive throughout, with Arabic numerals used for the body of the work and small or lowercase Roman numerals for the front matter. Script fonts (ex. Monotype Corsica) and italicizing large sections of text are not allowed for the main body of your text, although italics may be used appropriately.

The paper used for any bound copies must be watermarked, 100-percent cotton bond paper of 20 or 24 lbs., measuring 8 1/2 by 11 inches. If photographs or detailed graphics are part of the work, make certain they are crisp and clear when printed. It is acceptable to use special laser or photo paper for the page(s) in the dissertation containing images in order to achieve the best possible quality.

### Thesis Approval and Submission

The student must file the original thesis and one copy (both bound) with the University Graduate School. These copies will later be placed in the University Library. At least one additional bound copy must be filed with the major department. The title page must bear the statement: "Submitted to the faculty of the University Graduate School in partial fulfillment of the requirements for the degree Master of \_\_\_\_\_ in the Department of \_\_\_\_\_, Indiana University."

At least three members of the faculty shall normally participate in the approval of the thesis and must sign an acceptance page which appears after the title page. The statement, "Accepted by the faculty of the University

Graduate School, Indiana University, in partial fulfillment of the requirements for the degree Master of \_\_\_\_\_," should precede the signatures on the acceptance page. Each copy of the thesis is to be accompanied by the student's vita sheet inserted at the end. For details regarding the typing and duplication of theses, see Preparation of Theses and Dissertations.

For more information, see [Theses and Dissertations](#) on the University Graduate School website.

## Ph.D. Degree

- Major Subject and Minor Subjects
- Double Majoring
- Combined Degree Programs
- Assignment to an Advisory Committee
- Maintaining Academic Progress
- Qualifying Examinations
- Admission to Candidacy
- Continuing Enrollment
- Dissertation Research Committee
- Preparing Dissertations
- Dissertation Defense
- Submitting Accepted Dissertations

The Ph.D. degree requires completion of at least 90 credit hours of an advanced course of study. The degree is awarded in recognition of a candidate's command of a broad field of knowledge and accomplishment in that field through an original contribution of meaningful knowledge and ideas.

## Major Subject and Minor Subjects

### Major Subject

The student will select a major subject from the departments and programs listed in this bulletin. The major department or program is responsible for monitoring the student's progress toward the degree and for making recommendations to the University Graduate School regarding the nomination to candidacy, the appointment of a research committee, the defense of the dissertation, and the conferring of the degree.

### Minor Subject

The student will select at least one minor subject. A minor is meant to provide additional breadth and to complement and enhance the value of the major. The minor must be distinct from the major – courses counted toward a minor cannot also be counted toward the major, and the courses must be taken outside the major discipline from among the specifically approved minors listed in this bulletin. (As an exception to this rule, Indiana University doctoral students may take a minor in a Purdue University graduate degree program at Indiana University-Purdue University Indianapolis [IUPUI].)

Courses counted toward a minor cannot also be counted toward the major. The determination of the minimum requirements and examination procedure (if any) for the minor is entirely at the discretion of the minor department or program.

### Individualized Minor

In certain cases, special individualized minors (12 or more credit hours of work in two or more programs) or minors

not specifically listed in this bulletin may be approved by the dean upon recommendation of the student's advisory committee, provided such approval is requested prior to pursuit of any of the proposed courses of study. Examination procedures (if any) or other requirements (for example, stipulation of the minimum grades acceptable) should also be specified in the proposal to the dean.

## Double Majoring

Students may pursue two majors in two departments simultaneously if so recommended by each department and approved by the dean. Two general requirements pertain to double majors:

1. There must be a substantive relationship between the two major fields, particularly with respect to the topic of the student's dissertation
2. All degree requirements for each major must be fulfilled, including the passing of two sets of qualifying examinations.

## Double Major Requirements

A total of 90 credit hours is required for the Ph.D. degree with a double major. While judicious program planning may permit completion of some double majors within the 90 credit hours, other students may accrue additional hours due to the programs of study required for each major. In recognition of such a possibility, students in the program will be allowed one additional year, for a total of eight years, before they must take the qualifying examinations.

In some instances it may be possible to count the same work toward requirements in both departments (e.g., a specific foreign language acceptable in both programs). The exact courses of study and examinations required are to be determined by members of the research committee from each of the majors. Any area of substantial overlap in the two courses of study or in the examinations is to be negotiated by the committee as a whole and approved by the dean.

## Double Major Advisory and Research Committees

There must be at least four faculty members on both the advisory and research committees for a double major, with two from each of the majors. Additionally, the research committee must have two chairs (co-chairs), one from each of the majors. If other minor fields are involved, a representative must also be present from each of these.

A link to the complete set of rules relating to double majors and the appropriate form for applying for a double major can be found on the University Graduate School [Forms](#) page.

## Combined Degree Programs

The School of Medicine, School of Dentistry, McKinney School of Law, Maurer School of Law, and University Graduate School offer selected students an opportunity to pursue the M.S. or Ph.D. degrees, concurrently or sequentially, with a coordinated and flexible program leading also to the M.D., D.D.S., or J.D. degree. Combined degree programs are available in anatomy, biochemistry, dental science, medical biophysics, medical genetics, medical neurobiology, microbiology and immunology, pathology, pharmacology, physiology, and toxicology. At Bloomington, the combined degree is

available not only in these basic medical, biological, and physical sciences but also in the humanities and social studies. The combined degree program is designed to meet the student's particular objectives and needs and is planned by the student and an advisory committee of faculty representing the School of Medicine, the McKinney School of Law, the Maurer School of Law, or the School of Dentistry and the respective department or program.

## Combined Degree Admission

Entry into a combined degree program requires approval of the University Graduate School and the relevant school (the School of Medicine, the School of Dentistry, the McKinney School of Law, the Maurer School of Law). Two applications are necessary: one to the Indiana University School of Medicine, School of Dentistry, McKinney School of Law, or Maurer School of Law, and another to the Indiana University Graduate School via the sponsoring department or program.

## Combined Degree Requirements

Completion of the program entails meeting all requirements for both degrees.

Many nonclinical courses of the curriculum of the School of Medicine satisfy course requirements for both degrees, and credit given for graduate study may fulfill some of the School of Medicine requirements. The combined degrees may thus be acquired in less time than would be required if both were taken separately. As well as fulfilling requirements for the M.D. program, a minimum of 30 credit hours of graduate study is required for the combined M.S./M.D. degree. Of these, 10 credit hours may be transferred from exclusively School of Medicine courses with the approval of the student's advisory committee and the University Graduate School. Similarly, a minimum of 90 credit hours of graduate study is required for the combined Ph.D./M.D. degree. A maximum of 30 credit hours of exclusively School of Medicine courses may count toward the Ph.D. degree.

## Indiana Medical Scientist Program

The Indiana University School of Medicine has established an Indiana Medical Scientist Program for fellowship and tuition support of students in the combined M.D./Ph.D. program. A faculty committee nominates students for the program based on commitment to a career as a physician scientist, research experience, undergraduate grade point average, and MCAT scores. A flexible entry program allows students up to one year to identify a research laboratory and degree program. Information can be obtained from the Graduate Division of the School of Medicine.

## Advisory Committee

The student's major department or program shall assign the student to an advisory committee no later than one year after admission to the Ph.D. program. The advisory committee must include:

- At least two members from the major area
- One member from an area outside the major
- At least two of the above members must be members of the graduate faculty

The names of faculty members nominated to serve on the advisory committee shall be forwarded to the student's

school or college for approval no later than one year after the student has been admitted to the Ph.D. program. The advisory committee shall approve the student's program of study and counsel the student until the passing of the qualifying examination.

## Maintaining Academic Progress

The policy of the Graduate Faculty is that students may be dismissed for failure to maintain adequate academic progress toward the degree. For candidates, this standard is set by the faculty of each program or by the student's dissertation committee.

The student must first be notified of deficient academic progress by being placed on probation for one semester. If the deficiency is not rectified then the student may be dismissed.

## Qualifying Examinations

This examination, given at such time and in such manner as the major department shall determine, shall be written, although additional oral examinations may be required. The qualifying examination shall cover the major subjects and may, at the discretion of the minor department(s) or the interdepartmental committee, cover the minor subjects as well.

### Completion of Degree Requirements

Normally, the qualifying examination is taken after the student has completed all course work for the Ph.D. All such work offered in partial fulfillment of degree requirements must either have been completed within seven consecutive calendar years of the passing of the qualifying examination or be revalidated according to procedures outlined in this bulletin (see "Revalidation of Courses"). For students in combined M.D./Ph.D. programs, all course work offered in partial fulfillment of degree requirements of the Ph.D. must have been completed within nine consecutive calendar years preceding the passing of the qualifying examination; for students in Ph.D. programs in music, within 10 consecutive years.

Reading proficiency required in one or more foreign languages must also have been demonstrated, whether by course work or examination, no more than seven years before the passing of the qualifying examination.

### Passing the Qualifying Examination

In the case of an examination of more than one part, the date of passing is regarded as the date of passing the final portion of the examination, typically the oral examination. Students who fail the qualifying examination are normally allowed to retake it only once. The qualifying examination must be passed at least eight months before the date the degree is awarded. Some programs may have deadlines which are earlier than those of the University Graduate School; therefore, students should consult with their program office.

## Admission to Candidacy

Following the passing of the qualifying examination and the completion of all course work and departmental language or research-skill requirements (if any), the student's advisory committee will submit a [Nomination to Candidacy Form](#) to the University Graduate School. Upon approval of the dean, the student will be admitted

to candidacy. By request, students can be provided a certificate of candidacy.

The date of successful completion of the qualifying examination (not the date of final approval of candidacy) is the one used in determining the seven-year periods for currency of courses (see "Qualifying Examination") and completion of the dissertation (see Submission of the Dissertation).

The policy of the Graduate Faculty is that students may be dismissed for failure to maintain adequate academic progress toward the degree. For candidates, this standard is set by the faculty of each program or by the student's dissertation committee. The student must first be notified of deficient academic progress by being placed on probation for one semester. If the deficiency is not rectified, the student may be dismissed.

### Reinstatement to Candidacy

Any student whose candidacy lapses will be required to apply to the University Graduate School for reinstatement before further work toward the degree may be done formally. To be reinstated to candidacy in the University Graduate School, the student must:

1. Obtain the permission of the departmental chairperson
2. Fulfill the departmental requirements in effect at the time of the application for reinstatement
3. Pass the current Ph.D. qualifying examination or its equivalent (the department must define in advance specifically what is meant if an "equivalent" examination is to be used, and that definition must be approved by the dean)
4. Request reinstatement to candidacy from the dean.

Such reinstatement, if granted, will be valid for a period of three years, during which time the candidate must enroll each semester for a minimum of one credit (not including summer terms except when the student is graduating during the summer).

## Continuing Enrollment

Students who have passed the qualifying examination must enroll each semester (excluding summer sessions) for any remaining required course work or dissertation credits. Once such students have accumulated 90 credit hours in completed course work and deferred dissertation credits, they must enroll for a minimum of 1 hour of graduate credit each semester until the degree is completed. Students holding appointments as associate instructors, graduate assistants, or research assistants must ordinarily be registered for 6 credit hours during each full semester. Failure to meet this requirement will automatically terminate the student's enrollment in the degree program.

Students who have completed 90 credit hours and all requirements for the Ph.D. are eligible to enroll in G901 for a flat fee of \$150 per semester. Enrollment in G901 is limited to a total of six semesters. These hours do not count toward the required 90 credit hours of course work. See "G901 - Advanced Research" for more information.



A candidate who will be graduated in June, July, or August of any year must enroll in a minimum of 1 hour of credit during the summer semester as described above.

## Preparing Dissertations

The culmination of the Ph.D. program is the writing of the dissertation, which is required of all doctoral students. The dissertation must be an original contribution to knowledge and of high scholarly merit. The candidate's research must reveal critical ability and powers of imagination and synthesis. The dissertation is written under the supervision of a research director and a research committee, as described in the section "Research Committee."

Although work published by the student may be incorporated into the dissertation, a collection of unrelated published papers, alone, is not acceptable. There must be a logical connection between all components of the dissertation, and these must be integrated in a rational and coherent fashion. It is the responsibility of the student's research committee to determine the kind and amount of published materials which may be included in a dissertation.

### Composition Guidelines

Dissertations must be typed with the body of the text double-spaced. Dissertations must be written in English unless you and your department/committee have decided otherwise.

For dissertations that will be bound in paper form, margins must be at least one-and-a-half inches on the left and one inch on the top, right, and bottom. Students who submit their publications in electronic form only may choose to have one-inch margins on all sides.

Page numbers must be consecutive throughout, with Arabic numerals used for the body of the work and small or lowercase Roman numerals for the front matter. Script fonts (ex. Monotype Corsica) and italicizing large sections of text are not allowed for the main body of your text, although italics may be used appropriately.

The paper used for any bound copies must be watermarked, 100-percent cotton bond paper of 20 or 24 lbs., measuring 8 1/2 by 11 inches. If photographs or detailed graphics are part of the work, make certain they are crisp and clear when printed. It is acceptable to use special laser or photo paper for the pages(s) in the dissertation containing images in order to achieve the best possible quality.

## Dissertation Research Committee

### Forming the Research Committee

To initiate research for the dissertation, the student chooses a professor who will agree to direct the dissertation. The department shall then recommend to the dean for approval a research committee composed of:

1. The chosen director (who will also normally serve as chairperson of the committee)
2. Two or more additional faculty members from the major department

### 3. A representative of each minor

The committee should be selected from the members of the graduate faculty who are best qualified to assist the student in conducting the research for the dissertation. The committee has the responsibility of supervising the research, reading the dissertation, and conducting the final examination.

- All members of a research committee must be members of the graduate faculty. At least half of the members of the committee must be members of the graduate faculty with the endorsement to direct doctoral dissertations; others may be regular members.
- All chairpersons of research committees and directors of research must be members of the graduate faculty with the endorsement to direct doctoral dissertations. The endorsement is reserved for tenure-track faculty with a regular appointment at Indiana University and is granted separately from graduate faculty status. If, however, special expertise in an area is held by a member of the graduate faculty who does not have the endorsement, the departmental chairperson may request that the dean approve such an individual as research committee chairperson or director of the dissertation research.
- In the event that the dissertation research does not involve the area(s) of the minor(s) whether outside or inside the department the major department may request, with the consent of the minor-field representative(s), the substitution of a representative or of representatives from some other field(s) more appropriate to the topic of the dissertation.

### Research Committee Approval

After consultation with and approval by the dissertation director and research committee, the student will submit to the University Graduate School a one- or two-page prospectus of the dissertation research. If the proposed research involves human subjects, animals, biohazards, or radiation, approval from the appropriate university committee must also be obtained. The membership of the research committee and the dissertation prospectus must be approved by the University Graduate School at least six months before the defense of the dissertation. Some programs may have deadlines which are earlier than those of the University Graduate School; therefore, students should consult with their program office.

## Dissertation Defense

### Submitting the Dissertation to the Research Committee

When the dissertation has been completed, the student should submit an unbound copy to each member of the research committee as the initial step in scheduling the defense of the dissertation. All members of the research committee should read the dissertation in its entirety before attending the defense.

At this stage both the student and the faculty members must extend certain courtesies to each other. It is the responsibility of the student to give faculty members sufficient time to read the dissertation without making unreasonable requests of them based upon University

Graduate School time limitations, immediate job possibilities, contract renewal, or some other reason. Similarly, a faculty member should not keep a student's work for inordinate periods of time because of the press of other duties. Once a faculty member assumes membership on a research committee, it becomes another part of his or her teaching assignment, comparable to conducting regularly scheduled classes.

### Readiness for Defense

After the committee members have read the dissertation, there should be direct communication (either in writing or orally) between the research committee chairperson and the other committee members about its readiness for defense. Readiness for defense, however, is not tantamount to acceptance of the dissertation; it means that the committee is ready to make a decision. The decision to hold a doctoral defense, moreover, is not entirely up to the research committee. If a student insists upon the right to a defense before the committee believes the dissertation is ready, that student does have the right to due process (i.e., to an oral defense) but exercises it at some risk.

If the decision to proceed with the defense of the dissertation is made against the judgment of one or more members of the committee, or if one or more members of the committee disapprove of parts of or all of the dissertation, the committee member(s) should not resign from the committee in order to avoid frustration or collegial confrontation. The University Graduate School urges that such committee members, after ample communication with both the student and the chairperson, remain on the committee and thus prevent the nomination of a committee that might eventually accept what could be unsatisfactory work. Such a committee member could agree that a dissertation is ready for defense but should not be passed (or should not be passed without substantial modification). There will, of course, be situations in which the membership of research committees should or must be changed (e.g., turnover of faculty), but changes because of modifications in the dissertation topic or some equally plausible reason should be made early in the writing of the dissertation.

### Scheduling and Conducting the Defense

Thirty days prior to the scheduled defense of the dissertation, the candidate must submit to the University Graduate School a [Ph.D. Defense Announcement](#) via the electronic document (e-doc) system. (Some programs may have requirements which are earlier than those of the University Graduate School; therefore, students should consult with their program office.) The announcement contains, among other things, a summary of the dissertation (not less than 150 words) which is informative and contains a brief statement of the principal results and conclusions. The announcement must be approved by the research committee chairperson. If the candidate has published any scholarly articles relevant to the topic of the dissertation, bibliographical references should be included in the summary. A copy of such announcements will be sent to any member of the graduate faculty upon request.

Once the final examination has been scheduled, the announced time and place of the defense must not be changed without the approval of the dean. Any member

of the graduate faculty who wishes to attend the final examination is encouraged to do so; it is requested, however, that the faculty member notify the chairperson of the research committee in advance so that space can be arranged. With the approval of the research committee and the consent of the candidate, other graduate students may attend the defense of the dissertation; normally such students will act as observers, not as participants.

### Defense Outcome

At the end of the oral examination, the research committee must vote on the outcome of the examination. Four options are available to the committee:

1. Pass
2. Conditional pass
3. Deferred decision
4. Failure

If the decision to pass is unanimous, the dissertation is approved once it is received by the University Graduate School along with an acceptance page signed by the members of the research committee. If the decision is not unanimous, majority and minority reports should be submitted to the dean who, within 10 working days, will investigate and consult with the research committee. Upon completion of the dean's investigation and consultation, another meeting of the research committee will be held, and if a majority votes to pass, the dissertation is approved when it is received by the University Graduate School with an acceptance page signed by a majority of the members of the research committee.

The student must have received acceptance of his or her dissertation and must submit a copy to the University Graduate School within seven years after passing the qualifying examination. Failure to meet this requirement will result in the termination of candidacy and of the student's enrollment in the degree program. For information about candidacy reinstatement, see "Admission to Candidacy"

## Submitting Accepted Dissertations

Following acceptance by the research committee, the dissertation is submitted to the University Graduate School. Students are expected to submit the final version of the dissertation within six months of the defense date to maintain sufficient academic progress.

### Title Page, Acceptance Page, and Abstract

Each dissertation must include a title page bearing the statement:

"Submitted to the faculty of the University Graduate School in partial fulfillment of the requirements for the degree Doctor of Philosophy in the Department of \_\_\_\_\_, Indiana University."

(Note: Students majoring in programs will use "Program of;" students majoring in departments outside of the College of Arts and Sciences will use "School of.") The date of this page should be the month and year when all requirements have been satisfied; this is not necessarily the month in which you defend.

Following the title page is the acceptance page with the statement:

"Accepted by the faculty of the University Graduate School, Indiana University, in partial fulfillment of the requirements for the degree Doctor of Philosophy."

The acceptance page must be signed by members of the research committee. See the online guide on the University Graduate School website for the complete order for the front matter.

The candidate must also submit an abstract of no more than 350 words for the dissertation that has been approved and signed by the research committee. The abstract will appear in ProQuest Dissertations & Thesis Database, managed by ProQuest Dissertation Publishing, Ann Arbor, Michigan. If the original abstract is not in English and an English translation has been made, submit both the English and non-English language abstracts.

Any creative work, such as a dissertation, is automatically copyrighted; however, registration with the U.S. Copyright Office provides (various/certain) legal benefits. The cost for registering a work through ProQuest is currently \$55. Contact the University Graduate School for details.

### **Electronic Submission**

This is the preferred submission method. Once approved and finalized, the dissertation should be submitted electronically in the form of a .pdf file to ProQuest. A microfilm version will also be made available for purchase from ProQuest Dissertation Publishing by all those who request it. Effective September 27, 2010, there is no longer a fee for those dissertations submitted electronically and opting for Traditional Publishing. Open Access publishing has a fee of \$160.00

### **Traditional Unbound Paper Submission**

If the student wishes to submit via traditional unbound paper method, he or she must schedule a dissertation review appointment with the PhD recorder in the University Graduate School, once his/her research committee has approved the final version of the dissertation. In this appointment, the recorder will review an unbound copy of the dissertation for necessary formatting revisions. The student will need to make the requested revisions and submit to the University Graduate School one unbound copy of the dissertation, in a box suitable for mailing, and one bound copy.

The bound copy is sent to the University Library. Some departments also require an additional bound copy. Students should contact their department regarding departmental policies on bound copy submission. The unbound copy will be submitted to ProQuest where the abstract will be published and the dissertation microfilmed for storage in their database. The required fee for publishing the abstract and microfilming the dissertation is currently \$65 for traditional publishing or \$160 for Open Access Publishing.

For more information about submitting your dissertation, see "Theses and Dissertations" on the Bloomington or IUPUI University Graduate School website.

## **Graduate Certificates**

### **Area Certificates**

A number of departments offer area certificate programs that students may complete through concurrent study. Such certificates can be pursued only in conjunction with a degree program and cannot be awarded independently.

For further information, please see the departmental entries in this bulletin.

### **Stand-Alone Certificates**

Graduate certificates are offered in some fields to allow a focused credential to be earned by a person who has already earned an undergraduate degree, whether or not the person is currently enrolled in an Indiana University master's or doctoral program. The courses taken are typically the same as those taken for other degrees, but a more limited number of courses is required for the certificate. Graduate certificates typically involve a predetermined curriculum of 16 to 20 credit hours.

Students enrolled in stand-alone certificate programs who wish to subsequently pursue an advanced degree must make separate application to the University Graduate School and must have specific permission of the faculty of their degree program to use any credits earned as a certificate student for the more advanced degree.

## **Assistantships and Instructorships**

### **Associate Instructorships, Graduate Assistantships, and Research Assistantships**

A large number of associate instructorships, graduate assistantships, and research assistantships are available in departments and schools offering degrees through the University Graduate School. Some of these positions are accompanied by fee remissions which defray a large percentage of tuition and fees. Application for such positions should be made to the department or school in which the student wishes to work. Early application is advisable.

### **Resident Assistantships**

Positions are available on the Bloomington campus and at IUPUI for single graduate students to serve as resident assistants in the residence halls. Selection of graduate students for these positions is based on the applicant's academic record, previous background and experience, potential for work with undergraduate students, and personal qualifications necessary to relate successfully to other people. The resident assistant serves as an advisor to a living unit of 50 students in one of the university residence centers. These positions provide room, board, and a cash stipend; course work is limited to a maximum of 12 credit hours each semester. For further IUB information, contact the director, Department of Residence Life, 801 N. Jordan Avenue, Bloomington, IN 47405, telephone (812) 855-1764. For further IUPUI information, contact the director, Office of Housing and Residence Life, 415 Porto Alegre Street, Indianapolis, IN 46202-5180, telephone (317) 274-7200.

## **Fellowships**

A number of fellowships are available to students enrolled in the University Graduate School. Among them are University Graduate School fellowships, fee scholarships, and various privately and federally funded awards.

Students should apply for these fellowships directly to the major department. In all cases, early application is advisable. It should be noted that all such award holders are required to devote full time to their studies.

Indiana University also offers several recruitment fellowship and support programs for students underrepresented in graduate education (ethnic minority, first generation and/or low income college students and women in the sciences). These include the Graduate Scholars Fellowship, Adam W. Herbert Graduate Fellowship, Women in Science Graduate Fellowship, Ronald E. McNair Graduate Fellowship, and the Educational Opportunity Fellowship. In some cases students must meet certain criteria in order to be eligible for consideration for these awards.

To be considered for any of these awards, a student should submit an IU application form for admission and financial aid to the relevant graduate program by mid-January of the year preceding enrollment. Information for IUB students can be obtained from the University Graduate School Fellowship Coordinator (812-855-8853; [grdschl@indiana.edu](mailto:grdschl@indiana.edu)) or by visiting the [IUB office Fellowships and Awards webpage](#). Further information for IUPUI students can be obtained from the Graduate Office at IUPUI (317-274-1577) or by visiting the [IUPUI office Fellowships and Awards webpage](#).

## Doctoral Student Grants-in-Aid of Research

### Grant-in-Aid of Doctoral Research

The grant-in-aid of doctoral research is designed to assist Bloomington doctoral students in funding unusual expenses arising from the research required for the dissertation. Examples of such expenses include travel to special libraries or laboratories, payments to consultants, specialized equipment, and duplication of vital materials needed for writing the dissertation. Expenses that are not supported include typing and duplicating of dissertations, normal living expenses, routine laboratory supplies, and computers. A student must have been formally admitted to Ph.D. candidacy by the application deadline (the Nomination to Candidacy Form must have been approved by the Dean of The University Graduate School). Students pursuing doctoral degrees other than the Ph.D. (i.e., Ed.D. or D.M.) may also apply for a Doctoral Student Grant-in-Aid of Research Award. Current students must be enrolled full-time on the Bloomington campus during the semester in which an application is submitted (6 credit hours is considered full time). The maximum amount of aid is \$1,000 per academic year. Awards are made two times a year; the deadlines for completed applications are in January and September for receipt by the University Graduate School. Application information can be found on the University Graduate School website, <http://www.indiana.edu/~grdschl/internal-awards.php>.

### Grant-in-Aid of Master's of Fine Arts Projects

The grant-in-aid of master's of fine arts projects is designed to assist in funding Bloomington MFA students for unusual expenses incurred in connection with MFA projects, such as travel to special libraries, payments to consultants, photocopies, electronics and specialized equipment. Expenses that are not supported include normal living expenses, routine supplies, and computers.

A student must have been formally admitted to an MFA program by the application deadline. Current students must be enrolled full-time on the Bloomington campus during the semester in which an application is submitted (6 credit hours is considered full time). The maximum amount of aid is \$1,000 per academic year. Awards are made two times a year; the deadlines for completed applications are in January and September for receipt by the University Graduate School. Application information can be found on the University Graduate School website, <http://www.indiana.edu/~grdschl/internal-awards.php>.

## The GradGrants Center

The GradGrants Center (GGC) is a free service available to all enrolled graduate students on all campuses of Indiana University. The GGC provides information and training to assist graduate students in their search for funding to further research and graduate study at Indiana University. The GGC's services include funding-database searches, workshops, one-on-one proposal-writing consultation, a library of funding sources and proposal-writing books, and an electronic mailing list used to inform patrons of upcoming workshops, grant deadlines, and relevant news. The center's website also provides students a central location to find available student academic vacancies and gives departments on any IU campus an additional means to advertise their positions.

The GradGrants Center—Bloomington is located in the Herman B Wells Library, Room 544E (812-855-5281; [gradgrnt@indiana.edu](mailto:gradgrnt@indiana.edu); [indiana.edu/~gradgrnt/](http://indiana.edu/~gradgrnt/)).

## Other Student Financial Assistance

Long-term loans and Federal Graduate Work-Study are available to graduate students at IU. More information and application requirements are on the Indiana University website: [www.indiana.edu/~sfa/](http://www.indiana.edu/~sfa/).

IUPUI students should contact the Office of Student Financial Services, CE 250A, 420 University Boulevard, Indianapolis, IN 46202 (317-274-4162). For information about other campuses, contact the Office of Financial Aid and Scholarships, Whitewater Hall 112, 2325 Chester Boulevard, Richmond, IN 47374-1289, (765-973-8206); contact Financial Aid Services, 2101 E. Coliseum Blvd., Fort Wayne, IN 46805-1499 (260-481-4739); the Office of Scholarships and Financial Aid, KC 230, 2300 S. Washington St., Kokomo, IN 46904-9003 (765-453-2000); the Office of Scholarships and Financial Aid, Administration Building 157, P.O. Box 7111, 1700 Mishawaka Avenue, South Bend, IN 46634-7111 (574-520-4357); or the Office of Student Financial Aid, University Center South, Room 105, New Albany, IN 47150 (812-941-2246).

## Preparing Future Faculty

A number of graduate programs have established Preparing Future Faculty (PFF) programs, which are designed to introduce graduate students to the full range of professional responsibilities in research, teaching, and service they will encounter in academia. These programs typically include more advanced courses in pedagogy, the opportunity to work closely with teaching mentors and to construct teaching portfolios, workshops on specialized topics, and expanded teaching possibilities, often in



cooperation with other campuses of Indiana University or other institutions.

For information about these programs, contact the individual departments. Further information for IUB students can be obtained from the [IUB Preparing Future Faculty webpage](#) or from the University Graduate School, Wells Library E546, 1320 E. 10th Street, Bloomington, IN 47405 (812-855-5697; [grdschl@indiana.edu](mailto:grdschl@indiana.edu); [graduate.indiana.edu](http://graduate.indiana.edu)). Further information about the Preparing Future Faculty and Professionals (PFFP) program at IUPUI can be obtained from the [IUPUI Preparing Future Faculty and Professionals webpage](#) or by contacting [pffp@iupui.edu](mailto:pffp@iupui.edu).

## Traveling Scholar Program

This program enables Indiana University doctoral-level students to take advantage of special resources available at other Big Ten Academic Alliance (BTAA) institutions that do not exist at Indiana University. Students in the program register and pay fees at Indiana University but attend one or more of the participating institutions, each for no more than two semesters or three quarters. To find eligibility requirements, program details, and online application information, please visit the [BTAA Traveling Scholar Website](#). For further information about the BTAA Traveling Scholar Program at Indiana University, contact Assistant Dean Jeff Rutherford, the University Graduate School, Wells Library E546 (812-855-4010; [jrutherford@iu.edu](mailto:jrutherford@iu.edu)).

The member institutions of the Big Ten Academic Alliance (BTAA) are the University of Chicago, the University of Illinois at Urbana-Champaign, Indiana University, the University of Iowa, the University of Michigan, Michigan State University, the University of Minnesota, University of Nebraska-Lincoln, Northwestern University, Ohio State University, Pennsylvania State University, Purdue University, Rutgers-The State University of New Jersey, and the University of Wisconsin-Madison.

## Foreign Language Instruction

Indiana University offers instruction in a wide variety of foreign languages. Formal courses or tutorials have been offered in recent years on the Bloomington campus in the following:

- Akan
- American Sign Language
- Ancient Egyptian
- Arabic
- Avestan
- Azerbaijani
- Bamana
- Bengali
- Buryat
- Catalan
- Chaghatay
- Chechen
- Chinese (Classical and Mandarin)
- Coptic
- Croatian
- Czech
- Dari

- Dutch
- English as Second Language
- Estonian
- Evenki
- Finnish
- French
- Georgian
- German
- Gothic
- Greek (Classical and Modern)
- Haitian Creole
- Hebrew (Biblical and modern)
- Hindi
- Gujarati
- Hungarian
- Italian
- Japanese (Classical and Modern)
- Kazakh
- Korean
- Kurdish
- Lakota (Sioux)
- Latin
- Macedonian
- Manchu
- Manichaeen
- Middle High German
- Mongolian (and Classical Mongolian)
- Norwegian
- Old Church Slavonic
- Old English
- Old High German
- Old Icelandic
- Old Irish
- Old Saxon
- Old Tibetan
- Old Turkic
- Pahlavi
- Pashto
- Persian
- Polish
- Portuguese
- Quechua
- Romanian
- Russian
- Sakha (Yahut)
- Sami (Lappish)
- Sanskrit
- Serbian
- Sioux (Lakota)
- Slovak
- Slovene
- Sogdian
- Spanish
- Swahili
- Syriac
- Tajik
- Tibetan
- Turkish (Modern and Ottoman)
- Turkmen
- Ukrainian

- Urdu
- Uyghur
- Uzbek
- Welsh
- Wolof
- Yiddish
- Yucatec Maya
- Zulu

## University Information Technology Services (UITS)

### University Information Technology Services (UITS)

As an IU graduate student, you'll use information technology (IT) every day. UITS ([uits.iu.edu](https://uits.iu.edu)), the central technology organization at IU, is here to help you.

With offices on each IU campus, UITS oversees a broad spectrum of services that support academic and administrative pursuits at IU. These services include high-speed campus networking, wireless access, central web hosting, free and low-cost software for personal use, and software and support for teaching, learning, and research. In addition, UITS provides high-performance supercomputers, mass data storage, and visualization technology.

*Establish your computing accounts:* To set up your student Network ID, email, and printing accounts, visit [itaccounts.iu.edu](https://itaccounts.iu.edu).

*Download software:* Get no-cost software – including Adobe Creative Suite, Microsoft Office, and much more – from [IUware](https://iuware).

*Brush up on technology:* Take advantage of no-cost training opportunities, such as in-person and online computing workshops and self-study training resources at [UITS IT Training](https://uits.ittraining).

*Sign up for emergency alerts:* Set up your Emergency Notification Settings to get critical IU alerts by voice mail, text message, and email through [IU-Notify](https://iu-notify).

*Stay in the know with news from UITS:* You're automatically subscribed to a UITS email newsletter when you sign up for your IU accounts. Be sure to read it regularly. You can also read news online at [uits.iu.edu](https://uits.iu.edu) under "News and Events," at [itnews.iu.edu](https://itnews.iu.edu), and on IU Mobile.

*Follow UITS on Twitter:* @InsideUITS

*Become a fan of UITS:* [facebook.com/iu.uits](https://facebook.com/iu.uits)

### Get tech help

#### Phone:

Bloomington: (812) 855-6789  
Indianapolis: (317) 274-4357

#### Email:

[ithelp@iu.edu](mailto:ithelp@iu.edu)

#### Chat:

[ithelplive.iu.edu](https://ithelplive.iu.edu)

#### Online:

[uits.iu.edu](https://uits.iu.edu) and [nu2it.iu.edu](https://nu2it.iu.edu)

### Knowledge Base:

[kb.iu.edu](https://kb.iu.edu)

### Walk-in:

Bloomington: Wells Library, Information Commons  
Indianapolis: Informatics & Communications Technology Complex, IT 129

UITS consists of six divisions that encompass the range of organizational IT functions and services:

- Research Technologies focuses on leading edge research spanning numerous academic fields
- Learning Technologies supports teaching and learning tools—from digital libraries to classroom technologies
- Support coordinates technical support services and software distribution for students, faculty, and staff
- Enterprise Software supports a range of software applications—including numerous open-source software solutions—across a broad spectrum of academic, research, and systems fields
- Networks specializes in network operations, architecture, and planning, and serves high performance state, national, and international research and education networking infrastructures such as I-Light, the Internet2 Network, and TransPAC2
- Enterprise Infrastructure manages a variety of infrastructure efforts—from university services such as campus telephone and email to centralized computer operations and informational database systems

## Bulletins

### College of Arts and Sciences; Kelley School of Business; Luddy School of Informatics and Computing; University Graduate School

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

## Bloomington

- [Quantum Information Science](https://quantum.iu.edu)

## African American and African Diaspora Studies

### College of Arts and Sciences

Departmental E-mail: [aaads@indiana.edu](mailto:aaads@indiana.edu)

Departmental URL: <https://aaads.indiana.edu/index.html>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements

contained only in *The University Graduate School Bulletin*.)

## Curriculum

### Program Information

The multidisciplinary Department of African American and African Diaspora Studies (AAADS) seeks to:

1. create and share with academic and nonacademic communities scholarship of the highest quality dealing with the broad range of the African American and African Diaspora experience;
2. promote the study and understanding of the historical and contemporary connections among Africans, African Americans, and other New World black communities; and
3. affirm the democratic tradition of equal opportunity for all by combating all forms of discrimination based on ethnicity, gender, class, and religious differences. The department assumes the ongoing responsibility of creating materials and conducting seminal research that aids in the development and shaping of African American and African Diaspora Studies as a discipline.

### Master of Arts Degree in African American and African Diaspora Studies

The Department of African American and African Diaspora Studies at Indiana University is committed to being one of the world's leading multi- and interdisciplinary graduate studies programs focused on peoples of African descent in the United States in comparison to African-descent peoples in other globalized contexts. With an emphasis on diverse epistemologies, theories, methodologies, ethical considerations, and innovative teaching pedagogies, our goals are:

1. to offer students an intense program in the examination of African American and Diasporic African descent issues in and outside the United States including their transnational continuities and discontinuities;
2. to encourage students to develop and/or fine-tune excellent skills in areas such as creative research, writing, oral communication, technology intercultural competence and collaborative research;
3. to provide students with invaluable intellectual training by bridging curriculum content and practical experience gained from course content in oral history, survey, and ethnographic field work, museums and library archives, and internship opportunities with a range of agencies, organizations, and institutions;
4. to sustain a learning environment in which students create and refine critical questions, develop problem solving skills, and synthesize intellectual bridges between the arts, humanities, and social sciences with emphasis on interpretations of African American experiences in the United States and abroad;
5. to give students excellent research foundations in the humanities, the social sciences, and other interdisciplinary fields;
6. to prepare students for a broad spectrum of career opportunities in areas such as academia, creative and performing arts, nonprofit management, public

policy, urban studies, conflict resolution, and social services.

The purposes of the M.A. degree are:

1. to offer students an intense program in the analysis of African American issues;
2. to expose students to both historical and current methodological approaches;
3. to expose students to issues throughout the African Diaspora;
4. to refine critical and problem-solving skills in both the humanities and social sciences;
5. to extend a sound basis for those going into a doctoral program; and
6. to prepare students for administrative, teaching, communication, and social service careers.

In sum, the program provides a theoretical base of knowledge, methods of research, and a context for analyzing African American and Diaspora experiences that can be invaluable either in further graduate studies or in a specific job or career choice.

### Admission Requirements

The program is open to any eligible student with a bachelor's degree from an accredited college. Applicants must have a minimum grade point average (G.P.A.) of 3.0. Letters of recommendation, a brief personal essay, a high quality writing sample, and G.R.E. scores are the main sources of information upon which decisions will be made.

### Course Requirements

All students will complete a minimum of thirty-two (32) credit hours with a minimum 3.0 cumulative grade point average. The degree offers graduate students two different tracks or specializations to focus their course work—"Power, Citizenship, and the State" and "Race, Representation, and Knowledge Systems"—which reflect the current state of the field and take advantage of the traditional strengths of the department, its adjunct faculty, the College of Arts and Sciences, and the Bloomington campus.

### Core Curriculum for the M.A. in African American and African Diaspora Studies:

Students will also complete six (6) required courses (for a 23 cr. total) composed of the following:

- A500 Intro to AAADS (3 cr.)
- A556 Race and Culture (4 cr.) **or** A557 Race and Politics (4 cr.)
- A605 Race and the Global City I (4 cr.) **or** 606 Race and the Global City II (4cr.)
- A696 Interdisciplinary Methods (4 cr.)
- A690 Core Readings (4 cr.)
- A698 Field Study (4 cr.)

Students will choose topically appropriate electives offered in AAADS or by other faculty (9 credits). Students may choose from the following courses in AAADS for their electives.

- A691 ProSeminar on Historical and Cultural Studies (3 cr.)
- A692 ProSeminar on Writings and Literature (3 cr.)

- A693 ProSeminar on Social and Behavioral Sciences (3 cr.)
- A694 ProSeminar on Performing, Visual and Material Arts (3 cr.)

Choices of electives outside the department can be taken per discussion with the graduate advisor. Please note all departmental electives must be subject relevant, especially if they are offered outside the College of Arts and Sciences.

### Foreign Language

The College of Arts and Sciences, Graduate Division, requires students to satisfy the foreign language requirement by showing satisfactory completion of coursework or passing a language proficiency exam in the foreign language of their choice. Students should consult with their advisor regarding an appropriate language for the field. Proficiency in a foreign language may be demonstrated by passing a proficiency exam administered by one of Indiana University's foreign language departments, or earning a grade of "B" or better in a graduate reading course offered by a foreign language department. Students eligible to use English as a second language to fulfill the graduate language requirement should contact the Center for English Language Training (C.E.L.T.) for details. See the Director of Graduate Studies (DGS) regarding any additional information, which may include the following stipulation:

If a graduate student enrolls in a literature or civilization course numbered 300 or higher, the reading for the course is done in the foreign language (Catalan, French, German, Italian, Portuguese, Russian, or Spanish), and if the student completes the course with a grade of 'B' or better, the University Graduate School will accept the individual readings courses or correspondence courses for this purpose.

Students are **required to enroll in 6 hours** of any foreign language certified by the graduate school. M.A. candidates may satisfy the foreign language requirement by showing satisfactory completion of course work or passing a language proficiency exam.

Each student must complete a thesis, a creative project, an examination (written and including an oral defense), or two publishable seminar papers. If the student chooses to write a thesis, an oral defense of their thesis must be convened prior to the granting of the degree. In the case of a creative project, a public presentation is required in addition to the oral defense and analytical or creative written component. Students who choose to write publishable papers are also required to give an oral presentation.

### M.A. Examination and Publishable Paper Requirements

#### Examination procedures

The M.A. exam is evaluated by an Examining Committee. Students will file the Application for the M.A. Examination with the Graduate Secretary one month prior to the examination.

The results of the exam will be graded pass, distinction or fail. Passing the exam requires that each of the four examination answers has been passed by the examiners.

A pass "with distinction" requires that all four examination answers have been graded as "distinction" by the examiners. If two or more of the examination answers are graded as fails by the examiners, the student is required to retake the failed portions of the exam.

All exams with fewer than three passed questions will be reviewed by the Graduate Studies Committee, in consultation with the Examining Committee, to determine whether a new assessment is warranted.

Following the student's completion of the written portion of the examination (which should be scheduled for a date either in January or May), the Examining Committee must report the results of the written exam to the Director of Graduate Studies within three weeks. The oral exam must be scheduled within 7 days following the reporting of the written results. The oral will cover topics related to the written questions, as well as areas of general knowledge that may evolve in the course of the oral examination. Passing the oral requires students to demonstrate a keen knowledge and understanding of information in the field of Africana Studies equal to or beyond the written portion of the exam.

Examination results will be reported to the student by the Director of Graduate Studies. In the instance of a failing exam, the Director of Graduate Studies will hold a face-to-face meeting with the student and will provide a written evaluation of the exam.

Students who fail the M.A. Exam in whole will be notified and then placed on academic probation. Such students will have the opportunity to retake the exam questions that they failed during a subsequent regularly scheduled examination period. Any student who fails the examination a second time will be formally dismissed from the program.

The above policy regarding dismissal from the program also applies to students who fail the oral twice. Retake of the oral exam will be based upon the original written exam that the student will have taken and passed. Students must reschedule the oral that they failed within one month after the first oral examination period.

### Publishable Papers Option

In consultation with the Director of Graduate Studies, students may form a committee of three AAADS faculty tasked with helping him/her with the creation of two publishable papers, which may grow out of a seminar class in AAADS. The papers may, for example: (a) develop a compelling idea about black culture combined with a new cultural and social understanding of issues and concepts exemplified by scholarly literature in the field of Africana Studies; (b) critique a defining historical moment in the life and culture of black people. For example, a student may demonstrate how, particularly after the civil rights period, DuBois's notion of "double consciousness" has been trumped by a post-racial society; (c) examine a phenomenon that refocuses attention on how black Americans adapt to their sociocultural world. For example, how does the content of black culture help address fundamental questions of human existence?

Prior to the presentation of the two publishable papers to the AAADS faculty, the student must have submitted one of the papers to a refereed journal for review. Letters or e-



mails from editors will constitute evidence of submission and/or acceptance of the student's essay for publication in a refereed journal. The two-hour presentation of the two publishable papers will involve critical questions from the student's essay/paper examining committee, plus the AAADS faculty, adjuncts and graduate students. Within three weeks following the two presentations, the student's Essay/Paper Examining Committee will meet and determine whether the student has successfully created and defended the ideas inherent in the publishable papers.

**Dual M.A./M.F.A. in African American and African Diaspora Studies (Master of Arts) and the Creative Writing Program (C.W.) (Master of Fine Arts) Requirements (26 credit hours minimum)**

- Required courses in AAADS (10-12)
- Electives (12 credits minimum): Students should take courses organized around a topical concentration, regional or comparative. These courses are to be selected from the range of AAADS and those cross-listed A.A.A.D.S. in the College and several professional schools with the approval of the student's major advisors in C.W. and AAADS.
- A698 Field Study Seminar (4-8): research and preparation of thesis essay. Students can take two semesters of A698 at four hours per semester. (one semester in thesis research and one semester for thesis writing).
- Language requirement (two semesters – 6 hours)

**MFA Requirements (At least 60 credit hours--48 in residence)**

- 16 hours of workshops (poetry or fiction)
- Four courses (12-16 hours) in AAADS literature, culture, and history, at least two of which must be at the 600 level or above
- W554 Teaching Creative Writing
- W664 Topics in Current Literature or W680 Theory and Craft of Writing
- 10 elective graduate hours
- Maximum of 12 hours for thesis credit
- Thesis
- Please see director of creative writing for course approval or AAADS director of graduate studies for courses outside the College of Arts and Sciences.

**Foreign Language Requirements (two semesters)**

- MA/MFA students may satisfy the foreign language requirement by showing satisfactory completion of course work or passing a language proficiency exam. Language requirements should be met as soon as possible, beginning immediately after matriculation at I.U. A student is expected to be working on fulfilling the language requirements every semester until they are completed.

**Dual M.A./M.L.S. in African American and African Diaspora Studies (Master of Arts) and the Department of Information and Library Science (Master of Library Science)**

The dual M.A./M.L.S. program requires completion of a minimum of 58 credit hours of graduate course work. (The degrees if completed separately would require 68 credit

hours.) Students must apply for admission to the master's programs of both African American and African Diaspora Studies and the Department of Information and Library Science and meet the admissions criteria established for each. The two degrees must be awarded at the same time.

**M.A. in African American and African Diaspora Studies**

**Requirements (28 credit hours minimum)**

**General Requirement (12 cr.)**

- A500 Introduction to African American and African Diaspora Studies, (3 cr.)
- A690 Core Readings in African American and African Diaspora Studies (4 cr.)

**Proposed Graduate Internship**

A686 Graduate Internship in African American and African Diaspora Studies (4 cr.)

**Specialization (12 cr. minimum):**

Students should take a minimum of 9 graduate hours in one of the two tracks in African American and African Diaspora Studies. An additional 3 graduate hours should be taken in an elective.

- A. Thesis A698 Field Study Seminar (4 cr.)
- Master of Library Science Requirements (30 credit hours)
- Completion of the M.L.S. Foundation courses (18 cr.)
- Either Information and Library Science Z623 Information in the Humanities or
- Information and Library Science Z625 Information in the Social Sciences (3 cr.)
- Information and Library Science elective courses (9 cr.)

**Dual M.A./M.P.A. in African American and African Diaspora Studies (Master of Arts) and School of Public and Environmental Affairs (Master of Public Affairs)**

Students must apply separately to and be accepted into both the African American and African Diaspora Studies Master of Arts degree program and the School of Public and Environmental Affairs (SPEA) Master of Public Affairs (MPA) degree program. Students must indicate on both application forms that they are applying for the AAADS/SPEA dual degree.

**M.A. in African American and African Diaspora Studies Requirements (28 credit hours minimum)**

**General Requirement (12 cr.):**

- A500 Introduction to African American and African Diaspora Studies, (3 cr.)
- A690 Core Readings in African American and African Diaspora Studies (4 cr.)

**Proposed Graduate Internship**

A686 Graduate Internship in African American and African Diaspora Studies (4 cr.)

**Specialization (12 cr. minimum):**

Students should take a minimum of 9 graduate hours in one of the two tracks in African American and African Diaspora Studies. An additional 3 graduate hours should be taken in an elective.

- A. Thesis A698 Field Study Seminar (4 cr.)

### **M.P.A. of Public Affairs Requirements (36 cr. minimum)**

M.P.A. Core (18 cr.)

- V502 Public Management (3 cr.)
- V506 Statistical Analysis for Effective Decision Making (3 cr.)
- V517 Public Management Economics (3 cr.)
- V540 Law and Public Affairs (3 cr.)
- V560 Public Finance and Budgeting (3 cr.)
- V600 Capstone in Public and Environmental Affairs (3 cr.)

### **Specialized Concentration (18 cr.)**

Students are required to develop specialized concentrations comprised of courses approved by SPEA faculty advisors.

### **Doctor of Philosophy Degree**

The interdisciplinary doctoral degree in African American and African Diaspora Studies (AAADS) focuses on the experiences of people of African descent in the United States, in the African Diaspora, and in the world. These shared experiences—among them, slavery, emancipation, imperialism, decolonization, and racism—warrant close attention, and mark this field (Black Studies/Africana Studies) as a discrete unit of study that bears directly and powerfully on world history, literature, and politics. The doctoral degree offers graduate students two different tracks or specializations to focus their course work—"Power, Citizenship, and the State" and "Race, Representation, and Knowledge Systems," which reflect the current state of the field and take advantage of the traditional strengths of the department, its adjunct faculty, the College of Arts and Sciences, and the Bloomington campus. Within each of these tracks, the degree emphasizes the importance of transnational, global, and comparative perspectives, with an emphasis on the interdisciplinary analysis of race in the world. To provide meaningful support and guidance, this degree program offers supportive mentoring, a reflection of the department's 40-year commitment to quality teaching.

### **Admission Requirements**

The AAADS Graduate Studies Committee, in consultation with the chair of the department and faculty, will be responsible for the admission of graduate students into the doctoral program. That committee will consider Graduate Record Examination scores, a personal statement, a writing sample of no more than 30 pages, and at least three letters of reference from instructors who have sufficient evidence to write candidly about the student's intellectual abilities and potential for success in this endeavor. Prospective graduate students who hold a master's degree must have a cumulative grade point average of 3.5 on a 4.0 scale in their prior program(s). Incoming graduate students who have recently completed their undergraduate studies must have at least a 3.3 grade

point average for their last two years of undergraduate studies.

### **Course Requirements**

All students must complete a minimum of 90 hours with a cumulative grade point average of 3.5 on a 4.0 scale in their prior program(s). Incoming graduate students who have recently completed their undergraduate studies must have at least a 3.3 grade point average for their last two years of undergraduate studies.

90 hours total, including:

- 16 core credit hours, taken through 4 core courses: A500, A556 or A557, A605 or A606, and A696
- 29 elective hours, including 3 credits in an overseas studies/study abroad class, with graduate content, approved by the DGS; 6 hours in disciplinary methods courses offered outside the department and chosen in consultation with the DGS; and 20 additional hours in related course work
- 6 hours of a foreign language of the African diaspora (or the passing of the language proficiency exam)
- Successful completion of an outside minor
- 24 hours of dissertation research
- Pre-candidacy qualifying examination (The M.A. is automatically granted to students passing the qualifying exam.)
- Dissertation
- Final examination (defense of the dissertation)

### **Tracks**

- Race, Representation, and Knowledge Systems
- Power, Citizenship, and the State

### **Core curriculum**

- A500 Introduction to African American and African Diaspora Studies I
- A556 Race and Culture in the African Diaspora or A557 Race and Politics in the African Diaspora
- A605 Race and the Global City I or A606 Race and the Global City II
- A696 Interdisciplinary Research Methods

### **Qualifying Examination**

Will consist of 3 parts: a field, subfield, and a track specialization exam. The questions for each area of the examination will consist of multiple parts. Six months prior to the qualifying examination, a student should consult his/her advisor/committee about the nature of the examination. Qualifying Examinations will not occur during holiday breaks and summer breaks when faculty is away from campus

### **Research Proposal**

After passing his or her qualifying examinations, the student will submit an approximately 20-page dissertation proposal to her or his dissertation committee, as well as the director of graduate studies. The proposal defines the themes and purpose of the dissertation, discusses the available source material, and relates the topic of the dissertation to the existing literature in the field. It should also be accompanied by a significant bibliography. When the director of the research committee has approved the dissertation proposal, the student will formally present it

in a meeting with the research committee for comment and approval. Once the proposal has been approved, the student will begin to research and then to write the dissertation.

### Final Examination

Public oral defense of dissertation.

### Ph.D. Minor in African American and African Diaspora Studies

The department offers the Ph.D. minor in African American and African Diaspora Studies for students enrolled in any doctoral program at Indiana University. The minor requires 15 credit hours: A500, Introduction to African American and African Diaspora Studies, and 12 credit hours of a concentration in one of the department's two tracks: "Power, Citizenship, and the State" and "Race, Representation, and Knowledge Systems."

### Admission

Doctoral students in good standing are admitted to the African American and African Diaspora Studies minor through interview or correspondence with the graduate advisor. At the time of admission, each student and the graduate advisor together plan an individualized program of study, including the selection of a major concentration area.

### Grades

A cumulative grade point average of 3.4 is required for the Ph.D. minor.

### Examination

A comprehensive examination usually is not required for the Ph.D. minor; however, the decision to waive the examination rests with AAADS and the Director of Graduate Studies.

### Faculty

### Courses

#### General

- **AAAD-A 500 Introduction to African American and African Diaspora Studies (3 cr.)** Through an interdisciplinary approach, students are introduced to the major works concerning the historical, cultural, and intellectual experiences of Africans in the Diaspora, and the research, methodological, and theoretical questions raised about Black experiences in the world.
- **AAAD-A 554 Comparative Ethnic Studies (4 cr.)** This colloquium provides an introduction to Ethnic Studies, focusing on the interdisciplinary study of race and ethnicity in the U.S. and the Americas, past and present. Emphasis will be placed on border crossing, visual representation, literature, nationalism, migration, political transformation, and mass culture.
- **AAAD-A 555 Caribbean, African American and African Leadership, 1957-2000 (3 cr.)** Course will deal with aspects of Caribbean, African-American, and African leadership that influenced the struggles for decolonization and civil rights in the Caribbean, United States, and Africa. The course will also discuss how leaders of the three areas were much more interested in political freedom than economic emancipation.
- **AAAD-A 590 Special Topics in African American and African Diaspora Studies (3 cr.)** Intensive study and analysis of selected Afro-American problems and issues of limited scope, approached within an interdisciplinary format. Topics will vary, but will ordinarily cut across departmental concentration areas.
- **AAAD-A 591 Black Intellectual Traditions (4 cr.)** Surveys the evolution of "racial" ideas and ideologies among African Americans. Participants will discuss how black intellectuals have engaged in dialogue and debate about strategies for coping with injustice, while formulating diverse concepts of justice, salvation, artistry, and positive black identity.
- **AAAD-A 599 Thesis Research (1-6 cr.)** Allows master's students to work on their research with their thesis advisor and committee. The course will provide the opportunity for students to become intimately familiar with both primary and secondary sources in the fields relevant to their particular research topic. Students are expected to perform their own research within the field.
- **AAAD-A 686 Grad Internship Afro-Amer Stds (4 cr.)** Directed readings, work experience, journal, and oral presentation. Most research experiences will require research skills.
- **AAAD-A 690 Core Readings in African American and African Diaspora Studies (4 cr.)** Preparation for the comprehensive master's examination. Colloquium in which students will read and critically examine, both in oral presentations and in written assignments, core texts which reflect the complexity and pluralism of African American and African Diaspora Studies.
- **AAAD-A 696 Interdisciplinary Research Methods (4 cr.)** This course examines seminal texts and critical issues in African American and African Diaspora Studies by utilizing an interdisciplinary approach to understanding the humanities, literature, social sciences, arts, and performance in locales such as the U.S., the Dominican Republic, Guyana, Ghana, France, and Japan.
- **AAAD-A 697 Special Topics in AAADS (4 cr.)** This course conducts an intensive study and analysis of selected historical and contemporary issues relating to the experience of Blacks in the Diaspora. Course strategies emphasize critical methodology and analytical writing.
- **AAAD-A 698 Field Study Seminar (4 cr.)** Development of the final master's project. A critical paper, a thesis-length documentation of a field study, or a substantial record of creative activity is required.
- **AAAD-A 708 Transnational Method: Historiography, Theory, Practice (4 cr.)** This course will examine transnational academic study from a theoretical-methodological perspective by reviewing historiographic roots of transnationalism

and also by reflecting on the theoretical imperatives that emerge in recent scholarship concerning the African Diaspora.

- **AAAD-A 709 Qualitative and Ethnographic Methods in AAADS (4 cr.)** This course provides a survey of qualitative research methods, with an emphasis on using ethnographic and theoretical approaches to establish interdisciplinary perspectives.
- **AAAD-A 799 Study and Research Abroad in African American and African Diaspora Studies (3 cr.)** Introduces students to different peoples, cultures, histories, literary works, political systems and others by having them spend time in Diasporic communities concerning people of African descent.
- **AAAD-A 899 Ph.D. Dissertation Research (1-12 cr.)** Students who are candidates should take this course to work on their dissertation research. These credits are intended to give the student credit for work done on the dissertation.

### Literature

- **AAAD-A 501 Seminar in the Harlem Renaissance (4 cr.)** Study of the major historical figures of the period designated by cultural historians of the Harlem Renaissance (ca. 1919-29), with emphasis on the sociopolitical reasons for the proliferation of art, music, and literature during this significant decade, with examination of the causes and lasting influences on contemporary black culture.
- **AAAD-A 502 Seminar on Wright, Baldwin, and Ellison (4 cr.)** A close critical study of selected works by Richard Wright, James Baldwin, and Ralph Ellison to assess their relationship with Harlem Renaissance, with emphases on contemporary American writing and the black arts movement. The relationship of these men and their works to relevant sociopolitical issues such as McCarthyism, the liberation of African nations, and the civil rights campaigns of the early 1960s will also be examined.
- **AAAD-A 561 Afro-American Autobiography (3 cr.)** A survey of autobiographies written by black Americans in the last two centuries. The course emphasizes how the autobiographers combine the grace of art and the power of argument to urge the creation of genuine freedom in America.
- **AAAD-A 571 Black Literature for Teachers (3 cr.)** A survey of black American literature from the Harlem Renaissance to the present with opportunities for research into teaching materials. This course is designed primarily for teachers. Credit not given for this course toward Ph.D. minor.
- **AAAD-A 579 Early Black American Writing (3 cr.)** Afro-American writing before World War II with emphasis on critical reactions and analyses. Includes slave narrative, autobiography, rhetoric, fiction, and poetry.
- **AAAD-A 580 Contemporary Black American Writing (3 cr.)** The black experience in America as it has been reflected since World War II in the works of outstanding Afro-American writers: fiction, nonfiction, poetry, and drama.

- **AAAD-A 583 Blacks in American Drama and Theatre, 1767-1945 (3 cr.)** Image of blacks as reflected in American drama from 1767 to 1945. Selected dramas of both white and black playwrights, such as Isaac Bickerstaffe, William Wells Brown, Eugene O'Neill, and Richard Wright, who depicted blacks on the stage.
- **AAAD-A 584 Blacks in American Drama and Theatre, 1945-Present (3 cr.)** Image of blacks as reflected in American drama from 1945 to the present. Emphasis on the contributions of black playwrights, such as Lorraine Hansberry, Langston Hughes, Imamu Amiri Baraka (LeRoi Jones), Ted Shine, and Ed Bullins.
- **AAAD-A 585 Seminar in Black Theatre (3 cr.)** Contributions of blacks to the theatre in America. Reading and discussion of selected dramas and critiques with opportunities for involvement in the oral interpretation of one or more of the plays.
- **AAAD-A 678 Early Black American Poetry, 1746-1910 (3 cr.)** A literary and historical survey of general trends and individual accomplishments in early Afro-American poetry, ranging from narrative folk poems, the formalist poetry of Jupiter Hammon and Phillis Wheatley, and the popular poetry of Frances E. W. Harper and Paul Laurence Dunbar to early modern poetry.
- **AAAD-A 679 Contemporary Black Poetry (3 cr.)** An examination of black poetry from Dunbar to the present, emphasizing the emergence, growth, and development of black consciousness as a positive ethnic identification.
- **AAAD-A 680 The Black Novel (3 cr.)** Analysis of the Afro-American novel from the Harlem Renaissance to the present: genesis, development, and current trends. Emphasis on traditions arising out of the black experience and on critical perspectives developed by black critics and scholars.
- **AAAD-A 689 Independent Project in Black Literature (3 cr.)** Designed to meet individual interests of students by providing opportunities for research on a chosen topic and by encouraging nontraditional approaches or settings in the application of concepts developed in formal classes.
- **AAAD-A 692 Pro-Seminar in Writings and Literature in African American and African Diaspora Studies (3 cr.)** Introduces graduate students to interdisciplinary and globalized approaches to Africans in the Diaspora and the Americas, as well as the canons, paradigms, theories, methods, and seminal-thinker biographies of the field.

### Arts

- **AAAD-A 584 Blacks in American Drama and Theatre, 1945-Present (3 cr.)** Image of blacks as reflected in American drama from 1945 to the present. Emphasis on the contributions of black playwrights, such as Lorraine Hansberry, Langston



Hughes, Imamu Amiri Baraka (LeRoi Jones), Ted Shine, and Ed Bullins.

- **AAAD-A 585 Seminar in Black Theatre (3 cr.)** Contributions of blacks to the theatre in America. Reading and discussion of selected dramas and critiques with opportunities for involvement in the oral interpretation of one or more of the plays.
- **AAAD-A 541 Third World Cinemas (3 cr.)** Historically contingent, culturally inflected, and formally innovative, Third World films are a major current in world cinema. This course surveys the cinematic traditions, practices, and thematic concerns of Third World cinemas. Emphasizing the political and cultural significations of cinema, select narrative fiction and documentary films are examined. Subjects under study include filmic approaches to colonialism and postcoloniality, cinematic formations and social processes, and the legitimizing and oppositional practices of film.
- **AAAD-A 542 Postcolonial Metropolitan Cinemas (3 cr.)** Study of selected films from the 1980s to the current period by diasporic "exilic" and European filmmakers, constituting an emerging cinematic formation in contrast to Hollywood and mainstream European cinemas. Emphasizing distinctive styles and cinematic practices, the films under study are framed by the de-territorializing process of globalization and examine shared thematic concerns of transnational migration, the emigre experience, and postcoloniality.
- **AAAD-A 594 Black Music in America (3 cr.)** A chronological overview of the primary genres of African American music, from slavery to present. Emphasis placed on understanding the separate identities of individual genres and examining those processes by which they are interrelated and are cultural objects for appropriation. Credit given for only one of AAAD-A594, FOLK-E694, or FOLK-F694.
- **AAAD-A 597 African American Popular Music (3 cr.)** An examination of African American popular music from 1945-2000. Organized topically, this course will examine the production of this tradition as a black cultural product and its transformation into a mass marketed commodity for mainstream and global consumption. Credit given for only one of AAAD-A687 or FOLK-E697.
- **AAAD-A 694 Pro-Seminar on Performing, Visual, and Material Arts in African American and African Diaspora Studies (3 cr.)** Introduces students to interdisciplinary and globalized approaches to Africans in the Americas and the Diaspora as well as the canons, paradigms, theories, methods, and seminal-thinker biographies of the field.
- **AAAD-A 699 Independent Project in Black Music (3 cr.)** Designed to meet individual interests of students by providing opportunities for in-depth research on a chosen topic and by providing settings

for the creative and practical application of concepts developed in formal class settings.

- **AAAD-A 583 Blacks in American Drama and Theatre, 1767-1945 (3 cr.)** Image of blacks as reflected in American drama from 1767 to 1945. Selected dramas of both white and black playwrights, such as Isaac Bickerstaffe, William Wells Brown, Eugene O'Neill, and Richard Wright, who depicted blacks on the stage.

### History, Culture, and Social Issues

- **AAAD-A 504 Black Paris: Migration and Cosmopolitanism in the City of Light (3 cr.)** Independent field study and supervised research on the topic of Black Paris—the lived artistic, cultural, intellectual, and social experiences of African-derived groups (i.e., African Americans, Africans, and Afro-Caribbeans) in the City of Light—as it pertains to their specific areas of interest. Students are also encouraged to attend A304.
- **AAAD-A 550 Black Atlantic (4 cr.)** An interdisciplinary and comparative study of historical, cultural, and political issues related to Africa and the African Diaspora (the Americas and Europe).
- **AAAD-A 552 History of the Education of Black Americans (3 cr.)** Education of black Americans and its relationship to the Afro-American experience. Trends and patterns in the education of black Americans as they relate to the notions of education for whom and for what.
- **AAAD-A 556 Race and Culture in the African Diaspora (4 cr.)** This course provides an introduction to research on race and culture in the African Diaspora by exploring such issues as nationalism, transportationalism, popular culture, material culture, class, masculinity, feminism, hybridity, representation, performance, commodification, and identity.
- **AAAD-A 557 Race and Politics in the African Diaspora (4 cr.)** This course introduces students to theories, methodologies, and scholarship on the relationship between race and politics in the African Diaspora by examining central themes relating to the state, citizenship, public policy, racial ideologies, and de jure and de facto segregation.
- **AAAD-A 558 The African Diaspora in Latin America and the Caribbean (4 cr.)** This course examines how Brazilians of African descent construct their identities through cultural and political practices by examining similarities and differences between racial identity and race relations in Brazil and the U.S. within the context of social mobilization, cultural affirmation, religious practices, and everyday life.
- **AAAD-A 554 Comparative Ethnic Studies (4 cr.)** This colloquium provides an introduction to Ethnic Studies, focusing on the interdisciplinary study of race and ethnicity in the U.S. and the Americas, past and present. Emphasis will be placed on border crossing, visual representation, literature, nationalism, migration, political transformation, and mass culture.
- **AAAD-A 555 Caribbean, African American and African Leadership, 1957-2000 (3 cr.)** Course will deal with aspects of Caribbean, African-American,

and African leadership that influenced the struggles for decolonization and civil rights in the Caribbean, United States, and Africa.

- **AAAD-A 591 Black Intellectual Traditions (4 cr.)** Surveys the evolution of "racial" ideas and ideologies among African Americans. Participants will discuss how black intellectuals have engaged in dialogue and debate about strategies for coping with injustice, while formulating diverse concepts of justice, salvation, artistry, and positive black identity.
- **AAAD-A 592 Readings in Black Popular Culture (3 cr.)** Interrogates the historical and social deployment of blackness in the popular imagination and its manifestations in racially coded performances. We take a historical stance on black expressive culture and proceed using critical and theoretical texts, aiming at culturally saturated forms, including music, oral "texts," film, and sport.
- **AAAD-A 602 Variations on Blackness: Part I (4 cr.)** Intensive reading program. Students will also develop a research proposal and work to grasp the global comparative complexities of race-making.
- **AAAD-A 603 Variations on Blackness: Part II (4 cr.)** Students will develop a research project based on their proposals from part I of this course.
- **AAAD-A 605 Race and the Global City, Part I (4 cr.)** This course will examine the unique demographic, political, and economic characteristics of major cityscapes and will discuss the various locations from interdisciplinary perspectives using various fields in the humanities, literature, and film.
- **AAAD-A 606 Race and the Global City, Part II (4 cr.)** This course will examine the unique demographic, political, and economic characteristics of major cityscapes and will discuss the various locations from interdisciplinary perspectives using various fields in the humanities, literary and cultural studies, and historical studies. The research begun in A605 will continue in A606, with the students creating a research proposal or a publishable work.
- **AAAD-A 620 Transforming Divided Communities and Societies (3 cr.)** Investigation of divided societies and of strategies for transforming such communities. Students will consider societies (both past and present) divided by race, ethnicity, gender, class, caste, tribe, or religion, and will study responses such as civil rights, affirmative action, reparation policies, and reconciliation tribunals.
- **AAAD-A 669 Independent Project in Black Social Issues (3 cr.)** Designed to meet individual interests of students by providing opportunities for research on a chosen topic and by encouraging nontraditional approaches or settings in the application of concepts developed in formal classes.
- **AAAD-A 691 Pro-Seminar on Cultural and Historical Studies in African American and African Diaspora Studies (3 cr.)** Introduces graduate students to cultural and historical interdisciplinary and globalized approaches to Africans in the Americas and the Diaspora, as well as the canons, paradigms, theories, methods, and seminal-thinker biographies of the field.
- **AAAD-A 693 Pro-Seminar on Social and Behavioral Sciences in African American**

**and African Diaspora Studies (3 cr.)** This pro-seminar introduces graduate students to social and behavioral interdisciplinary and globalized approaches to Africans in the Americas and the Diaspora, as well as the canons, paradigms, theories, methods, and seminal-thinker biographies of the field.

- **AAAD-A 702 Comparative Social Movements in the African Diaspora (4 cr.)** This course focuses on the varied diasporic experience, analyzing how struggles of race, identity, and nation in specific time periods, locales, and cultural contexts in the U.S., Latin America, Europe, and Africa have contributed to the development of social and political movements in the Diaspora.
- **AAAD-A 703 Black Feminisms (4 cr.)** This course examines the interlocking experience of black women in the Diaspora and the foundational issues that have shaped their sense of womanism and African feminism. Using classical literary and biographical texts and narrative writings of black women, the analysis emphasizes contemporary issues by also interrogating popular culture media through film and music to criticize the rhetoric of sisterhood.
- **AAAD-A 704 African Americans and Continental Africans: Ties that Bind (4 cr.)** In old and modern times alike, continental Blacks (or Africans) and Diaspora Blacks have been considered kith and kin. This course, with its wide range of readings and research sources, is designed to help graduate students understand the nuances of these historical-political connections.
- **AAAD-A 710 Rural Blacks in the African Diaspora (4 cr.)** This course examines the experiences of Blacks in rural areas throughout the African Diaspora to investigate how long-term systemic political, social, and economic struggles have impacted the development of rural African peoples and their communities in such places as the southern U.S., South Africa, Guyana, and Ireland.
- **AAAD-A 711 Blackface and Blackness in Global Context (4 cr.)** This course explores blackface and other performances and appropriations of blackness in the African Diaspora, emphasizing the ways in which ideas of minstrelsy have continued by white and black performers as seen through media, culture racial identity formations, and racialized agency through entertainment.
- **AAAD-A 720 Comparative Study of Black Women in the Rural African Diaspora (4 cr.)** This course examines the social and economic struggles of rural Black women in the African Diaspora by focusing on family, life, work rules, health, leadership, and agency through self-constructed identity and ideas of womanism.

### Cross-Listed Courses

#### Anthropology

- E450 Folk Religions (3 cr.)
- E455 Anthropology of Religion (3 cr.)
- E457 Ethnic Identity (3 cr.)
- E650 African Systems of Thought (1-3 cr.)

#### Criminal Justice

- P680 Seminar: Issues in Criminal Justice (3 cr.)

### English

- L655 American Literature and Culture 1900-1945 (4 cr.)

### Folklore

- F609 African and Afro-American Folklore/Folk Music (3 cr.)
- F625 North American Folklore/Folk Music (3 cr.)

### History

- E531 African History from Ancient Times to Empires and City States (3 cr.)
- E532 African History from Colonial Rule to Independence (3 cr.)
- E534 History of Western Africa (3 cr.)

### Music

- M582 The Bebop Era (3 cr.)
- M583 Duke Ellington (3 cr.)
- M584 Research in the History and Analysis of Jazz (3 cr.)
- M596 Art Music of Black Composers (3 cr.)

### Political Science

- Y657 Comparative Politics (3 cr.)

### Sociology

- S610 Urban Sociology (3 cr.)
- S631 Intergroup Relations (3 cr.)

## African Studies

**Hamilton Lugar School of Global and International Studies**

**College of Arts and Sciences**

**Departmental E-mail:** [afirst@iu.edu](mailto:afirst@iu.edu)

**Departmental URL:** <https://africanstudies.indiana.edu/>

### Curriculum

Curriculum

Courses

Crosslisted Courses

Faculty

African Studies at Indiana University focuses on the African continent and its integration into global networks, past, present, and future. The Program has faculty affiliates in a wide range of disciplines and professional fields with research experience in different parts of the continent and its diasporas. They offer courses in their areas of expertise and provide individualized mentoring. Graduate students interested in Africa have the option of pursuing a free-standing master's degree; a dual or joint master's degree with select professional schools; or a Minor in connection with a disciplinary Ph.D.

The African Studies Program is part of the Hamilton Lugar School of Global and International Studies in the College of Arts and Sciences, dedicated to providing Indiana University graduate students with the intellectual tools they will need to live, work, and thrive in the globalized world of the twenty-first century. Degree programs

associated with HLS emphasize language proficiency, cultural competency, and in-depth training in qualitative and quantitative methodologies. HLS students enjoy access to a stellar faculty and unparalleled professional development opportunities. For further information regarding the mission, structure and resources of the Hamilton Lugar School of Global and International Studies, see <http://hls.indiana.edu/>.

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### M.A. in African Studies (30 credit hours)

The African Studies master's degree program is intended for students who wish to: (1) obtain a graduate degree in African Studies in order to pursue careers in government, international relations (e.g., the Diplomatic Corps), international development, international business, or a professional field; (2) continue graduate work in a discipline; or (3) combine a M.A. degree in African Studies with another master's degree in the arts, social and other sciences, or in one of the professional schools. The program normally takes two years to complete. It gives students the flexibility to tailor course work to their needs and interests while requiring them to develop competence on a particular topic or region as well as in research methods and at least intermediate proficiency in an African language.

### Admissions Requirements

Bachelor's degree from an accredited institution of higher education with evidence of superior ability; completion of the graduate record exam; a statement of interest; and a writing sample.

### Course Requirements

Thirty credit hours of course work distributed as follows:

- AFRI-A731 African Studies Interdisciplinary Graduate Seminar (3 cr.)
- AFRI-A650 Interdisciplinary Research Methods (3 cr.)
- AFRI-A651 Independent Research / Directed Readings (up to 6 cr.); and elective courses organized around a topical or regional concentration to complete a total of 30 credits.

Elective courses are to be selected from the range of cross-listed African Studies offerings in the College of Arts and Sciences and several professional schools, with the approval of the student's major advisor. Electives may include three additional credits of AFRI-A731 since the topic for the African Studies Interdisciplinary Graduate Seminar changes every year and is offered by different faculty members on a rotating basis.

### Language Requirement

At least four semesters of an African language. The credits accrued for the four semesters of language study are not counted toward the total credits required for the degree. Students may have the language requirement waived by demonstrating equivalent competence through an examination completed under supervision of the African Languages Coordinator. Up to three credits for the

study of an African language beyond the second year level may count toward the electives.

### **M.A. Committee and Thesis or Project**

Students are required to constitute a committee composed of a disciplinary advisor and two additional members with relevant regional or topical expertise, approved by the director of the African Studies Program. The committee chair and at least one additional committee member must be selected from the African Studies affiliate faculty with professional experience on the African continent. The purpose of the committee is to provide consultation to the student and to read and comment on the Master's thesis or Project. There is no M.A. examination option.

#### *Thesis*

The thesis option is strongly recommended for students intending to pursue a Ph.D. following completion of the Master's degree. The thesis should be an in-depth treatment of the chosen topic, interdisciplinary in nature and at least 8,000 to 10,000 words of substantive narrative text (not counting footnotes/endnotes, bibliography, or tabular material). It may be an expanded seminar paper, or an entirely new project based on library, archival, field, or museum research, and should make use of relevant sources in a language other than English. All three committee members must approve the thesis but may agree to waive an oral defense.

#### *Project*

The project option is designed for students wishing to pursue a non-academic career in a variety of fields. A "project" may be: an internship related to African issues in an organization, government agency, museum, or other institution in Africa or elsewhere (including the United States); or a media project (thematic video or other media production).

The plan for the project must be approved by three committee members. The plan should include: a brief description of the internship or media project; and a brief definition of the internship portfolio or media project's analytical essay that will be submitted for evaluation by the MA committee. After endorsement by all committee members, the plan must be approved by the African Studies director before the student begins the project.

An internship (in Africa or elsewhere) should be at least six weeks in duration and culminate in a portfolio, including an abstract, an analytical essay of at least 30 double-spaced pages, and an addendum of at least 30 pages. The analytical essay should include: a description of the internship; a discussion of internship activities; and a rigorous analysis of the internship experience based on engagement with cross-disciplinary insights gained through relevant courses taken for the MA degree. The addendum might include: a journal, reports written during the internship, and other relevant items.

A media project must be accompanied by an analytical essay of at least 30 double-spaced pages. The analytical essay should include: a description of the media project; a discussion of the process of producing the media project; and a rigorous analysis of the media project based on engagement with cross-disciplinary insights gained through relevant courses taken for the MA degree. An addendum might include materials related to the project,

such as a script, storyboards, and other relevant materials related to the thematic video or other media production.

No formal defense is required, but an MA review must occur after the student submits the internship portfolio or media project's analytical essay to the MA committee. Once the committee evaluates and approves the internship portfolio or media project's analytical essay, students are encouraged to make a presentation to the African Studies Program community in a venue such as the Friday colloquium, the annual Graduate Students in African Studies conference, or another program-supported public event.

### **Dual M.A./M.L.S. in African Studies and Library Science**

The College of Arts and Sciences African Studies Program and the Department of Information and Library Science jointly offer a three-year program that qualifies students for a dual master's degree (M.A./M.L.S.). The program responds to the growing need for librarians with Africa-specific knowledge and research experience in the humanities and social sciences. The dual M.A./M.L.S. program requires completion of a minimum of 56 credit hours of graduate coursework and the two degrees must be awarded simultaneously. Students will be assigned a mentor/advisor from each unit. The student's African Studies M.A. thesis/project committee should include a representative of the Information and Library Science faculty or other means of including perspectives of both programs.

### **Admission Requirements**

Same as for the College of Arts and Sciences Master of Arts in African Studies degree, except that students must also apply to the master's program of the Department of Information and Library Science and meet its established admissions criteria. Students must be accepted by both units in order to be admitted to the program.

### **African Studies Core Requirements**

A minimum twenty-six hours of coursework distributed as follows:

- AFRI-A731 African Studies Interdisciplinary Graduate Seminar (3 cr.)
- AFRI-A650 Interdisciplinary Research Methods (3 cr.)
- AFRI-A651 Independent Research/Directed Readings (3-6 cr.) toward the M.A. thesis/project
- Elective courses organized around a topical or regional concentration to complete a minimum of twenty-six hours

Elective courses are to be selected from the range of cross-listed African Studies offerings in the College of Arts and Sciences and several professional schools, with the approval of the student's major advisor. Electives may include three additional credits of AFRI-A731, since the topic for the African Studies Interdisciplinary Graduate Seminar changes every year and is offered by different faculty members on a rotating basis.

### **Information and Library Science Course Requirements**

Thirty credit hours of coursework consisting of:



1. 18 credits of M.L.S. foundation courses, with Z552 Academic Library Management to fulfill the management and leadership skills requirement; must also complete the digital literacy requirement;
2. 3 credits of either Z521 Information in the Humanities or Z522 Social Science Information; and
3. 9 credits of elective courses chosen from information and library science courses. An internship related to African Studies is strongly advised.

### Language Requirement

Same as for the M.A. in African Studies.

See also:

<https://www.soic.indiana.edu/graduate/degrees/information-library-science/dual-degrees/african-studies-mls.html>

### Dual M.A./M.P.H. in African Studies and Public Health

The College of Arts and Sciences' African Studies Program and the School of Public Health (SPH) jointly offer a three-year program that qualifies students for a dual master's degree (M.A./M.P.H.). The program is a response to the growing need for public health personnel with Africa-specific knowledge and research experience in the humanities and social sciences. The dual M.A./M.P.H. program requires completion of a minimum of 60 credit hours of graduate course work and the two degrees must be awarded simultaneously. Students will be assigned a mentor or an advisor from each unit. The student's thesis committee must include a representative from each academic unit who will serve as Co-Chairs of the thesis project.

### Admissions Requirements

Same as for the College of Arts and Sciences Master of Arts in African Studies degree except that students must also apply to the master's program of the School of Public Health (SPH) and meet its established M.P.H. admissions criteria. Students must be accepted for admission to both units in order to be admitted to the program.

### Other Stipulations

Students must pass all routine requirements of the MPH program including satisfactory performance on the C650 Culminating Experience in addition to the completion of the master's thesis.

### Degree Requirements (60 Credits minimum)

#### Public Health Core Courses (15 Credits)

- SPH-B 589 Social and Behavioral Determinants of Health (3 cr.)
- SPH-E 651 Epidemiology (3 cr.)
- SPH-P 510 Organization and Administration of Public Health Programs (3 cr.)
- SPH-Q 501 Introduction to Statistics in Public Health (3 cr.)
- SPH-V 541 Environmental Health (3 cr.)

#### Public Health Required Courses (7 Credits)

- SPH-B 696 Field Experience in Public Health (4 cr.)
- SPH-B 698 MPH Culminating Experience (3 cr.)

### Concentration Coursework (12 Credits)

- SPH-B 501 Assessment & Planning in Public Health (3 cr.)
- SPH-B 529 Health and Disease Disparities in Diverse Communities (3 cr.)
- SPH-B 602 Intervention Design in Public Health (3 cr.)
- SPH-H 562 Health Program Evaluation (3 cr.)

### African Studies Core Courses (9-15 Credits)\*

- AFRI-A 731 African Studies Interdisciplinary Graduate Seminar (3-6 cr.)
- AFRI-A 650 Interdisciplinary Research Methods (3 cr.)
- AFRI-A 651 Independent Research/Directed Readings (3-6 cr.)

### Electives to complete a minimum total of 26 credits in African Studies chosen from 100% Africa content courses or from cross-listed courses

African Studies elective courses may be selected from the range of cross-listed African Studies offerings in the College of Arts and Sciences and several professional schools, with the approval of the student's major advisor. AFRI A-731 may be taken for up to six credits because the topic for the African Studies Interdisciplinary Graduate Seminar changes every year and is offered by different faculty members on a rotating basis. A student may take it for fewer than three credits after having taken it once for three credits. SPH courses may include any elective within the School of Public Health that complements an area of topical or methodological focus and has a minimum of 25% Africa content.

### Language Requirement

Same as for the M.A. in African Studies

### Dual M.A./M.P.A. in African Studies and Public Affairs

Academic programs in African Studies continue to grow, with a corresponding need for scholars in Public Affairs who have knowledge and research experience in the humanities, social sciences, policy, and management aspects of this field. The dual M.A./M.P.A. program requires completion of a minimum of 62 credit hours of graduate course work. Students must apply for admission to the master's programs of both the O'Neill School of Public and Environmental Affairs (Public Affairs) and the College of Arts and Sciences (African Studies Program), and meet the admissions criteria established for each. Students will be assigned a mentor from each unit until they form a M.A.-M.P.A. thesis or project committee which should be co-directed by a faculty member from each unit. The two degrees must be awarded simultaneously.

### Admissions Requirements

Same as for the College of Arts and Sciences Master of Arts in African Studies degree, except that students must also apply to the master's program of the School of Public and Environmental Affairs and meet its established admissions criteria. Students must be accepted by both units in order to be admitted to the program. The deadline for receipt of application materials for the African Studies component is January 15. Please contact the O'Neill School of Public and Environmental Affairs for deadlines and information on the SPEA master's program requirements and deadlines.

### African Studies Course Requirements (26 credit hour minimum)

1. Required Courses (9-12 credits)
  - A731 African Studies Interdisciplinary Graduate Seminar (3 cr.)
  - A650 Interdisciplinary Research Methods (3 cr.)
  - A651 Independent Research / Directed Readings (3-6 cr.)
1. Electives to complete a total of 26 Africa-related credits
  - Students should take elective courses organized around a topical or regional concentration. These courses are to be selected from the range of cross-listed African Studies offerings in the College of Arts and Sciences and several professional schools, with the approval of the student's major advisor. Electives may include up to three additional credits of A731 because the topic for the African Studies Interdisciplinary Graduate Seminar changes every semester and is offered by different faculty members on a rotating basis.
1. Language Requirement
  - Same as for the M.A. in African Studies

### SPEA Course Requirements

The core requirements for the M.P.A. and a specialized SPEA concentration (36 credit hours) to include:

1. M.P.A Foundation courses (18 credits):
  - SPEA-V 502 Public Management (3 cr.)
  - SPEA-V 506 Statistical Analysis for Effective Decision Making (3 cr.)
  - SPEA-V 517 Public Management Economics (3 cr.)
  - SPEA-V 540 Law and Public Affairs (3 cr.)
  - SPEA-F 560 Public Finance and Budgeting (3 cr.)
  - SPEA-V 600 Capstone in Public and Environmental Affairs (3 cr.)
1. Specialized Area
  - Students may design and develop a program of specialization courses in consultation with SPEA faculty advisors (18 credits).

### Ph.D. Minor in African Studies

The African Studies Program offers the Ph.D. Minor to students in a range of fields including: anthropology, archaeology, art history, comparative literature, economics, English, education, ethnomusicology, folklore, French, geography, history, instructional systems technology, journalism, law, linguistics, political science, public and environmental affairs, public health, sociology, and Spanish and Portuguese.

Students selecting African Studies as a minor are encouraged to visit the Program office (Global and International Studies Building, GA 3072) as soon as possible after arriving on campus to discuss their interests. The Program director and staff will provide information about courses, faculty, and ways to connect with other African Studies students.

### Course Requirements

Students minoring in African Studies must complete AFRI-A650, Interdisciplinary Methods in African Studies, and three other graduate-level courses in African studies. The courses should be in at least two different disciplines; must be taught by an African Studies Program affiliated faculty member; and must be approved by the Program director.

The African Studies Interdisciplinary Seminar AFRI-A731 may be taken twice for a total of six credits but variable credit is only allowed in addition to having taken it once as a three-credit seminar.

One language course in the third year of study, or higher, may be counted toward the Minor.

The Program requires that Ph.D. candidates who minor in African Studies take two years of a language spoken on the African continent (except English) with a strong preference for an African language in addition to their course work for the minor. Serious scholars of Africa are proficient in at least one African language. Moreover, language proficiency improves opportunities for fieldwork and funding; in fact it is a requirement for important overseas research grants (e.g., SSRC and Fulbright-Hays awards).

Students preparing a minor in African Studies and a minor in another field may double-count only one course.

Students with special qualifications or previous course work at leading institutions may petition the Graduate Affairs Committee to give credit for work that is comparable to specific courses at Indiana University. Petitions must include a formal letter of request from the candidate, as well as a syllabus from the course in question. The materials should be submitted to the Chair of the Graduate Affairs Committee or the Director of the African Studies Program. The requirements stated above constitute a minimum level of expectation.

### Examination

Although a 3.7 grade point average in African studies courses would normally exempt the student from having to take a written comprehensive examination, the decision in this matter rests with the student's major-field advisor and the faculty member representing African Studies as the minor-field advisor. Certifying that the student has met the minimum requirements rests with a faculty member in the African Studies Program who is not in the student's major department.

### Faculty

#### Director and Graduate Advisor

Tavy Aherne, Ph.D. (Interim Director)

#### Graduate Faculty

(An asterisk [\*] next to a person's name denotes membership in the University Graduate School with an endorsement to direct doctoral dissertations.)

#### Associate Director and Undergraduate Advisor

Tavy Aherne

### Professors

Osita Afoaku (Clinical Professor, Public and Environmental Affairs), Salman Al-Ani (Near Eastern Languages and Cultures), Robert Botne\* (Linguistics), Kevin Brown\* (Law), Stuart Davis\* (Linguistics), Ann Elsner\* (Optometry), Marion Frank-Wilson (Library), Maria E. Grabe\* (Media School), Vivian Halloran\* (American Studies), John H. Hanson\* (History), Kevin Hunt\* (Anthropology), Jayanth K. Krishnan,\* (Law), Patricia Kubow\* (Education), Alex Lichtenstein\* (History), David Lohrmann\* (Applied Health Science), Don Lyon\* (Optometry), Lauren M. MacLean\* (Political Science), Beth Meyerson (School of Public Health), Marissa Moorman\* (History), Samuel Gyasi Obeng\* (Linguistics), Christiana Ochoa\* (Law), Alwiya Omar (Clinical Professor, African Studies), Solimar Otero (Folklore and Ethnomusicology), Oana Panaite\* (French and Italian), Jamie Prenkert (Business), Michael Reece\* (Applied Health Science), Kathy Schick\* (Anthropology), Antonia Schleicher (African Studies), Rex Stockton\* (Education), Mohammad Torabi\* (Applied Health Science), Nicholas Toth\* (Anthropology), Stephen Vinson\* (Near Eastern Languages and Cultures), David Williams\* (Law), Susan Williams\* (Law)

### Associate Professors

Akinwumi Adesokan\* (Comparative Literature and Media School), Heather Akou (Apparel Merchandising), Vincent Bouchard\* (French and Italian), Jennifer Brass\* (Public and Environmental Affairs), Beth Buggenhagen\* (Anthropology), Barbara Dennis\* (Education), Sameeksha Desai\* (Director, Institute for Development Strategies), Elizabeth Dunn (Geography), Sergio Fernandez\* (Public and Environmental Affairs), Gregory Fisher (Business), Laura Foster (Gender Studies), Jane Goodman\* (Anthropology), Margaret Graves\* (Art History), James Kelly\* (Journalism), Pedro Machado\* (History), Bárbero Martínez-Ruiz\* (Art History), Murray McGibbon (Theatre, Drama, and Contemporary Dance), Beth E. Meyerson\* (Applied Health Science), Nader Morkus\* (Near Eastern Languages and Cultures), Michelle Moyd\* (History), Luciana Namorato\* (Spanish and Portuguese), Jackson Njau\* (Geology), Martha Nyikos\* (Education), Cecilia Obeng\* (Applied Health Science), Todd Peabody (Clinical Associate Professor, Optometry), Phillip Powell (Clinical Associate Professor, Kelley School of Business), Daniel Reed\* (Folklore and Ethnomusicology), Beth Samuelson\* (Education), Whitney Schlegel (Biology), Margaret Sutton\* (Education), Estela Vieira\* (Spanish and Portuguese), Sarah Young\* (School of Public Health)

### Assistant Professors

Greg Fisher (Kelly School of Business), Oghenekaro Omodior (School of Public Health), Sarah Osterhoudt\* (Anthropology), Clémence Pinaud (International Studies), Jessica Steinberg (International Studies), Esi Eduwaa Thompson (The Media School), Michael Wasserman (Anthropology).

### Emeriti

Erna Alant\* (Emeritus, Education), Robert Arnove\* (Emeritus, Chancellor's Professor, Education), Akwasi B. Assensoh\* (Emeritus, African American and African Diaspora Studies), Salih Altoma\* (Emeritus, Near Eastern Languages and Cultures), Randall Baker\*

(Emeritus, Public and Environmental Affairs), Mellonee Burnim\* (Emerita, Folklore and Ethnomusicology), George E. Brooks Jr.\* (Emeritus, History), Trevor Brown\* (Emeritus, Journalism), Bonnie Brownlee\* (Emerita, Journalism), Gracia Clark\* (Emerita, Anthropology), Hasan El-Shamy\* (Emeritus, Folklore), Paula Girshick\* (Emerita, Anthropology), Mary Goetze\* (Emerita, Music), John W. Johnson\* (Emeritus, Folklore), Eileen Julien\* (Comparative Literature, French and Italian), Michael Martin (The Media School), Phyllis Martin\* (Emerita, Ruth N. Halls Professor, History), Heitor Martins\* (Emeritus, Spanish and Portuguese), Portia Maultsby\* (Emerita, Folklore and Ethnomusicology), Audrey McCluskey (Emerita, African American and African Diaspora Studies), Patrick McNaughton\* (Emeritus, Chancellor's Professor, Art History), Susan Middlestadt (School of Public Health), Emilio Moran\* (Emeritus, Anthropology), Patrick Munson\* (Emeritus, Anthropology), Paul Newman\* (Emeritus, Linguistics), Christine Ogan\* (Emerita, Journalism), Patrick O'Meara\* (Emeritus, Political Science, Public and Environmental Affairs), Diane Pelrine\* (Emerita, Art History), Robert F. Port\* (Emeritus, Computer Science, Linguistics), Iris Rosa\* (Emerita, African American and African Diaspora Studies), Darlene Sadlier\* (Emerita, Spanish and Portuguese), Jeanne Sept\* (Emerita, Anthropology), John Stanfield II (Emeritus, African American and African Diaspora Studies), Beverly Stoeltje\* (Emerita, Anthropology, Communication and Culture), Ruth Stone\* (Emerita, Folklore and Ethnomusicology), Richard Stryker\* (Emeritus, Political Science), Richard Wilk\* (Emeritus, Anthropology),

### Academic Advising

HLS 3082, (812) 855-5082

### Courses

- AFRI-A 500 Advanced Topics in African Studies (1-4 cr.) Advanced and intensive study of selected topics in African Studies. To include topics not ordinarily covered by existing African Studies Program courses. May not duplicate a regularly offered course. May be repeated for up to 6 credit hours.
- AFRI-A 650 Interdisciplinary Research Methods (3 cr.) Prepares students to conduct scholarly research and social-impact analysis in Africa as well as design and implement projects focused on contemporary issues in areas ranging from development and the environment to health and politics. Identifying and analyzing sources; becoming conversant with new modes of scholarly communication; and designing research with diverse modes of publication in mind, are an integral part of the course. Students also acquire the background for assessing the results of already completed studies.
- AFRI-A 651 Independent Research / Directed Readings (1-3 cr.) Individually designed course in preparation for and writing of M.A. thesis. Must be directed by an African Studies faculty affiliate and approved by the student's disciplinary advisor and the African Studies Program director. May include fieldwork in Africa and/or research in museums,

archives, and libraries. May be repeated for up to 6 credit hours.

- AFRI-A 731 Seminar on contemporary Africa (1-3 cr.) Offered by African Studies faculty across the disciplines on variable topics.
- AFRI-X773 Internship in African Studies (1-6 cr.)

### Courses in African Languages

- AFRI-B 501-502 Elementary Bamana I-II (3-3 cr.)
- AFRI-B 601-602 Intermediate Bamana I-II (3-3 cr.)
- AFRI-B 701-702 Advanced Bamana I-II (3-3 cr.)
- AFRI-K 501-502 Elementary Akan I-II (3-3 cr.)
- AFRI-K 601-602 Intermediate Akan I-II (3-3 cr.)
- AFRI-K 701-702 Advanced Akan I-II (3-3 cr.)
- AFRI-L506 Tutorial Instruction in an African Language (1-3 cr.)
- AFRI-R 501-502 Elementary Kinyarwanda I-II (3-3cr.)
- AFRI-R 601-602 Intermediate Kinyarwanda I-II (3-3 cr.)
- AFRI-S 501-502 Elementary Swahili I-II (3-3 cr.)
- AFRI-S 601-602 Intermediate Swahili I-II (3-3 cr.)
- AFRI-S 701-702 Advanced Swahili I-II (3-3 cr.)
- AFRI-Y 501-502 Elementary Yoruba (3-3 cr.)
- AFRI-Y 601-602 Intermediate Yoruba (3-3 cr.)
- AFRI-Y 701-702 Advanced Yoruba (3-3 cr.)
- AFRI-Z 501-502 Elementary Zulu I-II (3-3 cr.)
- AFRI-Z 601-602 Intermediate Zulu I-II (3-3 cr.)
- AFRI-Z 701-702 Advanced Zulu I-II (3-3 cr.)

### Cross-Listed Courses

#### African American and African Diaspora Studies

- A500 Introduction to African & African-American Diaspora (3 cr.)

#### Anthropology

- B568 The Evolution of Primate Social Behavior (3 cr.)
- B600 Seminar in Bioanthropology (3 cr.) [Africa-related topics]
- C650 Ethnography and Social Theory [with Africa content]
- E510 Problems in African Ethnography and Ethnology (3 cr.)
- E523 Life Histories (3 cr.) [with Africa content]
- E600 Seminar in Cultural and Social Anthropology [African topics] (3 cr.)
- E617 African Women (3 cr.)
- E620 Seminar in Cultural Ecology (3 cr.) [with Africa content]
- E644 People and Protected Areas (3 cr.) [with Africa content]
- E650 African Systems of Thought (1-3 cr.)
- E660 Arts in Anthropology (3 cr.) [with Africa content]
- E677 Performing Nationalism (3 cr.) [with Africa content]
- E690 Development and Anthropology (3 cr.)
- P600 Seminar in Prehistoric Archaeology (3 cr.)

#### Art History

- A552 Art of Eastern and Southern Africa (3 cr.)
- A555 Art/Craft/Tec in sub-Saharan Africa (3 cr.)
- A556 Art of Central Africa (3 cr.)
- A580 Art of Sub-Saharan Africa I: Arts of Africa's Western Sudan (3 cr.)
- A650 Problems in African Art (3 cr.)

### Comparative Literature

- C537-8 The Twentieth Century I-II (4 cr.) [with Africa Content]
- C572 Modern African Letters (4 cr.)
- C603 Topics in Comparative Literature (4 cr.) [African topics]
- C611 Topics in Literary Genres, Modes, and Forms (4 cr.) [African topics]
- C670 Topics in Cross-Cultural Studies [with Africa content] (4 cr.)

### Economics

- E592 Economic Development of Less-Developed Countries (3 cr.)

### Education

- H520 Education and Social Issues (3 cr.) [with Africa content]
- H551-H552 Comparative Education I-II (3-3 cr.)
- H560 Education and Change in Societies (3 cr.) [with Africa content]
- H620 Seminar in Educational Policy Studies (3 cr.) [with Africa content]
- H637 Topical Seminar (3 cr.) [with Africa content]
- K780 Seminar in Special Education (1-4 cr.)
- L601 Theoretical Issues: Study of Language and Literacies (3 cr.)
- R640 Planning Educational Media Systems: National and International (3 cr.)
- Z601 Theoretical Issues: Study of Language and Literature [with Africa content]

### Folklore and Ethnomusicology

- E529 Musical Cultures as Systems of Meaning (3 cr.) [with Africa content]
- E698 African American Religious Music (3 cr.)
- F501 Folklore Colloquium (3 cr.) [with Africa content]
- F516 Proseminar in Folklore Theory and Method I: Materials of Folklore (3 cr.) [with Africa content]
- F523 Field Work in Folklore/Ethnomusicology (3 cr.)
- F528 Advanced Fieldwork (3 cr.) [with Africa content]
- F609 African and Afro-American Folklore/Folk Music (3 cr.)
- F617 Mid-Eastern Folklore, Life and Music (3 cr) [Topics ex. Islam Among the Folk]
- F722 Music, (Im)migration and Diaspora (3 cr.)
- F738 Topics: Mid-Eastern and Arab Mythology (3 cr.) [with Africa content]
- F740 History of Ideas in Folklore/Ethnomusicology (3 cr.) [with Africa content]
- F750 Performance Studies (3 cr.) [with Africa content]
- F755 Folklore, Culture, and Society (3 cr.) [with Africa content]



**French**

- F667 Studies in Francophone Literature (3 cr.)

**Geography**

- G 501 Research Problems in Geography II (3 cr.) [with Africa content]
- G604 Topical Seminar in Food and Agriculture (3 cr.) [with Africa content]

**Geological Sciences**

- G561 Paleocology (3 cr.) [with Africa content]

**History**

- E531 African History from Ancient Times to Empires and City States (3 cr.)
- E532 African History from Colonial Rule to Independence (3 cr.)
- E533 Conflict in Southern Africa (3 cr.)
- E534 History of Western Africa (3 cr.)
- E536 History of East Africa (3 cr.)
- E538 History of Muslim West Africa (3 cr.)
- H665 Afro-Latin America (3 cr.)
- H695 Colloquium in African History (4 cr.)
- H699 Colloquium in Comparative History (4 cr.) [with Africa content]
- H795 Seminar in African History (4 cr.)

**The Media School**

- J514 International Communication (3 cr.) [with Africa content]
- J518 Field Experience in Journalism [Uganda] (4 cr.)
- J614 Globalization, Media, and Social Change (3 cr.) [with Africa content]

**Linguistics**

- A501 Introduction to African Linguistics (3 cr.)
- A502 Language in Africa (3 cr.)
- A503 Bantu Linguistics (3 cr.)
- A504 Chadic Linguistics (3 cr.)
- A747 Seminar in African Linguistics (4 cr.)
- L619 Language and Society (3 cr.)
- L625 Bilingualism and Language Contact (3 cr.)
- L636 Pidgins and Creoles (3 cr.)
- L653-L654 Field Methods in Linguistics I-II (3-3 cr.)
- L720 Seminar in Sociolinguistics (3 cr.)

**Near Eastern Languages and Cultures**

- E500-550 Elementary Hieroglyphic Egyptian I-II (3-3 cr.)
- E501-2 Elementary Middle Egyptian I-II (3-3 cr.)
- E505 Ancient Egyptian History and Civilization (3 cr.)
- E510 Religions of Ancient Egypt (3 cr.)
- E590 Directed Readings in Egyptology
- E600 Intermediate Middle Egyptian (3 cr.)
- E650 Late Egyptian Grammar and Texts
- E660-670 Demotic Egyptian I-II (3-3 cr.)
- E695 Graduate Topics in Egyptology (1-3 cr.)
- N695 Religions of Ancient Egypt (3 cr.)
- A500-A550 Elementary Arabic I-II (3-3 cr.)
- A600-A650 Intermediate Arabic I-II (3-3 cr.)

- A660-A670 Advanced Arabic I-II (3-3 cr.)

**Political Science**

- Y657 Comparative Politics [African Politics] (3 cr.)
- Y673 Empirical Theory and Methodology (3 cr.) [with Africa content] (3 cr.)

**Public and Environmental Affairs**

- N524 Civil Society in Comparative Perspective (3 cr.)
- N534 NGO management in Comparative Perspective (3 cr.)
- V550 Topics in Public Affairs (3 cr.) [Africa-related topics]

**Public Health**

- E655 Infectious Disease Epidemiology (3 cr.)
- H504 Breastfeeding: Practice and Policy (3 cr.)
- H510 Organization of School Health Programs (3 cr.)
- H514 Health Education in Pre-K - Grade 6 (3 cr.)
- H650 Seminar in Health Education (various topics) (1-3 cr.)

**Spanish and Portuguese**

- P500-501 Literatures of the Portuguese-Speaking World I-II (3 cr.)
- P515 Women Writing in Portuguese (3 cr.)
- P520 Literatures of the Portuguese-Speaking World in Translation (3 cr.)
- P710 Seminar: African Literature in Portuguese (3 cr.)

**American Studies****College of Arts and Sciences**

**Departmental E-mail:** amst@indiana.edu

**Departmental URL:** <https://americanstudies.indiana.edu/>

**Curriculum**

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

**Program Information**

For additional graduate student information, contact Ballantine Hall 543, phone (812) 855-7718, fax (812) 855-0001.

**Degrees Offered**

The Department of American Studies provides an opportunity to pursue the interdisciplinary study of American society and culture. Students in the Ph.D. program acquire specialized training in one particular discipline as well as firm grounding in interdisciplinary study. They are encouraged to shape portions of their graduate studies to fit individual needs and interests. Courses in the program are also open to graduate students pursuing a master's degree in another department, special nondegree graduate students, and international students.

## Doctor of Philosophy in American Studies Special Program Requirements

See also general University Graduate School requirements.

### Doctor of Philosophy Degree Admission Requirements

Admission is by approval of the program's Graduate Affairs Committee (GAC). Applicants must have a bachelor's degree, a cumulative GPA of 3.2, and a major GPA of 3.5 and above. An MA degree is optional. We ask that students submit three letters of recommendation from faculty members familiar with their academic work, a writing sample, and a brief personal statement. Furthermore, though we are especially interested in students who have a demonstrated interest in American Studies, we welcome applications from students with degrees in all fields.

### Course Requirements:

At least 90 credit hours are required for the doctorate. Within these, students must complete AMST G603, Introduction to American Studies (4 cr.), AMST G604, Perspectives in American Studies (4 cr.), one section of AMST G620, Colloquium in American Studies (3-4 cr.), and at least four courses at the 700 level or higher, including at least 3 credits of G751, which may include cross-listed courses and relevant electives offered through American Studies. PhD. students must complete at least 32 credits in American Studies coursework at Indiana University, which may include cross-listed courses. With the consent of their advisory committee, students can count one class taken outside AMST towards these requirements, though it must be taught by an AMST faculty or affiliate faculty member. No substitutions are allowed for G603 and G604.

### Advisory Committee:

The Director of Graduate Studies (DGS) is the initial advisor to each cohort of students. By the end of their second year (for students who completed a BA or BS prior to admission to the program) and their first year (for students who completed an MA or MS prior to admission to the program), students will select an advisor from among the core faculty to serve as chair of a four-person Advisory Committee, consisting of the chair, a representative from the doctoral minor, and two other members, one of whom may be an affiliate faculty. The Advisory Committee will supervise the student through the PhD qualifying exam, and will maintain responsibility to the student until the Research Committee is nominated after the student is nominated to candidacy.

### Thematic Plan of Study:

In year one, each student will complete a thematic plan of study around a chosen focus and submit it to the DGS in mid-October (in preparation for spring semester course enrollment) and mid-March (in preparation for fall semester course enrollment). In year two, students who completed a BA or BS prior to admission to the program will do this again; students who completed an MA or MS prior to admission to the program will submit this plan of study to their Advisory Committee instead of the DGS.

In year three, all students will submit this plan of study to their Advisory Committee.

### Timeline for degree completion for students admitted to the PhD program:

1. Students admitted to the PhD in American Studies with an MA or MS shall be required to enroll in at least 2 courses a semester while also holding an SAA (Student Academic Appointment). If they transfer in up to 12 credits of coursework, they may thus complete the remaining portion of the 32 credit hours requirement of AMST coursework and complete the 12 credit hours required for a PhD minor in **2 years (4 semesters)**. These students will be required to take the written and oral portion of their **qualifying exams** during **Fall of year 3**, and write and defend their **prospectus** during **Spring of year 3**. Students should plan on spending up to two years dissertating, and complete a degree in 5 years total.
2. Students admitted to the PhD in American Studies with a BA or BS as a prior degree shall be required to enroll in at least 2 courses a semester while also holding an SAA (Student Academic Appointment) and thus complete their 32 credit hours of AMST coursework and complete the 12 credit hours required for a PhD minor in **3 years (6 semesters)**. Students will be required to take the written and oral portion of their **qualifying exams** during **Fall of year 4**, and write and defend their **prospectus** during **Spring of year 4**. Students should plan on spending up to two years dissertating, and complete a degree in 6 years total.
3. Students admitted with an MA/MS who opt not to count any of their transfer credit towards the required AMST coursework will follow the timeline laid out for students admitted to the PhD with a BA/BS degree.

### Transfer credit into AMST:

Incoming students who have completed an MA or MS have the option to transfer up to 30 hours of their graduate coursework to count towards the 90 credit hour requirement for a PhD as per the Graduate School Guidelines. However, of these 30 credit hours, a maximum of 12 credit hours may be counted towards the 32 credit hour major course requirement in AMST. The rest of the 30 credits may count as electives towards a student's 90 graduate credit hour requirement for a PhD.

### Qualifying Examination:

Students will take an exam in two parts: a written examination and an additional oral examination conducted over the course of their 5<sup>th</sup> semester (for those entering the PhD program with an MA) or their 7<sup>th</sup> semester (for those entering the PhD program with a BA)

Part 1 of the written examination will cover the history and methods of American Studies. It will comprise a critical examination and analysis of key texts in American Studies from the past, present, and emerging scholarship. The exam will cover the G603 and G604 readings from the larger list generated by the whole faculty annually, as well as key texts agreed upon by the student's advisory

committee. If there are extenuating circumstances, this timeline may be pushed back one semester.

Part 2 of the written examination will focus on the student's area of concentration with the expressed goal of outlining the intersections between the area of concentration and American Studies scholarship. Students will prepare a 50-text list in consultation with their respective advisory committees.

The administration of the examination will be a month-long process for all students, with the written examination (Parts 1 and 2) administered over a 7-day week on the first Monday-Sunday week in October. The faculty comprising the advisory committee will have two weeks to evaluate the written exam, and the oral exam will take place during the fourth week of October. Students who fail the qualifying examination once will be placed on Academic probation, and must take it again during the following spring semester based on a mutually agreeable schedule of the advisory committee and student. Any student who fails the exam twice will be dismissed from the program.

Upon successful completion of the PhD Qualifying Exam, the student will be Nominated to Candidacy for the PhD Degree.

#### **Dissertation Research Committee:**

Students will work with the chair of their Advisory Committee to form and nominate a Research Committee of at least four faculty members, including a representative from their doctoral minor. A member of the core faculty will chair, or co-chair, each Research Committee.

#### **The Prospectus:**

Upon successful completion of the written and oral components of the qualifying examination, and nomination to candidacy, the student will then assemble a dissertation research committee and spend semester 6 working on a dissertation prospectus. The prospectus must be completed and receive the Research Committee Chair's approval the semester following the successful completion of the written and oral parts of the qualifying examinations.

#### **The Dissertation:**

The dissertation itself shall be defended orally. All dissertation defenses are open to the public.

#### **Minor Requirement:**

Students must complete a minor in another department, program, or field. The minor must be completed before the PhD Qualifying Exam is taken. No courses may be counted toward both the minor and any other requirements.

#### **Ph.D. Minor in American Studies**

Students choosing American Studies as a minor (minimum 12 credit hours) in their doctoral program must complete G603, Introduction to American Studies (4 cr.), G751, Seminar in American Studies (3-4 cr.) and either G604, Perspectives in American Studies (4 cr.), G605, Introduction to Native American and Indigenous Studies (4 cr.), G620, Colloquium in American Studies (3-4 cr.), G697, Research in Transnational American Studies (4

cr.), G753, Independent Study (1-4 cr.), or a cross-listed course outside the student's home department.

#### **Ph.D. Minor in Native American and Indigenous Studies**

Students who pursue the Ph.D. minor in Native American and Indigenous Studies will focus their interdisciplinary study on the histories, cultures, art, folklore, politics, and literatures of Native American and Indigenous peoples, chiefly in the Americas, but also, where appropriate, globally. This is one of a very few programs in the United States that focuses explicitly on Native American and Indigenous Studies at the graduate level, and that place the study of American Indians within the context of a broader, more sweeping and international inquiry into the nature of political power, colonial settlement, and global contact.

#### **Program of Study**

Students are required to submit a "Plan of Study" to a member of the Committee on Native American and Indigenous Studies for final approval. After approval, a signed copy should be sent to the Director of Graduate Studies in American Studies. The Plan of Study will provide the rationale for the student's proposed curriculum and will list the courses, with alternative selections in the event such courses are not offered on a timely basis that will serve as the student's minor program. With the Director's approval, the student will become officially enrolled in the Native American and Indigenous Studies degree.

#### **Requirements**

Interested students must first be admitted into a Ph.D. program on the Bloomington campus. Requirements for the Native American and Indigenous Studies Ph.D. minor encourage graduate students to develop a program of academic inquiry that complements their doctoral program and takes advantage of the wide range of College of Arts and Sciences faculty. Students must complete at least 12 credits of coursework, including the required course, G605, Introduction to Native American and Indigenous Studies. The remaining credits can come from any other American Studies course offered by NAIS faculty, assuming content is appropriate, including G620, Colloquium in American Studies (3-4 cr.), with relevant Native or Indigenous content, and a section of G751, Seminar in American Studies (3-4 cr.), also with relevant Native or Indigenous content, or G753, Independent Study in American Studies (1-4 cr.), also with relevant Native or Indigenous content. Students may count up to two graduate-level Native or Indigenous language courses (which are usually listed at the 500-level) toward the minor. For a list of affiliated faculty, students should consult: [americanstudies.indiana.edu/about/native-american-and-indigenous-studies-committee/index.html](http://americanstudies.indiana.edu/about/native-american-and-indigenous-studies-committee/index.html).

#### **Ph.D. Minor in Critical Race and Postcolonial Studies (CRPS)**

Jointly administered by the departments of English and American Studies, introduces students to key debates and theories in Critical Race and Postcolonial Studies (CRPS), the interdisciplinary humanities study of the complex process of racialization. It is dedicated to parsing power relationships constituted by webs of social categories (race, ethnicity, nation, gender, sexuality, etc.) at multiple

degrees of scale, seeking to map the ways power is structured in social relation as well as through the range of categories in play in any given historical context. Work in this field is attentive to questions of material production, class, capital, and power, and is oriented transnationally and diasporically to global histories of indigeneity, colonialism and empire.

CRPS comprises the cutting edges of these fields as they have evolved in conversation with each other and with poststructuralist theory, integrating feminist and queer of color critique at the turn of the millennium. This umbrella offers, today, an interdisciplinary field with a distinctive historiography, methodology, and expanding canon. As analytical framework, CRPS highlights dynamics of social categories as they relate to power, dedicated to critiques of inequity and exclusion in the U.S. and the world. The CRPS minor seeks to familiarize students with this complex genealogy and to involve students in the current debates and methods of this growing field.

### Requirements:

Students must take four courses (12-16 credits): the Introductory Course (ENGL L 648 Readings in Ethnic and Postcolonial Studies, offered annually) and three additional courses chosen in consultation with the CRPS supervisor. Courses beyond ENGL-L 648 must come from at least two departments. To complete the minor, the student must present her/his research in a forum organized by the CRPS Advisory Committee.

### Faculty

#### Chair

Karen Inouye

#### Director of Graduate Studies

Sonia Lee

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Professors

Vivian Halloran\* (English, American Studies), Rasul Mowatt\* (Human Geography, American Studies), Micol Seigel\* (American Studies, History)

#### Associate Professors

Paul Anderson\*, Lessie Jo Frazier\* (Gender Studies, American Studies), Karen Inouye\* (American Studies, History), Sonia Lee\* (American Studies, Latino Studies), Susan Lepselter\*, Rasul Mowatt\* (Human Geography, American Studies), Maisha Wester\* (American Studies, African American and African Diaspora Studies), Phoebe Wolfskill\* (American Studies, African American and African Diaspora Studies)

#### Visiting Assistant Professor

Richard Henne-Ochoa

#### Lecturers

Melanie Castillo-Cullather (Multicultural Affairs)

#### Professor Emeritus

Robert Ivie (American Studies, Communication and Culture)

### Affiliate Professors

Judith Allen\* (History), Candy Gunther Brown\* (Religious Studies), Deborah Cohn\* (Spanish and Portuguese), Stephen Conrad\* (Maurer School of Law), Aurelian Craiutu\* (Political Science), Nick Cullather\* (History, School of Global and International Studies), Jonathan Elmer\* (English), Wendy Gamber\* (History), Ilana Gershon\* (Anthropology), Brain Gilley\* (Anthropology), Jeffrey Gould\* (History), Valerie Grim\* (African American and African Diaspora Studies), Michael Grossberg\* (History), Paul Gutjahr\* (English), Russell Hanson\* (Political Science), Terrill Scott Herring\* (English), David Hertz\* (Comparative Literature), Christoph Irmscher\* (English), Jeffrey C. Isaac\* (Political Science), Jason B. Jackson\* (Folklore and Ethnomusicology), Stephanie Kane\* (International Studies), Stephen Katz\* (Jewish Studies), Stephanie Li\* (English), Alex Lichtenstein\* (History), Edward T. Linenthal\* (History), Michael Martin\* (The Media School), Michael McGerr\* (History), Solimar Otero\* (Folklore and Ethnomusicology), Radhika Parameswaran\* (The Media School), Eric Sandweiss\* (History), John Schilb\* (English), Susan Seizer\* (Anthropology), Pravina Shukla\* (Folklore and Ethnomusicology), Robert Terrill\* (English), Gregory Waller\* (The Media School), Brenda Weber\* (Gender Studies)

### Affiliate Associate Professors

Akinwumi Adesokan\* (The Media School), Chris Anderson\* (The Media School), Purnima Bose\* (English, School of Global and International Studies), Cara Caddoo\* (History, The Media School), James Capshew\* (History and Philosophy of Science and Medicine), Judah Cohen\* (Jewish Studies), Serafin Coronel-Molina\* (School of Education), Stephanie DeBoer\* (School of Global and International Studies, The Media School), Konstantin Dierks\* (History), Judith Failer\* (Political Science), Terri Francis (The Media School), Mary Gray\* (Informatics), Joan Hawkins\* (The Media School), Colin Johnson\* (Gender Studies), DeWitt Kilgore\* (English), Sarah Knott\* (History), Lara Kriegel\* (English), Joan Peng Linton\* (English), Walton Muyumba\* (English), Amrita Myers\* (History), Luciana Namorato\* (Spanish and Portuguese), John Nieto-Phillips\* (History), Ranu Samantrai\* (English), Laura L. Scheiber\* (Anthropology), Stephen Selka\* (Religious Studies), Marvin Sterling\* (Anthropology), Alberto Varon\* (English), Shane Vogel\* (English), Jakobi Williams\* (African American and African Diaspora Studies), Cynthia Wu\* (Gender), Ellen D. Wu\* (History)

### Affiliate Assistant Professors

Ishan Ashitosh (Geography), Faye Gleisser (Art History), Andres Guzman (Spanish and Portuguese), Alisha Jones (Folklore and Ethnomusicology), Gabriel Peoples (Gender Studies), Olimpis Rosenthal (Spanish and Portuguese), Rebecca Sheldon (English), Katherine Sylvester (English),

### Affiliate Senior Lecturers

Melanie Castillo-Cullather (Asian Culture Center), Franklin L. Hess (Institute for European Studies), April K. Sievert (Anthropology)



## Courses

**AMST-G 501 Practicum and Teaching in American Studies (2 cr.)** Practical teaching of American studies: current theories and policies. Associate instructors in A100.

**AMST-G 502 Practicum on Teaching Native American Indigenous Studies (2 cr.)** Practical teaching of Native American and Indigenous Studies: current theories and policies. Associate Instructors in A150.

**AMST-G 503 Practicum on Interdisciplinary Teaching of American Studies (1 cr.)** Practical teaching of American studies: current theories and policies. Offered as a 1 credit practicum for Associate Instructors in AMST teaching a course of their own design.

**AMST-G 520 Topics in Interdisciplinary American Studies (3 cr.)**

Focusing on a specific topic, reflect on established AMST disciplinary methodologies and explore possibilities for new interdisciplinary syntheses. Consider issues like the questions historians ask and how they differ from those of literary critics or sociologist. May be repeated with a different topic for a maximum of six credit hours.

**AMST-G 603 Introduction to American Studies (4 cr.)** Representative readings in interdisciplinary scholarship; the origins and the development of American Studies and current trends.

**AMST-G 604 Perspectives in American Studies (4 cr.)** Survey of perspectives that have been and currently are significant in American Studies.

**AMST-G 605 Introduction to Native American and Indigenous Studies (4 cr.)** This is an introductory course in the interdisciplinary study of Native peoples, with primary focus on the study of indigenous peoples in the continental U.S., Alaska, and Canada.

**AMST-G 620 Colloquium in American Studies (3-4 cr.)** Readings, reports, and discussions on different aspects of American culture. Topics and instructors will change each time the course is offered. May be repeated for credit.

**AMST-G 697 Research in Transnational American Studies (4 cr.)** Issues and methods in the study of the United States or the Americas from a hemispheric, transnational, or global perspective, including directed research on relevant topics. May be repeated once for credit when topic differs for a maximum of 8 credit hours.

**AMST-G 751 Seminar in American Studies (3-4 cr.)** Intensive study of specific topics in American culture and history with emphasis on developing skills in interdisciplinary research. These seminars will culminate in a 20+-page research paper. Topics and instructors will change each time the seminar is offered. May be repeated for credit.

**AMST-G 753 Independent Study (1-4 cr.)** P: Consent of the Director of Graduate Studies and of instructor, who must be a member of the American Studies faculty.

**AMST-G 805 Ph.D. Thesis (arr. cr.)**

This course is eligible for a deferred grade.

**AMST-G 901 Advanced Research (6 cr.)**

## Ancient Studies

**College of Arts and Sciences**

**Departmental E-mail:** [jready@indiana.edu](mailto:jready@indiana.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Ph.D. Minor in Ancient Studies

The program in Ancient Studies seeks to encourage the study of antiquity in all its facets—including its history, art, architecture, literature, music, philosophy, religion, and science—and to promote interdisciplinary approaches to ancient culture. The program draws on the faculty of 12 departments: Anthropology, Central Eurasian Studies, Classical Studies, Comparative Literature, Fine Arts, Geological Sciences, History, History and Philosophy of Science, Jewish Studies, Musicology, Philosophy, and Religious Studies. The minor in Ancient Studies aims to help students expand the depth and scope of their knowledge of ancient cultures and learn about different approaches to them. Toward these ends, it permits students to draw on courses from two or more departments outside of their home department. A student might choose to group together courses from different departments that focus on a certain period (e.g., late antiquity) or topic (e.g., social history).

### Course Requirements

Students must complete 12 graduate credit hours of appropriate courses outside their home department. These courses must be in at least two different departments. No more than 3 credit hours of directed readings can be applied to the minor. No more than 6 credit hours of language study may count toward the minor, all of which must be above the elementary level. Because this minor is an individualized minor, the minor advisor (Jonathan Ready, [jready@indiana.edu](mailto:jready@indiana.edu)) must approve the particular courses that are to be counted toward the minor.

### Grades

Courses in which a student receives less than a B (3.0) will not count toward the minor.

### Faculty

#### Director

Associate Professor Jonathan Ready \* (Classical Studies)

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Professors

James G. Brophy\* (Geological Sciences), Jamsheed Choksy\* (Central Eurasian Studies), Matthew Christ\* (Classical Studies), Eleanor W. Leach\* (Classical Studies), Herbert Marks\* (Comparative Literature), Betty Rose Nagle\* (Classical Studies), William Newman\*

(History and Philosophy of Science), K. Anne Pyburn\* (Anthropology), John Walbridge\* (Near Eastern Languages and Literatures)

### Associate Professors

Bridget Balint (Classical Studies), Cynthia Bannon\* (Classical Studies), Sarah Bassett\* (History of Art), Deborah Deliyannis\* (History), Jonathan Ready\* (Classical Studies), Eric Robinson\* (History), Laura Scheiber\* (Anthropology), Stephen Vinson\* (Near Eastern Languages and Cultures), Julie Van Voorhis\* (History of Art)

### Assistant Professors

Margaretha Kramer-Hajhos (Classical Studies), Jason Mokhtarian (Religious Studies), Eva Mroczek (Religious Studies), Shun-Chang Kevin Tsai (Comparative Literature)

### Professors Emeriti

Paul Eisenberg\* (Philosophy), William Hansen\* (Classical Studies), Timothy Long\* (Classical Studies), Michael Morgan\* (Philosophy), K. D. Vitelli\* (Anthropology)

### Associate Research Scientist

G. William Monaghan\* (Geoarchaeology)

## Courses

### Classical Studies

C405 Comparative Mythology (4 cr.)  
 C409 Roman Literature and Art (3 cr.)  
 C411 (Fine Arts A411) The Art and Archaeology of Anatolia (4 cr.)  
 C412 (Fine Arts A412) The Art and Archaeology of the Aegean (4 cr.)  
 C413 (Fine Arts A413) The Art and Archaeology of Greece (4 cr.)  
 C414 (Fine Arts A414) The Art and Archaeology of Rome (4 cr.)  
 C416 Ovidian Mythology and its Tradition (3 cr.)  
 C419 The Art and Archaeology of Pompeii (4 cr.)  
 C501 Introduction to Graduate Study: Literary and Cultural Theory for Classicists (3 cr.)  
 C503 The Ancient City (4 cr.)  
 C610 Seminar in the Greek and Roman Novels (4 cr.)  
 C623 Seminar in Classical Archaeology (4 cr.)  
 G510 Readings in Greek Historians (4 cr.)  
 G511 Readings in Greek Oratory and Rhetoric (4 cr.)  
 G512 Readings in Greek Philosophers (4 cr.)  
 G513 Readings in the Greek Novel (3 cr.)  
 G516 Readings in Greek Comedy (4 cr.)  
 G517 Readings in Greek Tragedy (4 cr.)  
 G518 Readings in Greek Epic (4 cr.)  
 G536-G537 Survey of Greek Literature I-II (4-4 cr.)  
 G540 Readings in Byzantine Greek (4 cr.)  
 G601 Seminar in Greek Poetry (4 cr.)  
 G603 Seminar on Greek Tragedy (4 cr.)  
 G610 Seminar in the Greek Novel (4 cr.)  
 G611 Seminar in Greek Epigraphy, Papyrology, and Paleography (4 cr.)  
 G620 Seminar in Historical Texts and Historiography (4 cr.)  
 L509 Cicero, His Life and Works (4 cr.)  
 L510 Readings in Latin Historians (4 cr.)  
 L511 Readings in Latin Oratory and Rhetoric (4 cr.)  
 L513 Readings in the Roman Novel (4 cr.)

L515 Readings in Latin Elegy (4 cr.)  
 L530 Roman Rhetoric and Oratory (4 cr.)  
 L536-L537 Survey of Latin Literature I-II (4-4 cr.)  
 L540 Medieval Latin (4 cr.)  
 L550 Roman Historians (4 cr.)  
 L600 Seminar in Latin Epic (4 cr.)  
 L602 Seminar in Latin Comedy (4 cr.)  
 L603 Seminar in Latin Tragedy (4 cr.)  
 L610 Seminar in the Roman Novel (4 cr.)  
 L620 Seminar in Latin Historical Texts and Historiography (4 cr.)

### Fine Arts

A410 History and Methodology of Classical Archaeology (4 cr.)  
 A411 (Classics C411) The Art and Archaeology of Anatolia (4 cr.)  
 A412 (Classics C412) The Art and Archaeology of the Prehistoric Aegean (4 cr.)  
 A413 (Classics C413) The Art and Archaeology of Greece (4 cr.)  
 A414 (Classics C414) The Art and Archaeology of Rome (4 cr.)  
 A416 Greek Architecture (4 cr.)  
 A418 Roman Architecture (4 cr.)  
 A513 Greek Vase Painting (4 cr.)  
 A514 Greek Sculpture: Fifth Century (4 cr.)  
 A516 Greek Sculpture: Hellenistic (4 cr.)  
 A517 Early Italian and Etruscan Art (4 cr.)  
 A518 Roman Sculpture (4 cr.)  
 A519 Roman Painting (4 cr.)  
 A611 Problems in Prehistoric Aegean Archaeology (4 cr.)  
 A612 Problems in Greek Archaeology (4 cr.)  
 A613 Problems in Greek Architecture (4 cr.)  
 A614 Problems in Greek Sculpture (4 cr.)  
 A615 Problems in Greek Painting (4 cr.)  
 A616 Problems in Roman Art (4 cr.)

### History

C386 Greek History (3 cr.)  
 C388 Roman History (3 cr.)  
 C580 History of Ancient Medicine (3 cr.)  
 H605 Colloquium in Ancient History (4 cr.)  
 H705 Seminar in Ancient History (4 cr.)

### History and Philosophy of Science

X556 Philosophy of Science in Antiquity (3 cr.)  
 X601 Seminar in Ancient Science (3 cr.)

### Philosophy

P511 Plato (3 cr.)  
 P512 Aristotle (3 cr.)  
 P595 Intensive Reading: Ancient Philosophy from the Greek or Latin Texts (cr. arr.)

### Religious Studies

R521 Studies in Early Christianity (3 cr.)  
 R535 Studies in Greco-Roman Religion (3 cr.)  
 R610 Studies in Biblical Literature and Religion (3 cr.)  
 R620 Ancient and Medieval Christianity (3 cr.)  
 R633 Colloquium in Ancient Religions (4 cr.)  
 R713 Historical Studies in Western Religions (3 cr.)

## Animal Behavior

### College of Arts and Sciences

Departmental E-mail: [cisab@indiana.edu](mailto:cisab@indiana.edu)

**Departmental URL:** [www.indiana.edu/~animal](http://www.indiana.edu/~animal)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

## Curriculum

### Admission Requirements

Students must be admitted to a Ph.D. program in the Department of Biology, the Department of Psychological and Brain Sciences, or the program in Neuroscience or other related departments or programs (e.g., program in Medical Sciences, Anthropology, History and Philosophy of Science). They must also become a member of the program in Animal Behavior.

Students should select an advisory committee made up of at least three members of the graduate faculty. For students whose home department or program is Biology, at least one member of the advisory committee from the Department of Psychological and Brain Sciences or the program in Neuroscience or other related departments or programs (i.e., Anthropology, History and Philosophy of Sciences) is expected. For students whose home department or program is the Department of Psychological and Brain Sciences or the program in Neuroscience, at least one member of the advisory committee from Biology or other related departments or program (i.e., Medical Sciences, Anthropology, History and Philosophy of Science) is expected. At least two of the student's committee members must be members of the program in Animal Behavior.

### Ph.D. Minor in Animal Behavior Course Requirements

At least THREE courses taken from at least two different departments/graduate programs, as specified below:

- (1) ONE ABEH A501 Seminar in the Integrative Study of Animal Behavior.
- (2) TWO courses from the following list. One of these courses must be a graduate-level evolution or ecology course (E/E) if such a course is not part of the student's major. One of these courses must be a graduate-level neuroscience or physiology (N/P) course if such a course is not part of the student's major. Other graduate courses with significant content in the study of animal behavior may be substituted with the permission of the CISAB director:

- ANTH B540 Hormones and Human Behavior (N/P)
- NEUS N500 Neural Science I (N/P)
- NEUS N501 Neural Science II (N/P)
- BIOL L560 Physiological Ecology (N/P)
- BIOL Z563 Comparative Neurobiology of Animal Behavior (N/P)
- BIOL Z620 Genetics of Behavior (N/P)<sup>1</sup>
- BIOL Z620 Sensory Ecology (N/P)<sup>1</sup>
- PSY P526 Neurobiology of Learning and Memory (N/P)
- PSY P569 Stress Effects on Brain and Behavior (N/P)
- PSY P637 Neurobiology of Addiction (N/P)

- PSY P667 Neuropsychopharmacology (N/P)
- ANTH B527 Human Evolutionary Biology Laboratory (E/E)
- ANTH B568 Evolution of Primate Social Behavior (E/E)
- BIOL L567 Evolution (E/E)
- BIOL L573 Quantitative Genetics and Microevolution (E/E)
- BIOL L581 Behavioral Ecology (E/E)
- BIOL Z540 Population Genetics (E/E)
- BIOL Z620 Phylogenetics (E/E)<sup>2</sup>
- BIOL L505 Evolution and Development (E/E)
- Additional ABEH A501 Seminar in the Integrative Study of Animal Behavior
- ANTH B500 Proseminar in Bioanthropology<sup>3</sup>
- ANTH B522 Laboratory Methods in Bioanthropology
- ANTH B524 Theory and Method in Human Paleontology
- ANTH B525 Genetic Methods in Anthropology
- ANTH B546 Reproductive Ecology
- ANTH B600 Seminar in Bioanthropology<sup>3</sup>
- BIOL Z460 Animal Behavior
- BIOL Z466 Endocrinology
- COGS Q551 Brain and Cognition
- COGS Q700 Theoretical Issues in Animal Cognition<sup>3</sup>
- PSY P514 Methods in Biopsychology
- PSY P527 Developmental Psychobiology
- PSY P564 Psychophysics
- MED P561 Comparative Animal Physiology (N/P)

<sup>1</sup> Only Genetics of Behavior or Sensory Ecology sections of BIOL Z620 count towards this requirement. Other sections require approval of the CISAB director.

<sup>2</sup> Only Phylogenetics section of BIOL Z620 counts towards this requirement. Other sections require approval of the CISAB director.

<sup>3</sup> Only sections with significant content in the field of animal behavior count towards this requirement. Consult with the CISAB director.

### Examination

As required by home department or program.

### Graduate Area Certificate in Animal Behavior Course Requirements

The requirements for the Area Certificate in Animal Behavior include all of the requirements of the minor, plus the following:

1. One additional ABEH A501 Seminar in the Integrative Study of Animal Behavior
2. ABEH A502 Professional Ethics for the Bio-Behavioral Sciences or PSY P595 First-Year Research Seminar
3. One additional course from above.

### Examination

As required by home department or program.

### Statistics Requirement

As required by home department or program.

## Thesis

Required.

## Faculty

### Director

Professor Cara L. Wellman\*

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)< /p>

### Professors

Jeffrey R. Alberts\* (Psychological and Brain Sciences), Colin Allen\* (History of Philosophy and Science), Randall D. Beer\* (Cognitive Science), John M. Beggs\* (Physics), Sue Carter\* (Biology), Peter Cherbass\* (Biology), Jonathon Crystal\* (Psychological and Brain Sciences), Robert de Ruyter van Steveninck\* (Physics), Gregory E. Demas\* (Biology), Robert DeVoe\* (Emeritus, Optometry), Preston E. Garraghty\* (Psychological and Brain Sciences), Julia R. Heiman\* (Psychological and Brain Sciences), Kevin D. Hunt\* (Anthropology), Ellen D. Ketterson\* (Biology), Curtis M. Lively\* (Biology), Elisabeth Lloyd\* (History and Philosophy of Science), Kenneth Mackie\* (Psychological and Brain Sciences), Emilia P. Martins\* (Biology), Craig E. Nelson\* (Emeritus, Biology), Milos Novotny\* (Chemistry), Rudolph Raff\* (Biology), J. C. Randolph\* (Emeritus, Public and Environmental Affairs), George V. Rebec\* (Emeritus, Psychological and Brain Sciences), Stephanie Sanders\* (Gender Studies), Kathy D. Schick\* (Anthropology), Dale R. Sengelaub\* (Neuroscience Program, Psychological and Brain Sciences), Roderick A. Suthers\* (Medical Sciences), William D. Timberlake\* (Emeritus, Psychological and Brain Sciences), Peter M. Todd\* (Cognitive Sciences), Nicholas Toth\* (Anthropology), Virginia Vitzthum (Anthropology), Michael J. Wade\* (Biology), Cara L. Wellman\* (Psychological and Brain Sciences), Meredith J. West\* (Psychological and Brain Sciences)

### Associate Professors

John M. Beggs\* (Physics), Heather Bradshaw\* (Psychological and Brain Sciences), Richmond Harbaugh\* (Business), Laura Hurley\* (Biology), Frederika Kaestle\* (Anthropology), Daniel B. Kearns\* (Biology), Armin P. Moczek\* (Biology), Henry D. Prange\* (Emeritus, Medical Sciences), Laura L. Scheiber\* (Anthropology), Whitney M. Schlegel (Human Biology, Biology), P. Thomas Schoenemann\* (Anthropology), Sima Setayeshga\* (Physics), G. Troy Smith\* (Biology), S. Holly Stocking\* (Emeritus, Journalism), W. Dan Tracey\* (Biology)

### Assistant Professors

Justin R. Garcia\* (Gender Studies), Kimberly Rosvall\* (Biology)

### Senior Scientists

Andrew King (Psychological and Brain Sciences), Marcy A. Kingsbury (Biology)

### Assistant Scientists

Farrah Bashey-Visser (Biology)

## Academic Advisor

Professor Cara L. Wellman, Multidisciplinary Science Building II 202, (812) 855-4922

## Courses

**ABEH-A 500 Introduction to Animal Behavior Research (1 cr.)** Introduces students to research opportunities in animal behavior. Local researchers will present their recent research efforts, emphasizing the integrative aspects of their work and its application to functional and mechanistic explanations of behavior.

**ABEH-A 501 Seminar in the Integrative Study of Animal Behavior (2-3 cr.)** Investigation of functional behavior of animals (e.g., migration, parental behavior, mate choice) using an interdisciplinary approach that attempts to integrate the perspectives of developmental psychology, ecology and evolutionary biology, neural science, and the science of learning and memory. Topic will vary. May be repeated for credit.

**ABEH-A 502 Research and Professional Ethics in Bio-Behavioral Sciences (1 cr.)** Readings and discussion dealing with general ethical issues in science, with a particular focus on animal behavior. Topics include treatment and protection of animals; the acquisition, analysis, and use of data; student-mentor and student-teacher relations; credit, authorship, and peer review.

## Anthropology

### College of Arts and Sciences

**Departmental Contact:** [sodaffer@iu.edu](mailto:sodaffer@iu.edu); (812) 855-1041

**Departmental URL:** <https://anthropology.indiana.edu/index.html>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff uses those requirements contained only in *The University Graduate School Bulletin*.)

## Curriculum

### Degrees Offered

Master of Arts and Doctor of Philosophy

### Special Departmental Requirements

(See also general University Graduate School requirements.)

### Admission Requirements

1. Bachelor's degree from a recognized institution and evidence of academic potential to complete an advanced degree;
2. three letters of recommendation;
3. a personal statement of goals in the field of anthropology;
4. a writing sample (10,000 words or less);
5. a curriculum vitae; and
6. a completed application form.

Graduate Record Examination (GRE) test results are not required. If applicants choose to submit GRE results from the past five years, they should ask ETS to forward their



scores to Indiana University using the institution code 1324.

Recommended undergraduate training in anthropology and related fields:

- for students interested primarily in the field of bioanthropology, courses in chemistry and the biological sciences;
- for students specializing in the field of archaeology, courses in history, earth sciences, and the humanities;
- for students specializing in the field of social/cultural anthropology, courses in the social sciences and the humanities;
- for students specializing in the field of linguistic anthropology, courses in general linguistics and psycholinguistics.

### **Master of Arts Degree Requirements**

1. A minimum of 30 credit hours, with a minimum cumulative grade point average of 3.25 and no more than 6 credit hours of thesis credit. At least 20 credit hours must be in anthropology, including three courses (excluding thesis) that are numbered 500 or above;
2. at least one course that carries graduate credit in three of the four fields listed above;
3. at least one semester or two summer sessions of full-time study while in residence on the Bloomington campus; and **either**
4. a thesis **or**
5. a four-hour written examination.

Examination grading will be (a) pass with distinction, (b) pass (both of these include the award of the M.A. degree), or (c) failure. The examination may be taken twice, but two failures will result in automatic dismissal of the student.

Option (4) or (5) must be selected; no change will be allowed once the selection is made. No oral examination or defense of the thesis is required. The thesis must be read and approved by all members of the student's committee. A master's thesis may be based on library, laboratory, or field research. The department does not require, but does recommend, the completion of one foreign language, particularly if the student contemplates continuing for the Ph.D.

### **Doctor of Philosophy Degree**

The Department of Anthropology offers all four anthropological subfields: Archaeology, Bioanthropology, Linguistic Anthropology, and Social/Cultural Anthropology. Students elect one of these fields as their major field, and they also must take courses in the other fields as specified in the major field requirements. Students may also select one of four concentrations, Archaeology and Social Context, Food Studies, Medical Anthropology, and Paleoanthropology. Each of these concentrations is supplemental to the field. Each field involves its own breadth requirements within the Department of Anthropology and others that may require further class work. All four fields have the following requirements in common.

### **Foreign Language/Research Skills**

One of three is required: (1) reading proficiency in two languages, one normally selected from French, German, Russian, Spanish, or Portuguese (consult advisor for additional languages); (2) proficiency in depth in one language; or (3) reading proficiency in one of the languages cited in (1) plus proficiency in data management and analysis software or statistics.

### **Qualifying Examination**

In order to be recommended to candidacy for the Ph.D. degree in anthropology, the student must pass a qualifying examination. This candidacy cannot be granted until the foreign language or research skills and other requirements have been fulfilled and until at least 60 credit hours have been earned. Students are strongly encouraged to complete course work and take the qualifying examination in three years.

The format of the exam shall be decided by the advisory committee in consultation with the student from among the following options:

1. a take-home exam, or
2. a proctored in-camera exam, or
3. an exam combining elements of (1) and (2).

Preparation, administration, and grading of the examination are the responsibility of the advisory committee, but other members of the department are free to participate without voting. A passing grade requires the affirmative vote of a majority of the anthropologists on the examining committee. Grading is as follows: (a) pass with distinction; (b) pass [both (a) and (b) include certification to doctoral candidacy and the M.A. degree if desired and not already awarded]; (c) low pass with terminal M.A. degree; (d) failure. The qualifying examination may be retaken once.

### **Research Proposal**

Most faculty advisers prefer that student circulate a research proposal to the Advisory Committee at least two weeks before the qualifying examination (Option A). The Research Proposal must include a statement of the research problem, a literature review related to that problem, the methodology to be employed, a tentative timetable of data collection and analysis, and (if a grant application has been or will be submitted) a discussion of funding prospects and the budget. Students are normally examined on aspects of their research proposal during their qualifying examination, both the written and oral portions. Normally, nomination to candidacy and appointment of the Research Committee cannot take place until the Research Proposal has been accepted by the Advisory Committee. All proposals that include the use of living human subjects must receive advance clearance by the IUB Institutional Review Board (Human Subjects) regardless of whether external funding is sought. This clearance is required for use of informants, participant observation, interviews, and questionnaires, as well as more invasive research such as measurement and testing. Some faculty advisers may recommend that a student choose Option B, in which the research proposal is presented after the written and oral qualifying exams. This might occur when a student's research interests have changed and/or committee members will likely change following the exam, or for other less common reasons. In these cases, students have up to six months to name their

new faculty adviser and an additional six months to have their research proposal approved by their new committee.

### Dissertation

Each candidate must prepare a doctoral dissertation as part of the requirements for the Ph.D. degree. This dissertation may be the result of fieldwork or laboratory or library research. The department expects field research as part of the student's doctoral training in anthropology, but the dissertation may be based upon field data, laboratory data, museum collections, archives, or other documentary sources. The topic and general outline of the proposed dissertation must be approved by the candidate's research committee.

### Final Defense

An oral examination of the dissertation—which cannot be waived—will be scheduled and administered by the candidate's research committee.

### Teaching

The department considers teaching experience to be a critical part of graduate training. Therefore, every effort will be made to provide teaching opportunities for each graduate student.

### Subfield Requirements

#### 1. Archaeology

The following courses are required and must be completed with a grade of B or better: Pro-seminar in Archaeology (P500), a course in research design (usually P502), a course in ethics (usually P509), a course in the history of Anthropology (usually H500), and an archaeological methods course. In addition, student must complete three graduate courses in at least two other subfields of Anthropology (Bioanthropology, Linguistic Anthropology, or Social/Cultural Anthropology). In the qualifying exam, each student must demonstrate mastery of Archaeology, one chosen area of specialization, and one ethnographic area. Course substitutions and waivers will be allowed with permission from the Advisor and Graduate Affairs Committee.

#### 2. Bioanthropology

The following courses are required, and must be completed with a grade of B or better: B500, B525, a course in human evolutionary history, and a course in human biology. In addition, students must complete three courses in at least two of the other subfields of Anthropology (Archaeology, Social/Cultural Anthropology, and Linguistic Anthropology). Expertise will be evaluated as part of the qualifying exam. Option 3 must be chosen for the Foreign Language and Research Skills requirement, with students gaining reading proficiency in at least one scholarly language, as well as in statistics and/or other data management and analysis software. Course substitutions and waivers will be allowed with permission from the Advisor and Graduate Affairs Committee.

#### 3. Linguistic Anthropology

The following courses are required, and must be completed with a grade of B or better: L500, H500, a course in linguistic field methods, and one graduate course in two of the other fields of Anthropology

(Archaeology, Bioanthropology, or Social/Cultural Anthropology). Students must also demonstrate competence in at least four of the five basic areas of linguistics (phonetics, phonology, morphology, syntax, and historical-comparative linguistics) plus knowledge of the structure of a particular language. Students usually meet this requirement by completing an outside minor in Linguistics. In the qualifying exam, each student must demonstrate mastery of Linguistic Anthropology, one chosen area of specialization, and one ethnographic area. Course substitutions and waivers will be allowed with permission from the Advisor and Graduate Affairs Committee.

#### 4. Social/Cultural Anthropology

The following courses are required, and must be completed with a grade of B or better: H500, E500, E606, one graduate course in two of the other fields of Anthropology (Archaeology, Bioanthropology, or Linguistic Anthropology). In the qualifying exam, each student must demonstrate mastery of Social/Cultural Anthropology, two chosen areas of specialization, and one ethnographic area. Course substitutions and waivers will be allowed with permission from the Advisor and Graduate Affairs Committee.

#### Ph.D. Minor in Anthropology

Students in other departments may minor in anthropology by completing at least 12 credit hours of coursework in anthropology with a grade of B or better. No more than 6 credit hours will be accepted by transfer of graduate credit from another university. Each minor student chooses a faculty advisor to help in the selection of a set of courses that best contributes to the research goals of the student.

#### Ph.D. Minor in Anthropology of Food

Students must take four courses (3 credits each) one of which must be the core course, E621 Food and Culture. The additional graduate courses in anthropology must be chosen from at least two different fields of the discipline (Archaeology, Social/Cultural Anthropology, Biological Anthropology, or Linguistic Anthropology).

### Faculty

#### Department Chair

Professor Andrea S. Wiley\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

Note: "I" after a faculty member's name indicates that the person teaches at Indiana University–Purdue University Indianapolis.

#### Director of Graduate Studies

Professor Sara L. Friedman\*, Student Building 158, (812) 856-4595, slfriedm@indiana.edu

#### Distinguished Professors

Richard Bauman\* (Emeritus), Emilio F. Moran\* (Emeritus), Richard Wilk\* (Emeritus), Eduardo S. Brondizio\*

#### Rudy Professor

Emilio F. Moran\* (Emeritus)

### Provost Professor

Anne Pyburn\*

### Chancellors' Professors

Raymond J. DeMallie\* (Emeritus), Robert Meier\* (Emeritus), Anya Peterson Royce\*

### Professors

Susan Alt\*, Joëlle Bahloul\* (Emeritus), Eduardo S. Brondizio\*, Gracia Clark\* (Emeritus), Geoffrey W. Conrad\* (Emeritus), Della Collins Cook\*, Ilana M. Gershon\*, Sara Friedman\*, Brian Gilley\*, Paula Girshick\* (Emeritus), L. Shane Greene\*, Kevin D. Hunt\*, Jason Baird Jackson\*, Paul L. Jamison\* (Emeritus), Sarah Phillips\*, P. Thomas Schoenemann\*, Susan Seizer\*, Jeanne M. Sept\*, M. Nazif Shahrani\*, Beverly Stoeltje\* (Emeritus), Frances Trix\* (Emeritus), James Vaughan\* (Emeritus), Karen D. Vitelli\* (Emeritus), Virginia Vitzthum\*, Andrea S. Wiley\*

### Associate Professors

Beth A. Buggenhagen\*, Jane Goodman\*, Frederika Kaestle\*, Stacie M. King\*, Susan Lepselter\*, Philip S. LeSourd\*, Patrick Munson\* (Emeritus), Sarah Osterhoudt\*, Laura Scheiber\*, Marvin D. Sterling\*, Daniel Suslak\*

### Assistant Professors

Kathryn E. Graber\*, Michael Wasserman\*

### Senior Lecturer

April K. Sievert\*

### Professor of Practice

Jennifer Meta Robinson\*

### Adjunct Professors

Robert Botne\* (Linguistics), David Burr\* (IUPUI, Anatomy and Cell Biology), Elizabeth Cullen Dunn\* (Geography), Susan B. Hyatt\* (IUPUI Anthropology), Stephanie Kane\* (Global and International Studies), Seung-kyung Kim (Korean Studies Institute, EALC), Daniel Knudsen\* (Geography), Bradley Levinson\* (Education), John McDowell\* (Folklore and Ethnomusicology), Valerie O'Laughlin\* (School of Medicine), P. David Polly\* (Earth and Atmospheric Sciences), Pravina Shukla\* (Folklore and Ethnomusicology), Susan Sutton (IUPUI Anthropology)

### Adjunct Associate Professors

Heather Akou\* (Apparel Merchandising and Interior Design), Serafin Coronel-Molina\* (Education), Jeannette Dickerson-Putnam\* (IUPUI, Anthropology (Emeritus), James Farmer (School of Public Health), Lessie Jo Frazier\* (Gender Studies), Mary Gray\* (Informatics), Lucia Guerra-Reyes\* (School of Public Health), Jackson Njau\* (Earth and Atmospheric Sciences), Philip Parnell\* (International Studies and Criminal Justice), Stephen Selka\* (Religious Studies)

### Adjunct Assistant Professors

Wendy Vogt (IUPUI, Anthropology)

### Other Adjunct Faculty

Andrew Asher, Marcia Bezerra Almeida, Charles Beeker (Underwater Science), Nicholas Ivan Belle (FNECC), James Golden Carrier, Gary Dunham (IU Press), Stefano Fiorini, Catherine Foley, Stacey Giroux, Gilles Havard, Richard Henne, Hilary E. Kahn (IUPUI), Olga Kalentzidou (Geography), Judith Kirk (Mathers Museum), Jean Lave, John Langdon, Robert Shumaker, Andrea Dalledone Siqueira, Sheli Smith, Jayne-Leigh Thomas (NAGPRA Director), Catherine Tucker

### Courses

#### General Anthropology

- ANTH-A 303 Evolution and Prehistory (3 cr.)
- ANTH-A 403 Introduction to Museum Studies (3 cr.)
- ANTH-A 405 Museum Methods (3 cr.)
- ANTH-A 505 Fields of Anthropology: A Graduate Survey (3 cr.) Cultural anthropology, linguistics, archaeology, physical anthropology. For graduate students of other departments and beginning graduate students in anthropology.
- ANTH-A 506 Anthropological Statistics (3 cr.) Statistics in all fields of anthropology. Scales, frequency distributions, contingency, correlation, probability, sampling, significance tests, elementary multivariate analysis.
- ANTH-A 521 Introduction to College Teaching, Interdisciplinary Approaches (3 cr.) This seminar will help graduate students become more effective educators and to spark ongoing interest in the intellectual challenges and possibilities that teaching presents. Theory and practice in college teaching will help participants become more intentional and more informed about interdisciplinary possibilities and disciplinary distinctions in college teaching.
- ANTH-A 525 Community Based Research I (3 cr.) Community based research involves a partnership approach in which responsibility for planning, conducting, and evaluating research is shared with a community. This course provides grounding in community based research methods, examining how they transform social science research. We will explore issues of ethics, power relations, and field work practices.
- ANTH-A 526 Community Based Participatory Research Methods 2 (3 cr.) This is a service-learning course that provides hands-on-training. Students will apply principles taught in ANTH-A525, and work with communities to conduct a community-based research project. Class activities include developing a research design, writing a grant proposal to fund the research, and producing community public reports about the project.
- ANTH-A 576 Graduate Museum Practicum (1-6 cr.) P: Must have prior arrangement with the museum professional supervising work. Anthropology-oriented practicum at the Mathers Museum of World Cultures or another museum. Relevant readings, participation, and a capstone event are required. May be repeated for up to 6 credit hours.

- ANTH-A 595 Graduate Readings in Anthropology (1-4 cr.) Individualized course that allows graduate students the opportunity to work one on one with a faculty member to develop expertise in a particular topic/theme/area of study. The course requires instructor permission and can be repeated as needed.
- ANTH-A 600 Seminar in Anthropology (2-4 cr.) May be taken in successive semesters for credit.
- ANTH-A 622 Advanced Pedagogy: Knowledge, Power, and Pedagogy (3 cr.) This advanced pedagogy seminar will investigate theories of learning and academic practice.
- ANTH-A 667 Topics in Medical Anthropology (3 cr.) In-depth perspectives on central topics in contemporary medical anthropology. Topics vary depending on expertise and focus of instructor. Example topics of focus include HIV-AIDS in Cross-Cultural Context; Anthropological Perspectives on Disability; Child Health and Nutrition; Health and Structural Inequalities; and Medical Anthropology of Gender and Reproduction, among others.
- ANTH-A 800 Research (arr. cr.) (1) archaeology, (2) social-cultural anthropology, (3) linguistics, and/or (4) biological anthropology.

### Bioanthropology

- ANTH-B 370 Human Variation (3 cr.)
- ANTH-B 301 Laboratory in Bioanthropology (3 cr.)
- ANTH-B 464 Human Paleontology (3 cr.)
- ANTH-B 466 The Primates (3 cr.)
- ANTH-B 472 Bioanthropology of Aboriginal America (3 cr.)
- ANTH-B 480 Human Growth and Development (3 cr.)
- ANTH-B 500 Proseminar in Bioanthropology (3 cr.) Human evolution from the standpoint of an interaction of biological, ecological, and sociocultural factors. Survey of bioanthropology from historical, systematic, and applied viewpoints; emphasis on changing content, concepts, methods, and organization of the science.
- ANTH-B 512 Evolutionary Medicine (3 cr.) This course will incorporate principles from evolutionary theory into our understanding of various infectious and chronic diseases common to human populations both past and present. Although proximate mechanisms involving physiology and behavior will be discussed, the focus will be to determine why such mechanisms have evolved in the first place.
- ANTH-B 521 Bioanthropology Research Methods (3 cr.) P: B200, B301. Designed for advanced students of bioanthropology and related biological sciences to familiarize them with the methods and techniques of collecting, preserving, and analyzing both morphological and somatological data.
- ANTH-B 522 Laboratory Methods in Bioanthropology (2 cr.) P: Concurrent with B521. Laboratory dealing with methods and techniques of assessment and

analysis of morphological and somatological data that forms the subject matter of B521.

- ANTH-B 523 Anthropometry (3 cr.) P: B200, B301, or consent of instructor. Designed for advanced students in bioanthropology. Basic research techniques applicable to living populations. Research project on volunteer subjects required. Formation of hypotheses, data collection procedures, testing of hypotheses, and presentation of results in oral and written form will be stressed.
- ANTH-B 524 Theory and Method in Human Paleontology (3 cr.) P: B200, B301, or consent of instructor. Emphasis on fossil hominid evolution and adaptation. Intensive study of human fossil skeletal anatomy. Reconstruction of hominid diets and positional behavior via skeletal analysis and functional morphology.
- ANTH-B 525 Genetic Methods in Anthropology (3 cr.) P: B200, B301, or consent of instructor. Specialized training in laboratory procedures and interpretation of genetic markers found in human populations. Major systems covered are ABO, Rh, MNSs, Duffy, Kell, secretor status, and PTC testing. Emphasis on use of genetic markers in human evolutionary research.
- ANTH-B 526 Human Osteology (3 cr.) P: B200, B301, or consent of instructor. Descriptive and functional morphology of the human skeleton with emphasis on the identification of fragmentary materials. Determination of age, sex, and stature; craniology; and research methods in skeletal biology. Guided research project in the identification of skeletal material required.
- ANTH-B 527 Human Evolutionary Biology Laboratory (3 cr.) This course provides students with experience conducting actual research in human evolutionary biology. Students work together in small groups to collect data on living humans, perform laboratory/statistical analyses and prepare/present manuscripts. Students will gain experience with scientific methodology, human subjects committees, survey design, sample collection, and biomarker assays.
- ANTH-B 528 Dental Anthropology (3 cr.) P: B200, B301, or consent of the instructor. Descriptive and functional morphology of primate dentitions, stressing nomenclature of crown features. Human enamel microstructure, development, wear, occlusion, pathology, odontometrics, and discrete variation as applied to research problems in bioanthropology. A guided research project is required.
- ANTH-B 540 Hormones and Human Behavior (3 cr.) This course will review the roles of hormones in the evolution and expression of human and nonhuman animal behaviors. Emphasis will be placed on behaviors associated with aggression, stress, mating, and parenting. This course is particularly relevant for students interested in evolutionary psychology and human health.
- ANTH B543 Evolution of Human Ecological Footprint (3 cr.) Current environmental crises did



not begin overnight and may have roots deep in our evolutionary history. Although our effects on the biosphere has only recently shown exponential growth, we will explore a series of threshold moments in the history of our species that had great implications for the environment.

- ANTH-B 544 The Biology and Culture of Women's Bodies (3 cr.) Using evolutionary and anthropological approaches (life history theory, biocultural models, demography), examines the extent and causes of variation among women and across populations in biological form and functioning from menarche through menopause. Covers the biology of women's bodies and an appreciation for the influence of cultural traditions and practices.
- ANTH-B 545 Nutritional Anthropology (3 cr.) A biocultural approach to diet and nutrition. Basic concepts in nutrition. Methods to assess dietary intake and nutritional status. Diet in human evolution, human biological variation, and the adaptive significance of food processing. Contemporary critiques of nutrition and food policies; globalization of diet; and anthropological perspectives on under- and over-nutrition.
- ANTH-B 548 Human Demography and Life History (3 cr.) An exploration of the relationships between the human lifecycle and population dynamics. Classic and contemporary theories of population dynamics will be explored and considered in relation to evolutionary theory, highlighting life history theory. Demographic methods will be presented. Examples of anthropological studies of demography and life history will be utilized.
- ANTH-B 550 Issues in Human Origins: Creation and Evolution (3 cr.) Review of the creation/evolution controversy in a seminar setting. Fundamentals of organic evolution covered, especially pertaining to the origins of our species. Additionally, the major arguments as set forth by "scientific creationists" are presented, along with an appraisal of the "balanced treatment" notion that has been proposed for inclusion in public school curricula.
- ANTH-B 568 The Evolution of Primate Social Behavior (3 cr.) Major patterns of social organization in the order of primates, with closer examination of several important primate species. Darwinian theories of behavioral evolution will be examined. Particular attention will be paid to the influence of food-getting and diet on social behavior.
- ANTH-B 570 Human Adaptation: Biological Approaches (3 cr.) Understanding the concept of adaptation as it is utilized within bioanthropology, anthropology, and other disciplines. Focus on individual and population responses to heat, cold, solar radiation, high altitude, nutritional and disease stress. Participation in discussion and presentation of oral and written reports emphasized throughout the seminar.
- ANTH-B 600 Seminar in Bioanthropology (3 cr.) Subject will vary; students may thus receive credit more than once.

- ANTH-B 601 Primate Anatomy (3 cr.) P: B200, B301; P or concurrent: B466. Comparative anatomy of the nonhuman primates with emphasis on the analysis of bone and muscle relationships. Application of comparative techniques to current research in bioanthropology. Dissection of several primate species required.
- ANTH-B 602 Paleopathology (3 cr.) P: B200, B301. Disease in prehistoric skeletal material and in written and visual representations. Diagnosis and epidemiological characterization of diseases of bone. A guided research project on a topic in paleopathology is required. Seminar presentation of two literature reviews and a research project are required.
- ANTH-B 645 Biocultural Medical Anthropology (3 cr.) Analysis of health and disease from an integrated biocultural perspective, which incorporates the evolutionary, ecological, and socio-cultural context of health and disease, to understand what kinds of diseases to which we as a species are vulnerable and why there is variation in risk of getting sick or staying well.

### **Social and Cultural Anthropology**

- ANTH-E 303 Introduction to Social and Cultural Anthropology (3 cr.)
- ANTH-E 305 Introduction to Ethnomusicology (3 cr.)
- ANTH-E 310 Introduction to the Cultures of Africa (3 cr.)
- ANTH-E 311 The Ethnography of Eastern Africa (3 cr.)
- ANTH-E 320 Indians of North America (3 cr.)
- ANTH-E 321 Peoples of Mexico (3 cr.)
- ANTH-E 322 Peoples of Brazil (3 cr.)
- ANTH-E 325 North American Indian Music (3 cr.)
- ANTH-E 329 Indians in the United States in the Twentieth Century (3 cr.)
- ANTH-E 330 Indians of South America (3 cr.)
- ANTH-E 332 Jewish Women: Anthropological Perspectives (3 cr.)
- ANTH-E 334 Jews in Moslem Society (3 cr.)
- ANTH-E 340 Indians of Mexico and Central America (3 cr.)
- ANTH-E 370 Peasant Society and Culture (3 cr.)
- ANTH-E 371 Modern Jewish Culture and Society (3 cr.)
- ANTH-E 372 Racism, Anthropology of Prejudice (3 cr.)
- ANTH-E 375 Mental Illness in Cross-Cultural Perspectives (3 cr.)
- ANTH-E 380 Urban Anthropology (3 cr.)
- ANTH-E 404 Field Methods in Ethnography (3 cr.)

- ANTH-E 405 Principles of Social Organization (3 cr.)
- ANTH-E 406 Anthropological and Documentary Film (3 cr.)
- ANTH-E 407 Visual Anthropology: Filmmaking (3 cr.) P: Junior standing or permission of instructor. Experimental filmmaking concerning social behavior, institutions, and customs.
- ANTH-E 420 Economic Anthropology (3 cr.)
- ANTH-E 425 Ethnozoology: Studies in American Indian Subsistence (3 cr.)
- ANTH-E 427 Human Adaptation: Cultural Approaches (3 cr.)
- ANTH-E 430 Kinship Organization (3 cr.)
- ANTH-E 440 Political Anthropology (3 cr.)
- ANTH-E 450 Folk Religions (3 cr.)
- ANTH-E 451 Myth and Legend: Cultural Meanings and Interpretations (3 cr.)
- ANTH-E 453 Revitalization Movements (3 cr.)
- ANTH-E 455 Anthropology of Religion (3 cr.)
- ANTH-E 457 Ethnic Identity (3 cr.)
- ANTH-E 460 The Arts in Anthropology (3 cr.)
- ANTH-E 462 Anthropological Folklore (3 cr.)
- ANTH-E 463 Anthropology of Dance (3 cr.)
- ANTH-E 465 Medical Anthropology (3 cr.) A cross-cultural examination of a biocultural systems model of human adaptation in health and disease, including: the interaction of biology, ecology, and culture in health; ethnomedical systems in the cross-cultural conception, presentation, diagnosis, and treatment of disease; and sociocultural change and health.
- ANTH-E 470 Psychological Anthropology (3 cr.)
- ANTH-E 480 Theory of Culture Change (3 cr.)
- ANTH-E 500 Proseminar in Cultural and Social Anthropology (3 cr.) Introduction to contemporary theories and practices in cultural and social anthropology, with a focus on key concepts and debates that have motivated the field.
- ANTH-E 502 Introduction to Performance (3 cr.) Introduction to performance-oriented perspectives on communication and culture, focusing on the relationship between performance and other dimensions of communicative practice in social life.
- ANTH-E 505 Social Organization and Process (3 cr.) Anthropological analysis of sociocultural process from symbolic interactionist perspective. Topics include critical comparison of relevant theories, cross-cultural applications, and methodology of field research.
- ANTH-E 508 Ethnographic Method in Performance (3 cr.) Exploration of ethnographic research methods in the study of performance, including the ethnography of performance, media, and public discourse. The emphasis is on qualitative methods; course work includes exercises in participant observation and interviewing.
- ANTH-E 510 Problems in African Ethnography and Ethnology (3 cr.)
- ANTH-E 511 Ethnography of the Congo (2 cr.)
- ANTH-E 520 Problems in Economic Anthropology (3 cr.) P: Consent of instructor. Seminar on problems related to the study of technologies and economic systems of non-Western peoples.
- ANTH-E 523 Life Histories (3 cr.) Life histories give ethnographies accessibility, emotional impact, deep contextualization, and a deceptively transparent opening for authentic voices. This course explores the complex issues of power and knowledge underlying this method, including interviewing strategies, consent, confidentiality, editing and publishing choices, and considers its position within broader research agendas. We discuss classic examples, recent narrative collections and contemporary experimental texts.
- ANTH-E 525 Comparative Ethnology of North America (3 cr.) P: A505 or E500; E320; A506; or consent of instructor. Seminar on comparative problems of North American Indian cultures. May be repeated for credit.
- ANTH-E 526 Creative and Interdisciplinary Ethnography (3 cr.) Explores works of ethnography that seek to represent the real through expressive, nonstandard forms by examining the permeable boundaries and overlaps between fiction and ethnography through both close readings and discussion of selected texts and through forays into producing nontraditional, creative ethnographic writing.
- ANTH-E 527 Environmental Anthropology (3 cr.) Graduate course on theory and method in the study of human-environment interactions. Emphasis on contemporary debates and approaches and on research design in environmental research.
- ANTH-E 560 Ethnography and Social Theory (3 cr.) Scholars build social theory through the analysis of social life and communicative practice. Ethnography is a key vehicle through which theory can be developed. By pairing theoretical and ethnographic works the course offers a grounding in contemporary social theory and explores how ethnography can develop, home, or complicate theory.
- ANTH-E 593 World Fiction and Cultural Anthropology (3 cr.) This course links literature and anthropology as means of understanding culture. Ethnographic writing and world fiction—novels, short stories, poems, myths, folktales—are analyzed for what they reveal about the social, cultural and political lives of peoples around the world. Colonialism, war, socialism, and immigration are among the issues discussed.
- ANTH-E 600 Seminar in Cultural and Social Anthropology (3 cr.) Subject will vary; students can receive credit more than once.

- ANTH-E 601 Basics of Human Sexuality (3 cr.)  
Topics are: (1) introductory lectures on mammalian behavior, anatomy, physiology, reproduction, and sexual development; (2) solitary sexual behavior: orgasm in sleep and masturbation; (3) heterosexual behavior; (4) homosexual behavior; (5) deviance and paraphilias; and (6) social control of sexuality.
- ANTH-E 602 Levi-Strauss: Structuralism in Anthropology (3 cr.) Analysis of structuralist texts and theory. Reading and explicating the writings of Levi-Strauss in order to learn how to interpret concepts and methods of the author and how to use them for further research.
- ANTH-E 603 Modernities: Time, Space, Identity of the Historical Present (3 cr.) This course examines the history of social and cultural theory as organized around the concept of modernity. We examine what, where, and who is implied by the term, where it originates, and how it continues to be contested by contemporary scholars.
- ANTH-E604 Performance and Politics in South India (3 cr) This seminar examines the importance of performance, in the everyday and in the performing arts, to life in the south Indian public sphere. Our focus will be on the southern state of Tamilnadu and the profound influence that Tamil cinema exerts on social and political life in the region.
- ANTH-E 606 Ethnographic Methods (3 cr.)  
P: Must be a graduate student in anthropology or obtain consent of instructor. This course explores ethnographic field methods. We examine the history of ethnography, its critiques, and then move to more practical matters. Students will carry out research exercises (an ongoing ethnography project, options of interview assignments, visual techniques etc.) designed to help students present results using these methodological strategies.
- ANTH-E 608 Thesis Proposal Preparation (3 cr.) Social science and humanities students will learn how to frame research questions in this course. While graduate students will formulate proposals with their doctoral committees, this course will provide the necessary background reading and peer review to prepare a serious proposal that will be competitive in national grant competitions.
- ANTH-E 609 Stigma: Culture, Identity, and the Abject (3 cr.) Stigma theory speaks broadly to the nature of the social relationships that create marked categories of persons, regardless of which particular attributes are devalued. Class examines both theory and at particular cases of stigmatized persons and groups.
- ANTH-E 610 Seminar in Households, Family, and Gender (3 cr.) Asks how basic social units like family and households are socially constructed and maintained. Current literature on social exchange, bargaining, decision-making, and gender. Pressing current issues such as child welfare, equity in economic development, abusive relationships, and consumer choice.
- ANTH-E 611 Colonial and Postcolonial Formations (3 cr.) This course is concerned with the poetics and politics of othering and will focus on the social, epistemological, and imaginative work entailed in the construction and maintenance of difference.
- ANTH-E 612 Anthropology of Russia and East Europe (3 cr.) Explores the contradictory effects of socialism's "fall" through a study of new ethnographies of postsocialist societies. We will connect our inquiries to broad intellectual questions in anthropology and related disciplines, including globalization, social suffering, commodification and cultural identity, ethnicity and nation building, armed conflict, and gender inequalities.
- ANTH-E 613 Global Africa (3 cr.) Through comparative and interdisciplinary discussions we will consider recent ethnographies of the African continent that address contemporary debates over a variety of topics such as theorizing Africa, new urban formations, global migration, extractive economies, and social and cultural production.
- ANTH-E 614 Post-Socialist Gender Formations (3 cr.) An anthropological approach to understanding socialist and post-socialist gender formations in Eastern Europe and the former Soviet Union. Particular attention will be paid to changing discourses of femininity, feminism, masculinity, and sexuality in post-socialist countries.
- ANTH-E 616 The Anthropology of Tourism (3 cr.) This course will explore the phenomenon of tourism from an anthropological perspective. It will look at tourism as linked to consumer culture, transnational movements of people and goods, post-colonial settings, global capitalism, and the politics of ethnic and national identities.
- ANTH-E 617 African Women (3 cr.) Examines the remarkably active roles that African women play in their communities. Follows the themes of autonomy and control of resources, considering both economic resources (such as land, labor, income, and cattle) and social resources (such as education, religion, and political power).
- ANTH-E 618 Global Consumer Culture (3 cr.) Examines processes of globalization and economic and cultural integration, including the origin and spread of mass-consumer society. Topics include the theories of consumption, mass media and advertising, and the relationship between modernity and consumerism. Examples from Africa, Latin America, Asia, and the United States are included.
- ANTH-E 619 American Indian Religion (3 cr.) Introduces religions of the peoples indigenous to North America. Concerns include traditional and contemporary native rituals, mythology, folklore, and symbolism occurring throughout these many cultures, including topics such as art, architecture, cosmology, sustenance, modes, trade, history, gender, and taboos.
- ANTH-E 620 Seminar in Cultural Ecology (3 cr.) Rotating topics in cultural ecology: explores cultural adaptations to specific environments. Emphasis is placed on individual research by students,

discussion of relevant theoretical and methodological issues, and critical evaluation of research.

- ANTH-E 621 Food and Culture (3 cr.) Discusses the political economy of food production, trade, and consumption on a global basis. Gives a cross-cultural and historical perspective on the development of cooking and cuisine in relationship to individual, national, and ethnic identity. Relates cuisine to modernity, migration, and forms of cultural mixing and Creolization.
- ANTH-E 622 Empirical Theory and Methodology: International Forest Resources and Institutions (3 cr.) This course trains participants in the International Forestry Resources and Institutions (IFRI) research programs, which explores how communities influence local forest conditions. Theories of institutional analysis and human dimensions of environmental change underlie the course. Methods include participatory techniques, interviews, forest mensuration. Participants conduct fieldwork in an Indiana community.
- ANTH-E 624 Native American Art (3 cr.) Addresses the principles of Native art and its materials, styles, functions, methods, meanings, and the contexts in which Native art is used. In addition to addressing the principles, cultural, anthropological, and indigenous theories will be explored. Cultural background information will be interwoven in the lectures and discussions.
- ANTH-E 626 Coffee Culture, Production, and Markets (3 cr.) This course considers diverse expressions of "coffee culture" in production, markets, and consumption patterns. It explores the history of coffee production and trade, coffee's impact on international relations, and its implications for environmental change, social justice, and economic development. We will also study local meanings of coffee and its consumption.
- ANTH-E 628 Contemporary Latin American Social Movements (3 cr.) In this course we compare and contrast contemporary activist and grassroots movements throughout the Latin American region. We focus on movements both within the region and within the Latin American diaspora in the US, organized around the rubrics of ethnicity, gender, resources, and environment.
- ANTH-E 634 Networks, Systems, and Flows (3 cr.) This course looks at contemporary theoretical approaches to how knowledge and objects travel. Readings in current theories of circulation address the categories used to conceptualize circulation and distribution, such as networks, systems, and flows.
- ANTH-E 641 Law as Cultural Practice in the United States (3 cr.) Explores modern life in the U.S. through two lenses: contemporary ethnography and recent Supreme Court opinions. Specific topics vary. Examples include the nature of moral traditions; civil rights; family; privacy and choice; the significance of race.
- ANTH-E 644 People and Protected Areas: Theories and Realities of Conservation (3 cr.) Explores major theories and approaches to conservation, from "fortress conservation" to community-based and participatory strategies. It considers the implication of protected areas for local human populations and cultural diversity. It evaluates outcomes and unintended consequences of protected areas, and controversies over the "best" way to protect natural resources.
- ANTH-E 645 Biocultural Medical Anthropology (3 cr.) Focuses on theoretical approaches to understanding the body and notions of health, illness, and disease across cultures. Concentrates on interpretive and critical (political economy) approaches to issues of health and includes critical study of Western biomedicine.
- ANTH-E647 Traveling Texts: The Social Life of Intertextuality (3 cr.) Charts the foundations of the concept of intertextuality in the works of Bakhtin and others. Explores modes of intertextuality in relation to genre and performance. Investigates intertextuality as a social, political and cultural practice in a range of ethnographic settings.
- ANTH-E 648 Power, Subjectivity, and the State (3 cr.) Explores relationships among culture, power, subjectivity, and the state through close readings of theoretical and ethnographic texts. Examines how different theoretical approaches have defined and used these contested terms. Developing insights from social theorists, compares ethnographic efforts to integrate theory with anthropological data.
- ANTH-E 649 Culture, Power, History (3 cr.) Culture, power, and history have been three of the most important concerns and concepts in social and cultural anthropology. This course examines how we have understood and used them and how they have defined and continue to define the field.
- ANTH-E 650 African Systems of Thought (1-3 cr.) Examines approaches to the analysis of systems of thought and their correlates in social action in African societies. Focuses on structural differences among the various systems of ideas used for interpreting experience in different African societies. Attention paid to alterations made in cosmological systems in situations of social change.
- ANTH-E 656 The Anthropology of Race (3 cr.) This course explores race in cultural anthropological perspective. It investigates the history of this idea within the discipline as well as its dissemination in international society. The course explores the play between challenges to race as an intellectual paradigm and the resilient status of race-thinking in society at large.
- ANTH-E 660 Arts in Anthropology Seminar (3 cr.) Anthropology's concern with the arts; cross-cultural study and comparison; the relationships of the arts to other aspects of society and culture; problems of the cross-cultural validity of aesthetics and the interrelationships of the arts. Subject will vary; students can receive credit more than once.



- ANTH-E 661 Seminar in Ethnomusicology I (3 cr.) Techniques of transcription and analysis of the music of non-literate peoples.
- ANTH-E 662 Seminar in Ethnomusicology II (3 cr.) Music as it functions in human society. Role of the musician, concepts underlying production of musical sound, symbolic and other functions of music.
- ANTH-E 663 Exhibiting Cultures: Museums, Exhibitions, and World's Fairs (3 cr.) P: E310 or consent of instructor. Explores the ideas, values and symbols that pervade and shape the practice of exhibiting other cultures. Examines the ways in which museums and other sites of exhibition accord objects particular significances, the politics of exhibitions and display strategies, and the interpretive differences between art, anthropology and other types of museums and institutions that exhibit other cultures.
- ANTH-E 664 Body, Power, and Performance (3 cr.) This course explores performance in relation to social power. Its focus is on the body, and explores the extent to which several interdisciplinary readings on performance theory—largely emerging as they have from Western intellectual traditions—speak to embodied/performative negotiations of social power outside “the West.”
- ANTH-E 670 Seminar in Culture and Personality (3 cr.) Culture seminar for the investigation of advanced problems in culture and personality. Focus will be primarily on developments since 1960, particularly in such areas as the situational determinants of personality, cognitive growth, and adolescent studies.
- ANTH-E 673 Feminist Studies and Ethnographic Practice (3 cr.) Focuses on the impact of feminist theory on ethnographic practice in the fields of anthropology and criminology. We will read key works from the 1980s to the present that exemplify various feminist approaches to the study of culture and society.
- ANTH-E 674 The Anthropology of Human Rights (3 cr.) This course investigates anthropology's theoretical and practical engagements with global social justice. It examines a number of texts central to the development of the notion of human rights, and explores several case studies oriented around a range of historical and contemporary human rights issues.
- ANTH-E 675 Law and Culture (3 cr.) A graduate-level introduction to legal anthropology and law and society scholarship from the perspective of anthropological theory. At the intersection of legal studies, anthropology, and critical race studies, the course examines the role of law in, of, and through culture and society. The course covers both classic and contemporary texts, with an eye to interrogating the logics of legal systems and how people use, abuse, subvert and leverage them in formal institutions and everyday life.
- ANTH-E 677 Performing Nationalism (3 cr.) Throughout the world, and including the United States, nationalism movements draw upon symbolic forms to create unity. These movements may express resistance to domination, or they can be the forces of domination itself. The course examines these processes cross-culturally, focusing on symbolic forms (ritual, song, film, novels, discourse).
- ANTH-E 678 Ritual, Festival, and Public Culture (3 cr.) Examines the ritual genres with anthropological theories of ritual and power. Utilizes performance theory and analysis of production, linking ritual to public culture; explores it as a response to contradiction in social political life that may express resistance or domination. Considers preindustrial and modern societies and sacred and secular events.
- ANTH-E 680 Seminar in Culture Change (3 cr.) P: Three courses in cultural anthropology, including the courses listed under both ethnology and ethnography, and consent of instructor. Research by students under the instructor's supervision, group discussions, and occasional lectures on various problems concerning culture change.
- ANTH-E 681 Seminar in Urban Anthropology (3 cr.) P: E580. Practical work required. Seminar in cross-cultural urban social organization, emphasizing recruitment manifestation of urbanism in various cultural contexts and techniques of investigation.
- ANTH-E 682 Memory and Culture (3 cr.) Students will interrogate the concept of “collective memory,” based on Halbwachs' major contribution in the domain. This social scientific analysis of remembrance as culturally determined will review diverse contexts in which it unfolds (i.e., art, fiction, ritual, architecture, bodily practice, national identity, and politics).
- ANTH-E 687 The Ethnography of Europe (3 cr.) Explores “Europe” as an idea, an identity, and a historical consciousness. Students discuss how European ethnography has acquired a valued status in social anthropology, how it has been instituted as a “cultural area,” and how the discipline constantly revises social, cultural, political, and nationalist boundaries.
- ANTH-E 690 Development and Anthropology (3 cr.) P: E420 or consent of instructor. The theory of development; the way anthropology has been employed in development schemes in Melanesia, Southeast Asia, India, Africa, and elsewhere; the practical problem of relating to development bodies such as AID and Third World governments; the ethical problem of such relationships.
- ANTH-E 692 The United States (3 cr.) Reviews current ethnographic studies of the United States, emphasizing themes of cultural diversity, relationships between individuals and their communities, and the roles of public institutions at local, state, and federal levels.
- ANTH-G 731 Seminar on Contemporary Africa (arr. cr.)
- ANTH-E 636 Humor in Use (3 cr.) Beginning from the premise that humor is a good site for the study

of culture, this course looks at a range of cultural contexts for humor, from staged public performance to private joking, and is primarily concerned with the many and varied social uses to which humor is put.

- ANTH-E 637 Publics (3 cr.) How can we understand the different ways that publics are composed? This course looks at how one analyzes texts, events and social groups when focusing on publics.
- ANTH-E 646 Anthropology of Democracy (3 cr.) Students will analyze the cultural foundations of democracy. The central theme will be the cultural dilemmas involved in exporting democracy. The course relies on ethnographic case studies of legislatures, voting, polling, civil society and other elements democracy theorists have argued are crucial for democracies to succeed.

### History of Anthropology

- ANTH-E 635 French Social Thought: Anthropological Perspectives (3 cr.) Students will read and explicate the writings of six prominent scholars in twentieth-century French social thought (i.e., Durkheim, Mauss, Levi-Strauss, Barthes, Foucault, and Bourdieu). They will discuss these thinkers' contributions to contemporary anthropological theory, and will reflect on the usage of these works in their respective doctoral projects.
- ANTH-H 500 History of Anthropological Thought in the Nineteenth and Twentieth Centuries (3 cr.) Development of nineteenth-century and contemporary anthropological thought, with special reference to methods and theory of scientific anthropology.
- ANTH-H 501 Contemporary Problems and Issues in Ethnographic Theory (3-6 cr.) P: Introductory work in anthropology. Special attention to problems arising from relation of cultural anthropology to other social sciences, such as psychology and history.
- ANTH-H 505 History of Social Anthropology (3 cr.) R: Course in social organization. Seminar on development of social anthropology, with special attention to various "schools" such as functionalism and to major figures from Edward Tylor to Alfred Radcliffe-Brown.
- ANTH-H 506 Modern Development in Social Anthropology (3 cr.) Seminar on development of social anthropology since World War II, with special attention to contributions of influential Cambridge, Manchester, and London "schools."

### Anthropological Linguistics

- ANTH-L 500 Proseminar in Language and Culture (3 cr.) Relationships of language and culture; survey of ethnolinguistics, sociolinguistics, psycholinguistics, Weltanschauung theory, diglossia, bilingualism, and single language society; relevance of linguistic analysis to cultural and social anthropology.
- ANTH-L 501-502 Anthropological Linguistics I-II (3-3 cr.) An introduction to grammatical discovery procedure, including phonetic, phonemic, morphemic, and syntactic analysis, designed to

introduce the student to techniques for use with an unknown language in the field.

- ANTH-L 507 Language and Prehistory (3 cr.) An introduction to the areas of linguistic research that are the most relevant to the work of archaeologists and students of prehistory. Topics include mechanisms of linguistic change, the comparative method, genetic and area relationships among languages, and applications of linguistic reconstruction to the study of ancient cultures and populations.
- ANTH-L 510 Elementary Lakota (Sioux) Language I (3 cr.) Introduction to Lakota (Sioux), an American Indian language spoken on the northern plains of the United States. Focuses on developing elementary reading and writing skills as well as oral fluency in the Lakota language within the context of Lakota culture.
- ANTH-L 511 Elementary Lakota (Sioux) Language II (3 cr.) Introduction to Lakota (Sioux), an American Indian language spoken on the northern plains of the United States. Focuses on developing elementary reading and writing skills as well as oral fluency in the Lakota language within the context of Lakota culture.
- ANTH-L 512 Intermediate Lakota (Sioux) Language I (3 cr.) Study of more complex Lakota grammatical structures, with emphasis on development of active reading, writing, and speaking skills.
- ANTH-L 513 Intermediate Lakota (Sioux) Language II (3 cr.) Study of more complex Lakota grammatical structures, with emphasis on development of active reading, writing, and speaking skills.
- ANTH-L 518 Navajo Language and Culture (3 cr.) Introduction to the Navajo language and an exploration of it as an integral dimension of Navajo culture. Topics include Navajo history, kinship, ritual life, beliefs, and literature, and will be grounded in the appropriate dimensions of Navajo grammar. Provides a case study to review the major issues in the field of language and culture.
- ANTH-L 520 American Indian Languages (3 cr.) Introductory survey of the native languages of the Americas. Topics include history of the study of American Indian languages, genetic and typological classifications, structures of selected languages, the comparative (historical) study of selected language families, and the interplay between language and culture. Emphasizes diversity of New World languages.
- ANTH-L 580 Semiotics and Human Ethnology (3 cr.) Study of the relationship between the general theory of signs and the biological study of behavior under three headings: elaboration of theoretical models, study of animal communication systems as a natural and behavioral science, and their exploitation for the benefit of humankind.
- ANTH-L 600 Topical Seminar in the Ethnography of Communication (3 cr.) Current issues in linguistic anthropology designed to acquaint the student with readings and points of view not covered in

the introductory courses. Topics such as: (1) languages of the world, (2) variation in language, (3) problems in linguistic structure, and (4) culture and communication. May be repeated for credit with change of topic.

- ANTH-L 605-606 Field Methods in Anthropological Linguistics I-II (3-3 cr.)
- ANTH-L 610 Language and Society in Central Eurasia (3 cr.) This seminar explores how language is used to accomplish economic, political, and sociocultural ends in Central Eurasia. Topics covered include multilingualism; regional ethnolinguistic categories; the relationship between language policy and nationalities policy; gendered language; code choice in interactions; the politics of translation; poetics; standardization; and language shift, endangerment, and revitalization.
- ANTH-L 672 Ethnography of Media (3 cr.) This course focuses on what media reveals about culture, power, and social life. By exploring ethnographic approaches to media, this course theorizes concepts such as the idea of community; production and reception; the circulation of cultural forms and public signs; and the complex relationships between interpretation, hegemony, and agency.
- ANTH-L 840 Ethnolinguistic Seminar (1-2 cr.) P: Consent of instructor. Structural statements and arrangements of data in anthropology (including folklore and musicology) and linguistics. May be repeated for credit.

### Archaeology

- ANTH-P 301 Archaeological Methods and Analyses (3 cr.)
- ANTH-P 310 Prehistory of Europe and Asia (3 cr.)
- ANTH-P 314 Early Prehistory of Africa (3 cr.)
- ANTH-P 315 Late Prehistory of Africa (3 cr.)
- ANTH-P 360 North American Archaeology (3 cr.)
- ANTH-P 361 Prehistory of Midwestern United States (3 cr.)
- ANTH-P 365 Prehistory of Western North America (3 cr.)
- ANTH-P 370 Ancient Civilizations of the Andes (3 cr.)
- ANTH-P 371 Prehistory of Lowland South America (3 cr.)
- ANTH-P 380 Prehistoric Diet and Nutrition (3 cr.)
- ANTH-P 425 Zooarchaeology I: Faunal Osteology (5 cr.)
- ANTH-P 426 Zooarchaeology II: Problems in Zooarchaeology (5 cr.)
- ANTH-P 500 Proseminar in Archaeology (3 cr.) Exposes students to the historical and theoretical foundations of contemporary anthropological archaeology. The class is required for all graduate students in archaeology, and is open to other students in anthropology and in other departments

who are interested in the modern practice of archaeology.

- ANTH-P 502 Archaeological Research Design (3 cr.) This seminar addresses the theoretical underpinnings of problem-oriented research, how to frame a research question, the selection of appropriate methods to create data, and how to carry out a research strategy. Topics include finding funding, preparing budgets, negotiating permits, and writing reports.
- ANTH-P 505 History of Theory in Archaeology (3 cr.) Seminar on the development of theoretical constructs and "schools" in prehistoric archaeology. Focus on thought of major figures such as V. G. Childe, J. G. D. Clark, D. Clarke, L. R. Binford, J. C. Gardin, A. C. Renfrew, and W. W. Taylor.
- ANTH-P 506 Laboratory Methods in Archaeology (1-6 cr.) P: P405 or consent of instructor. Specialized training in laboratory procedures and analysis of archaeological materials. Major categories of material culture to be studied include lithics, ceramics, faunal and floral remains. Emphasis is on processing, sorting, identifying, and analyzing material recovered from the previous Field School in Archaeology (P405).
- ANTH-P 507 Archaeological Curation (3 cr.) An examination of the history, methods, legislation, ethics, tools, and technology of archaeological curation. Instruction will include hands-on training in the curation and conservation of material culture and their associated documents (e.g., photographs, digital records). Special attention will focus on the Native American Graves Protection and Repatriation Act of 1990.
- ANTH-P 509 Archaeological Ethics (3 cr.) Explores the professional responsibilities of archaeologists by examining timely issues, such as the differences and, sometimes, conflicts between international law and professional ethics, and between archaeologists and others (e.g., Native Americans, antiquities collectors) who affect and are affected by archaeological work. Some background in archaeology is helpful.
- ANTH-P 541 Archaeology of the Middle East (3 cr.) This course is about the prehistoric cultures of the Middle East. We will examine evidence for daily life, the rise of complex society, early writing, and agriculture, while exploring the impact that archaeology in this region has on our contemporary world.
- ANTH-P 545 Indigenous Archaeology (3 cr.) How do Indigenous people do archeology? How do they protect their sacred sites and places and build and manage knowledge about their pasts? This course takes a global approach to examining such questions. Students examine Indigenous world views and ways that archaeologists and Indigenous communities work together in archeology.
- ANTH-P 575 Food in the Ancient World (3 cr.) We will look at the theoretical and methodological tools that archaeologists use to study food and foodways

in ancient societies from a global anthropological perspective. We explore how studying food and ancient foodways gives us a window into economic, symbolic, historic, and political realities of past peoples.

- ANTH-P 580 Fieldwork in Archaeology. Archaeological work directed toward field techniques: excavation and preservation of materials, surveying, photography, and cataloging. 1 credit hour per full week of fieldwork.
- ANTH-P 600 Seminar in Prehistoric Archaeology (3 cr.) Subject will vary; students may thus receive credit more than once.
- ANTH-P 601 Research Methods in Archaeology (3 cr.) This course introduces the student to the practice of archaeology at a professional level. Although of variable topics, all courses will involve hands-on experience with analysis and techniques of data collection.
- ANTH-P 604 Seminar in Archaeology and Social Context (3 cr.) Required course for students in the archaeology and social context graduate program. The topic is variable, but will always emphasize the social, political, and economic repercussions of archaeological work.
- ANTH-P 645 Pots and People (3 cr.) Pottery has often been utilized to help understand past societies. In this course we take an archaeological approach to understanding how people make, use, and think about pottery. We make our own pots from wild clays and cook a meal in traditional ceramic pots. We consider how experimentation, ethnohistorical data, and anthropological theory can work together to produce insights into past lifeways.
- ANTH-P 663 North American Prehistory through Fiction (3 cr.) Students consider fictionalized accounts of life in prehistoric North America, written by anthropologists, Native Americans, and novelists, as a means to think critically and creatively about the past. They explore the role and place of narrative and imagination in construction of the past and consider how authors utilize available data.
- ANTH-P 666 Women in Civilization (3 cr.) Course looks at empirical and theoretical issues related to the reconstruction of gender identity, household organization, and the division of labor in the development of early states.

## Art and Design

**Eskenazi School of Art, Architecture + Design**

**College of Arts and Sciences**

**Eskenazi School of Art, Architecture + Design E-mails:**

Studio Art: SOADMAIN@indiana.edu

School of Art + Design URL: eskenazi.indiana.edu

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

## Curriculum

### Degrees Offered

Master of Fine Arts (Studio), Master of Science (Apparel Merchandising and Interior Design), Master of Architecture

### Special School Requirements

(See also general University Graduate School requirements.)

### Master of Fine Arts Degree (Studio)

#### Admission Requirements

A bachelor's degree with a fine arts major in studio courses or a B.A. in another field with substantial coursework in studio art. A portfolio of work (color slides or a CD of images – refer to area requirements) showing a high degree of skill and creativity. Fall admission only.

#### Grades

A grade point average of 3.0 (B) must be maintained. Only those Studio Art courses completed with a grade of B or higher will count towards the degree. A student with a G.P.A. of less than 3.0 may be placed on probation.

#### Course Requirements

A total of 60 credit hours at the graduate level, with emphasis in one chosen area of studio work. Only those courses listed in this bulletin have been approved for graduate credit. The distribution of course work, including art history courses where appropriate, to be determined in consultation with the student's major advisor.

The areas of study in studio work are painting, graphic design, digital art, jewelry design and metalsmithing, sculpture, digital art, printmaking, ceramics, fibers, and photography.

#### Thesis

An exhibition of a group of works of art in the chosen studio area preceded by an oral qualifying examination, which will be given at least one semester before the exhibition. The qualifying examinations are designed to test the ability of students to speak articulately about the ideas and directions of their work, their ability to express themselves clearly in analyzing other works of art, and their general knowledge of the history of art.

#### Periodic Review

Student's eligibility to continue in the M.F.A. program will be subject to a periodic review of their progress.

#### Residence

This degree requires a minimum residency of three academic years to be determined in consultation with the advising faculty. Summer residency will not be counted in the fulfillment of this requirement.

### Master of Science (Apparel Merchandising and Interior Design)

Students are not currently being admitted to this program.

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

#### Admission Requirements



## All Students

Minimum of 160 on the verbal section and on at least one other section of the Graduate Record Examination General Test. Minimum undergraduate GPA equivalent to 3.0 on 4.0 scale.

## Foreign Students

Minimum of 573 (paper) or 230 (electronic) or 88-89 (internet) on the Test of English as a Foreign Language.

## Apparel Studies

Eighteen semester hours of undergraduate credit in apparel studies and/or a related field (e.g., economics), 9 of which must be at the junior or senior level.

## Design Studies

Baccalaureate from a CIDA- (interior design) or NAAB- (architecture) accredited program and a portfolio of original work in interior design and/or architecture.

## Course Requirements

### Apparel Studies

A minimum of 34 credit hours, to include M550, a 3-credit seminar or readings course in area of concentration; M598 Research, M599 Thesis, or M597 Project (if project is selected, a total of 37 credit hours is required); and a graduate course in statistics.

### Design Studies

A minimum of 34 credit hours, to include M550, D568, D573, M598 Research, M599 Thesis, a graduate course in statistics, and 12 credits in one or two related area(s). M597 Project is not available to graduate students in interior design.

### Fields of Study

Individualized programs are available in two different areas: apparel studies (including the fields of merchandising, fashion history, and dress studies); and interior design.

### Final Examination

Oral defense of the thesis; for those not electing thesis (apparel studies candidates only), a comprehensive written examination.

## Master of Architecture

### Special Departmental Requirements

(See also general University Graduate School requirements).

### Admissions Requirements

A bachelor's degree, B.S. or B. A. with a major in any subject and from accredited university or college. The degree must include a minimum of 120 semester credit hours. A portfolio of work showing an interest in design, architecture or studio arts.

### Grades

A grade point average of 3.0 (B) must be maintained.

### Course Requirements

A total of 108 hours at the graduate level for the M. Arch. Only those courses listed in this bulletin have been approved for graduate credit. The distribution of course work, including architectural design studio, visual studies, structures, energy and environmental systems, Professional practice, built cultural environment, architectural Design Theory, Coalition and Community Building, Urbanism, and electives have been listed.

### Final Project

Students will be involved in a final project that will show the culmination of their studies.

### Periodic Review

Student's eligibility to continue in the M. Arch program will be subject to a periodic review of their progress.

### Residence

This degree requires a residency of three academic years and a portion of one summer. Any advanced placement in the program will be determined in consultation with the advising faculty.

## Faculty

### Dean of the Eskenazi School of Art, Architecture + Design

Peg Faimon

### Associate Dean Eskenazi School of the School of Art, Architecture + Design

Rowland Ricketts

### Executive Director of Academics of Eskenazi School of the School of Art, Architecture + Design

Deb Christiansen

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Herman B Wells Professor

Arthur Liou\*

### President's Outstanding Faculty Awardees

William Itter\* (Emeritus), Bonnie Sklarski\* (Emerita)

### Rudy Professor

Robert Barnes\* (Emeritus)

### Ruth N. Halls Professors

Jeffrey A. Wolin\* (Emeritus)

James Nakagawa

### Professors

Nicole Jacquard\*, Minjeong Kim, Sharron J. Lennon, Arthur Liou\*, James Nakagawa, Rowland Ricketts\*

### Associate Professors

Heather Marie Akou, Margaret Dolinsky\*, Martha MacLeish\*, Eve Mansdorf\*, Tim Mather\*, C. Thomas Mitchell, Bryan Orthel, Kennon Smith, Malcolm Mobutu Smith, Jennifer Riley, Andrea Stanislav, Tracy

Templeton\*, Caleb Weintraub\*, Jiangmei Wu, T. Kelly Wilson

### Assistant Professors

Justin Bailey, Elizabeth M Claffey\*, Ran, Huang, Jee Yea Kim, Sarah Martin, Daniel Martinez, Ahmed Ozsever, Etien Santiago, Jooyoung Shin

### Senior Lecturers

Rick Bomberger, Carissa Carman, Deb Christiansen, Mary Embry, Miyoung Hong, Tim Kennedy, Marleen Newman, Jonathan Racek, Janis Shaffer

### Academic Specialists

Brittain Brewer, Jonathan Chase Gamblin, Ryan Mandell, Kelly Richardson, Betsy Stirratt

### Faculty Emeriti

Robert Barnes\*, Reed Benhamou, Edward Bernstein\*, Paul Brown\*, Wendy Calman\*, Thomas Coleman\*, Barry Gealt\*, John Goodheart\*, William M. Itter\*, Randy Long\*, Rita Frances Newberry, Kathleen Rowold\*, Bonnie Sklarski\*, Joan Sterrenburg\*, Jeffrey Wolin\*

### Courses

#### Eskenazi School of Art, Architecture + Design College of Arts and Sciences

### Studio Art

#### Ceramics

- SOAD-S 560 Graduate Topics in Ceramics (3 cr.) Further practice in advanced ceramic techniques. Instruction through lectures, demonstrations, and critiques. Topics vary by instructor and semester.
- SOAD-S 561 Graduate Ceramics (1-12 cr) Studio techniques: advanced practice in the use of clay for expression or functional ceramics purposes. Theory: clay and body compositions glaze; materials, oxides, glaze compositions and calculation, firing procedures.
- SOAD-S 564 Basic Glaze Composition (3 cr.) An investigation of the effect of high-oxide glaze materials and their mixtures in terms of fusibility, transparency temperatures on single and multiple opacity, surface, and other qualities. Will include much weighing, applying, and firing of glaze test batches. Also blending systems, glaze calculations, and compositional charting.
- SOAD-S568 Graduate History of Ceramics (3 cr.) Emphasis on the historical development of pottery in individual cultures, as well as how one culture's pottery has influenced another's.
- SOAD-S 569 M.F.A. Ceramics Seminar (1 cr.) P: Discussions, critiques, and research projects in ceramic art. Required each semester for M.F.A. candidates in ceramics.
- SOAD-S 760 Ceramics Adv Studio Projects (1-6 cr.) Independent study in ceramics. Faculty and student consultations will determine the project and the credit hours to be assigned. SOAD-S 860 M.F.A. Thesis in Ceramics (1-12 cr.) Final semester of MFA program and creation of Thesis Exhibition.

### Digital Art

- SOAD-S 510 Graduate Topics in Digital Art (3 cr.) Advanced opportunity for students to investigate the computer as an interactive tool in the process of art making while examining aesthetics and processes of major artists working in this field. Provides the opportunity for exploration of the computer's potential use in the art work of each class member.
- SOAD-S 511 Graduate Digital Art (1-12 cr.) Through advanced studio projects in digital art, the student will create a body of work involving experimentation with technology incorporating installation, multimedia, networks, virtual environments, and/or portable media. Topics of relevance to contemporary digital art will be considered, such as interaction, time-based media, location, and virtuality.
- SOAD-S 519 MFA Digital Art Seminar (1 cr.) Investigates the relationship between art, aesthetics, and technology. Topics can include virtual environments, screen-media, sound art, time-based media, networked art, and locative media, as well as related history, criticism, and theory. Coursework includes readings, discussions, and research-based projects, papers, or presentations.
- SOAD-S 710 Digital Art Advanced Studio Projects (1-6 cr.) Independent study in computer art. Faculty and student consultation will determine project and credit hours.
- SOAD-S 810 M.F.A. Thesis in Digital Art (1-12 cr.) Final semester of M.F.A. program and creation of Thesis Exhibition.

### Drawing

- SOAD-S500 Graduate Topics in Drawing (3 cr.) Advanced drawing for graduate students.
- SOAD-S 501 Graduate Drawing (1-12. cr.) Not currently offered. Concentrated and advanced work in drawing for graduate students in the School of Fine Arts. Advanced problems in drawing for graduate fine arts majors. Work is done under supervision in the classroom or independently at the discretion of the instructor.
- SOAD-S 503 Anatomy for the Artist (3 cr.) Intensive lecture/studio course describing all of the bones and muscles of the body. The emphasis is on joint movement and proportion. The areas of the body are divided into 3-D mass conception, bone and muscle description, and joint description. Students draw from the skeleton, plaster cadaver casts, and the human figure.
- SOAD-S509 Graduate Drawing Seminar (1-3 cr.) Intensive directed study in Painting. For students admitted to the M.F.A. program in Painting.

### Graphic Design

- SOAD-S 550 Graduate Topics in Graphic Design (3 cr.) Professional problem solving in graphic design. Using a variety of mediums to communicate messages, students apply processes from printing to multimedia as appropriate for directed projects.
- SOAD-S 551 Graduate Graphic Design (1-12. cr.) Graphic design as an integral element of all visual communication media. Self-defined and assigned study to assure as wide as possible exposure to the problem-solving process.

- SOAD-S552 Graphic Design for Graduate Non-Majors (3 cr.) This studio course provides an introduction to the practice of visual communication for graduate students with no prior design background. Topics will include visual design theory, creative and technical processes, form giving, aesthetics, and typography. Content will be presented through lectures and discussion, and demonstrated through studio exercises.
- SOAD-S 559 Graphic Design Seminar (1 cr.) Provides background on major graphic design movements, the design of the alphabet and type styles, the use of tools (printing press, woodcut, engraving, camera, airbrush, computer). Social and political forces such as industrial development and nationalism will be considered. Writings of theorists and historians will be reviewed.
- SOAD-S 750 Graphic Design Adv Studio Projects (1-6 cr.) Independent study in graphic design. Faculty and student consultations will determine the project and the credit hours to be assigned.
- SOAD-S850 MFA Thesis in Graphic Design (1-12 cr.) Final semester of M.F.A. program and creation of Thesis Exhibition. Open to M.F.A. students in graphic design only.

### **Metalsmithing and Jewelry Design**

- SOAD-S 580 Graduate Topics in Metalsmithing and Jewelry Design (3 cr.) Improves and expands knowledge and skills in metalsmithing and jewelry design through special topics utilizing advanced techniques, tools, and materials.
- SOAD-S 581 Graduate Metalsmithing and Jewelry Design (1-12 cr.) Guidance directed toward developing a personal direction of creative expression, artistic aesthetic, and art philosophy, ranging in materials, techniques and subjects.
- SOAD-S 589 Graduate Seminar in Metalsmithing and Jewelry Design (1 cr.) Weekly meetings include; critiques of individual research, oral and written study, and special projects. Primarily for students enrolled in the Metals MFA program.
- SOAD-S 780 Metalsmithing Adv Studio Projects (1-6 cr.) Directed graduate-level independent study in metalsmithing and jewelry design. Requires authorization of the instructor.
- SOAD-S 880 M.F.A. Thesis in Metalsmithing and Jewelry Design (1-12 cr.) Final semester of M.F.A. program and creation of Thesis Exhibition. Open to M.F.A. students in metalsmithing and jewelry design only. Requires authorization of the instructor.

### **Painting**

- SOAD-S 530 Graduate Topics in Painting (3cr.) Advanced course in painting for graduate students.
- SOAD-S 531 Graduate Painting (1-12 cr.) Intensive directed study in Painting. For students admitted to the M.F.A. program in Painting.
- SOAD-S 539 Graduate Painting Seminar (1 cr.) Weekly critical review of student work. (Open to M.F.A. painters only.)
- SOAD-S 730 Painting Adv Studio Projects (1-6 cr.) Independent study in painting. Faculty and student

consultations will determine the project and the credit hours to be assigned.

- SOAD-S 830 M.F.A. Thesis in Painting (1-12 cr.) Final semester of M.F.A. program and creation of Thesis Exhibition. Open to M.F.A. students in painting only. Requires authorization of the instructor.

### **Photography**

- SOAD-S590 Graduate Topics in Photography II (3 cr.) Emphasizes advanced conceptual and technical development in digital and traditional photographic media and the expansion of creative possibilities. Topics vary. May include topics as alternative processes, advanced Photoshop, documentary, artist book making, photographic theory, installation art, and darkroom practice.
- SOAD-S 591 Graduate Photography (1-12cr) Intensive directed study in photography. For students admitted to the M.F.A. program in photography.
- SOAD-S 599 Graduate Photography Seminar (1 cr.) Primarily for graduate students in photography. Oral and written study of significant topics in the history, criticism, and theory of photography. Topic varies.
- SOAD-S 790 Photography Adv Studio Projects (1-6 cr.) Independent study in photography. Faculty and student consultations will determine the project and the credit hours to be assigned.
- SOAD-S 890 M.F.A. Thesis in Photography (1-12 cr.) Final semester of M.F.A. program and creation of Thesis Exhibition. Open to M.F.A. students in photography only. Requires authorization of the instructor.

### **Fibers**

- SOAD-S 520 Graduate Topics in Fibers (3 cr.) A continued exploration of textile-related materials, processes, and concepts with an emphasis on independent investigation and production.
- SOAD-S 521 Graduate Fibers (1-12cr.) Intensive directed study in Fibers. For students admitted to the M.F.A. program in Fibers.
- SOAD-S529 Graduate Fibers Seminar (1 cr.) Primarily for graduate students in Fibers. Oral and written study of significant topics in the history, criticism, and theory of fiber arts.
- SOAD-S 720 Fibers Adv Studio Projects (1-6 cr.) Directed graduate-level independent study in Fibers. Requires authorization of the instructor.
- SOAD-S 820 M.F.A. Thesis in Fibers (1-12 cr.) Final semester of M.F.A. program and creation of Thesis Exhibition.

### **Printmaking**

- SOAD-S 541 Graduate Printmaking (1-12 cr.) Intensive directed study in printmaking. For students admitted to the M.F.A. program in printmaking.
- SOAD-S 542 Graduate Intaglio (3. cr.) Advanced work in intaglio for graduate students.
- SOAD-S 543 Graduate Lithography (3. cr.) Advanced work in lithography for graduate students.

- SOAD-S 544 Graduate Silkscreen (3 cr.) Advanced work in silkscreen for graduate students.
- SOAD-S 545 Relief Printmaking Media (3 cr.) Advanced work in relief media for graduate students.
- SOAD-S 549 Graduate Printmaking Seminar (1 cr.) Deals with both theoretical and practical issues in contemporary art. Discussions will be based on selected readings, including relevant suggestions from the participants. Students will make slide presentations on the influences and development of their work as well as a collaborative project.
- FINA-S 740 Printmaking Adv Studio Projects (1-6 cr.) Directed graduate-level independent study in printmaking.
- SOAD-S 840 Thesis in Printmaking (1-12 cr.) Final semester of M.F.A. program and creation of Thesis Exhibition.

### **Sculpture**

- SOAD-S 570 Graduate Topics in Sculpture (3 cr.) Advanced work in sculpture for qualified students working in the chosen materials. The course focuses on the development of ideas as manifest in sculptural form.
- SOAD-S 571 Graduate Sculpture (1-12 cr.) Intensive directed study in Sculpture. For students admitted to the M.F.A. program in sculpture.
- SOAD-S 579 Graduate Sculpture Seminar (1 cr.) Group critiques sessions and readings of contemporary sculptural issues. Students will engage in activities to prepare them for professional practice as sculptors. These activities will include preparing for job applications and proposals for commissions, residencies, or other professional activities.
- FINA-S 770 Sculpture Adv Studio Projects (1-6 cr.) Independent study in sculpture. Faculty and student consultations will determine the project and the credit hours to be assigned.
- SOAD-S 870 MFA Thesis in Sculpture (1-12 cr.) Final semester of M.F.A. program and creation of Thesis Exhibition. Open to M.F.A. students in Sculpture only. Requires authorization of the instructor.

### **General**

- SOAD-U 500 Contemporary Art Issues and Cultural Themes (3 cr.) Focuses on modern and recent art movements. Connections between ideas, theories and practice as they pertain to the work of contemporary artists.
- SOAD-U 590 Seminar in the Visual Arts (2 cr.) Examination of issues posed by recent art and criticism. Topics vary with the instructor and year. Consult iGPS for current information on content.
- SOAD-U 695 AI Training Seminar (1 cr.) Topics include effective communication of ideas about the visual arts; health and safety regulations relevant to studio courses; grading; critiquing; and a number of course-specific teaching issues. Students also will make practice teaching presentations, which will be reviewed by the class.

- SOAD-U 501 Special Topics in Studio Art (1-3 cr.) Selected topics in studio art not ordinarily covered in other departmental courses.
- SOAD-U 700 Advanced Studio Projects (1-12 cr.) Reserved for graduate studio independent study, usually outside of the area concentration. Faculty and student consultations will determine the project and credit hours to be assigned.
- SOAD-G 800 M.F.A. Thesis (arr. cr.) This course is eligible for a deferred grade.
- SOAD-G 901 Advanced Research (6 cr.) Available to graduate students who have completed all course requirements for their doctorates, have passed doctoral qualifying examinations, and have the requisite number of degree credit hours, this course provides the advanced research student with a forum for sharing ideas and problems under the supervision of a senior researcher.

### **Apparel Merchandising and Interior Design**

- SOAD-M 504 International Textiles and Apparel Trade (3 cr.) P: Graduate standing. Research and analysis of economic issues that affect the development of textiles and apparel at the global level. Critical analysis of labor and development theories and international relations will be included. Global sourcing, production, and import/export strategies will be addressed.
- SOAD-F 506 Dress Studies: Theory and Analysis (3 cr.) P: Graduate standing. In-depth study and critical analysis of classic and modern fashion theories, with emphasis placed on postmodern fashion theory development. Students are expected to make significant progress toward new theoretical development of fashion theory.
- SOAD-M 510 Apparel Entrepreneurship (3 cr.) P: Graduate standing, AMID H413 or equivalent. R: Accounting and research methods. Research and development of individualized plans for decision making, problem solving, and opening a small apparel-related retail business. Developing, implementing, and analyzing entrepreneurial strategies; financial goals; methods of accounting and control; and merchandising, operation, and management skills.
- SOAD-F 511 Dress Studies: Behavioral Analysis (3 cr.) P: Graduate standing. Theories from social psychology will be employed in research examining clothing and appearance and their effects on the self and others.
- SOAD-M 512 Recent Developments in Textiles (3 cr.) New developments in textiles; analysis of quality control and production standards; evaluation of current problems.
- SOAD-M 519 Special Problems: Textiles and Apparel (1-3 cr.) P: Consent of department. Independent work in analysis and interpretation of various aspects of textiles and apparel field. Topic may vary. May be repeated for a maximum of 6 credits.
- SOAD-M 550 Research Methods in Apparel Merchandising and Interior Design (3 cr.) Evaluating and understanding of research; identifying needed research; planning a research problem.



- SOAD-D 567 Trends in Interior Design (3 cr.)  
P: H475 or H476 or equivalent, or consent of department. Changing patterns in interior design.
- SOAD-D 568 Contemporary Issues in Design (3 cr.)  
P: Graduate standing. Contrast between traditional and emerging views in interior design.
- SOAD-D 573 Special Problems: Interior Design (1-3 cr.) P: Consent of department. Independent work in advanced interior design problems. May be repeated for a maximum of 6 credits.
- SOAD-D 575 Diverse Problems in Design I (3 cr.)  
P: Graduate standing. Research and design of nonresidential interior environments.
- SOAD-D 576 Diverse Problems in Design II (3 cr.)  
P: Graduate standing. Design of interior spaces that enhance individual needs and lifestyles.
- SOAD-M 580 Seminar in Consumer Issues (3 cr.)  
P: Consent of department. Varying topics dealing with consumer interests and family economics.
- SOAD-M 590 Workshop in Apparel Merchandising and Interior Design (1-3 cr.) P: Consent of department. Workshop in current issues, trends, programs. Emphasis varies and is announced in workshop title. May be repeated for a maximum of 6 credits.
- SOAD-M 597 Projects (1-4 cr.) P: H550 and consent of department. Individual application of student's area of study to the solution of a problem under supervision of an approved advisor; not open to students who select a thesis program.
- SOAD-M 598 Research (1-3 cr.) P: H550, a course in statistics, and consent of department. Independent investigation in area of interest under supervision of advisor. May be repeated for a maximum of 6 credits.
- SOAD-M 599 Thesis (1-6 cr.) P: H550 or equivalent; one course in statistics. Individual research under supervision of an approved advisor.

## Architecture

- Z-501 Architectural Studio 1 (6 cr.) This course is the fundamental design studio. A series of interrelated hands-on exercises is the basis for teaching students the fundamentals of architectural design. Students focus on application of design fundamentals, acquisition of analytical and drawing skills, and understanding of computer technology, basic drawing programs, and digital fabrication.
- Z 502 Architectural Studio 2 (6 cr.) This intermediate studio focuses on critical inquiry and design creativity through projects incorporating issues of technology, materiality, abstraction, tectonics, precedent and theory. A broad array of issues in design including: sustainability, precedent, and the social/urban context will be considered. Projects will be small to medium in scale and scope.
- Z-511 Visual Studies Studio 1 (6 cr) This course is the first introductory level visual studies studio for the student of architecture. Students in this sequence will study beginning aspects of expression in two and three dimensional experimentation.
- Z- 512 Visual Studies Studio 2 (6 cr) This course is the second introductory level visual studies studio for the student of architecture. Students in this sequence will study more complex aspects

of expression in two and three dimensional experimentation.

- Z-521 Structures 1 (3 cr) Z521 Structures 1 is the first course in a two part sequence focusing on the study of statics and strength of materials for architects. Students will investigate the behavior of structural systems and materials through design exercises, case studies, and load testing of models.
- Z-522 Structures 2 (3 cr) Z522 Structures 2 is the second course in a two part sequence focusing on the study of advanced statics and strength of materials for architects. Students will investigate the behavior of advanced structural systems and materials through design exercises, case studies, and load testing of models.
- Z-531 Texts and Contexts in Architecture 1 (3 cr)  
This course consists of the first of four courses introducing concepts of architectural design through study of precedents and contexts. Lectures and field studies will lead students to develop visual and written skills of analysis and synthesis and apply them directly to small scale projects in parallel architectural studios.
- Z-532 Texts and Contexts in Architecture 2 (3 cr) Built Cultural Environment 2 is the second of four courses introducing concepts of architectural design through study of precedents. Combinations of lectures and field studies will lead students to develop visual and written skills of analysis and synthesis and apply them directly to medium scale projects in parallel architectural studios.
- Z-600 Summer Architectural Studio (6 cr) This intensive program introduces students to the rich intersections of architectural, artistic, urban, and cultural practices of both historical and contemporary cities. Students learn the principles and methods of exploring architectural problems unique to the environments chosen for study. The studio focus and location will vary by section and year.
- Z-601 Architectural Studio 3 (6 cr) This is the third architectural studio in the core sequence and focuses on advanced critical inquiry and design creativity through projects incorporating issues of technology, materiality, abstraction, tectonics, precedent and theory. A broad array of issues in design including: sustainability, precedent, and the social/urban context will be considered..
- Z-602 Architectural Studio 4 (6 cr) This is the fourth architectural studio in the core sequence and focuses on advanced critical inquiry and design creativity. Projects incorporate complex issues of technology, materiality, abstraction, tectonics, precedent and theory. A broad array of issues in design including: sustainability, precedent, and the social/urban context will be considered..
- Z-611 Visual Studies Studio 3 (6 cr) Visual Studies 3 is the first of two intermediate level visual studies studios for the student of architecture. The sequence delves into advanced experimentation in two and three dimensional work. Work may relate to the design studio project.
- Z-612 Visual Studies Studio 4 (6 cr) Visual Studies 4 is the second of two intermediate level visual studies studios for the student of architecture. The

sequence delves into advanced experimentation in two and three dimensional work. Work may relate to the design studio project.

- Z-631 Texts and Contexts in Architecture 3 (3 cr) Built Cultural Environment 3 is the third of four courses introducing concepts of architectural design through study of precedents. Combinations of lectures and field studies will lead students to develop visual and written skills of analysis and synthesis and apply them directly to large scale projects in parallel architectural studios.
- Z-632 Texts and Contexts in Architecture 4 (3 cr) Built Cultural Environment 4 is the final course introducing concepts of architectural design through precedent study. Field studies are the primary focus. The course will be the analytical and synthetic component of the Nomadic Studio and outcomes will become the basis for developing the Capstone Studio project.
- Z-641 Energy and Environmental Systems 1 (3 cr) Z641 is the first in a two-part sequence focusing on NAAB required topics including: thermal evaluation, lighting, acoustics, water and waste, electrical, communication, vertical transportation, and security and fire protection systems. The course examines sustainability, scientific principles and a range of technologies and analyses for designing indoor and outdoor environments.
- Z-642 Energy and Environmental Systems 2 (3 cr) Z642 is a continuation of Z641 and focuses on similar topics of energy, environmental systems, and the environment and sustainability. Together the two courses will meet the requirements for NAAB accreditation and will function together to cover all required topics.
- Z-651 Coalition and Community Building (3 cr) Coalition and Community Building will teach the student of architecture how to engage communities through a unique stakeholder engagement process. Students will learn the benefits of developing a common language and a common approach for solving complex community problems.
- Z-661 Professional Practice (3 cr) This course will introduce students of architecture to the complexities of professional practice. It will explore education and licensure, roles of the architect, ethical and legal standards, the economics of the office, project design and delivery, alternate careers and global and local markets.
- Z-701 Architectural Studio 5 (6 cr) This studio will cover variable topics in advanced architectural inquiry addressing issues of culture, technology, context, and meaning in the exploration of architectural form.
- Z-702 Architectural Studio 6 (6 cr) The Nomadic Studio focuses on advanced critical inquiry and design. Projects are based on global and regional intersections between architectural and urban design and relate to a broad array of contemporary issues. Students have the option to define an independent capstone project.
- Z-711 Visual Studies Studio 5 (6 cr) Visual Studies 5 is the first of two advanced level courses where the student is expected to initiate a level of self-directed work. The student will explore themes and subjects in a variety of mediums that relate to their exposure to the urban, historical and architectural contexts of their Nomadic Studio.
- Z-712 Visual Studies Studio 6 (6 cr) Visual Studies 6 is the final advanced level of self-directed study. Ideas and themes explored in this studio are reviewed by faculty and visiting fellows and are expected to be related to the comprehensive capstone architectural project.
- Z-771 Design of the City (3 cr) This course is part of the Nomadic Studio sequence and will focus on the study of urban form and culture. Examples and precedent studies, current issues of urban form in relation to city-making, social structure, and physical design will be discussed and analyzed in relation to the design studio.
- Z-781 Architectural Design Theory (3 cr) The course focuses on discussion of major concepts and theories of architectural design discourse both past and present. The course will terminate in a discussion of the challenges of architectural theory as it relates to urbanism, architecture, design, and art in the global context of the modern world.
- Z-800 M Arch Advanced Studio Projects (1-6 cr) Reserved for M. Arch independent study; Faculty and student consultations will determine the project and credit hours to be assigned.
- Z-801 Special Topics in the Built Cultural Environment (3 cr) This is an advanced variable topics course focusing on the analysis of current trends in design theory and the analysis and critique of contemporary architecture and the present day urban environment.
- Z-802 Special Topics in Energy, the Environment, and Sustainability (3 cr) This is an advanced variable topics course focusing on topics associate with the study of energy, the environment, and sustainability as these topics relate to the built environment and architectural design.
- Z-803 Special Topics in Structures and Strength of Materials (3 cr) This is an advanced variable topics course focusing on topics allied with emerging technologies in structural design, computer analysis, and the development of new materials and systems related to architectural design.
- Z-804 Special Topics in Coalition and Community Building (3 cr) This is an advanced variable topics project based course using the case study method to focus on topics allied with community building and stakeholder development.
- Z-805 Special Topics in Professional Practice (3 cr) This is an advanced variable topics course using the case study method to focus on topics allied with real estate development, office structure and advanced legal issues of construction, the office and the field of forensics in architecture.
- Z-806 Special Topics in Urban Design (3 cr) This is an advanced variable topics, project-based course using focusing on topics allied with urban design and site development. The case study method will be used to discuss all aspects of urban design.
- Z-807 Special Topics in Theory and Critique (3 cr) This is an advanced variable topics course using

the case study method to focus on topics allied with theory and criticism across the disciplines of architecture, art and design.

- Z-808 Special Topics in Fabrication and Digital Design (3 cr) This is an advanced variable topics course focusing on topics related to fabrication and digital design. This is a project based class.
- Z-809 Special Topics in Digital Software and Architecture (1-3 cr) This is an advanced variable topics course focusing on topics related to digital software for architecture.

## Arts Administration

**O'Neill School of Public and Environmental Affairs**

Departmental URL: [www.artsadmin.indiana.edu](http://www.artsadmin.indiana.edu)

### Curriculum

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Degrees Offered

Master of Arts in Arts Administration (MAAA), Dual Master of Public Affairs and Master of Arts in Arts Administration (MPA-MAAA), Dual Master of Arts in Arts Administration and Master of Arts in Folklore and Ethnomusicology (MAAA-MAFE), Dual Master of Arts in Arts Administration (Indiana University) and Master of Museum and Heritage Studies (Australian National University) (MAAA-MMHS)

### Master of Arts in Arts Administration

Designed to train students for leadership roles in the arts and the creative industries, across all genres and sectors.

### Admission Requirements

An undergraduate degree with an outstanding academic record and commitment to the arts. Graduate Record Examination General Test is no longer required. Fall enrollment only.

### Course Requirements

A minimum of 45 credit hours including core courses, electives, experiential learning, and Capstone.

### Intro Course

- Y502 Introduction to Arts Administration and Organizational Behavior (3 cr.)

### Skill-Building Courses

- Y515 Financial Management for the Arts (3 cr.)
- Y530 Audience Development and Marketing the Arts (3 cr.)
- Y558 Fund Development for Nonprofit Organizations (3 cr.)

### Theory and Survey Courses

- Y504 Arts Organizations in the Public and Private Sectors (3 cr.)
- Y562 Legal Issues in the Arts (3 cr.)

### Management and Policy Courses

3 credits in Performing Arts selected from:

- Y505 Programming the Performing Arts (3 cr.)
- Y508 Performing Arts Organization Management (3 cr.)
- Y511 Performing Arts Center Management (3 cr.)

3 credits in Visual Arts selected from:

- Y506 Curating in Galleries and Museums (3 cr.)
- Y525 Museum Management (3 cr.)

3 credits in Arts and Cultural Policy selected from:

- Y551 Cultural Planning and Urban Development (3 cr.)
- Y559 Public Policy in the Arts (3 cr.)

### Electives

9 credit hours of electives to be selected in consultation with the Masters Program Office advising staff and the Faculty Program Director (see Courses tab for suggested acceptable courses).

### Capstone

- Y650 Seminar in Arts Administration (3 cr.)

### Experiential Learning

- Y550 Practicum in Arts Administration (3 cr.)
- Y750 Internship in Arts Administration (3 cr.)

Three different 50-hour arts management projects are completed throughout the three semesters of coursework. Students can register for all three credits at once or 1 credit per semester, so long as the total number of credits equals three.

### Grades

A grade point average of 3.0 (B) or higher must be maintained.

### Dual Master of Public Affairs and Master of Arts in Arts Administration (MPA-MAAA)

Students can pursue the unique opportunity of earning a Master of Arts in Arts Administration in combination with a Master of Public Affairs with a concentration in Nonprofit Management.

MPA-MAAA dual degree students will develop skills in quantitative analysis, public sector management, budgeting, and public policy while gaining expertise in arts management, marketing, law, and cultural policy. This degree is designed to be completed in five semesters plus a summer or semester of experiential learning.

### Admission Requirements

Students must apply for admission to both the MPA and MAAA programs through the O'Neill School of Public and Environmental Affairs (SPEA). An undergraduate degree with an outstanding academic record and commitment to the arts. Graduate Record Examination General Test is no longer required.

### Course Requirements

A minimum of 63 credit hours including:

### MPA Core Courses

- V502 Public Management (3 cr.)
- V506 Statistical Analysis for Effective Decision Making (3 cr.)
- V517 Public Management Economics (3 cr.)
- V540 Law and Public Affairs (3 cr.)
- F560 Public Finance and Budgeting (3 cr.)

### MAAA Core Courses

- Y502 Introduction to Arts Administration and Organizational Behavior (3 cr.)
- Y530 Audience Development and Marketing the Arts (3 cr.)
- Y562 Legal Issues in the Arts (3 cr.)

### Management and Policy Courses

3 credits in Performing Arts selected from:

- Y505 Programming the Performing Arts (3 cr.)
- Y508 Performing Arts Organization Management (3 cr.)
- Y511 Performing Arts Center Management (3 cr.)

3 credits in Visual Arts selected from:

- Y506 Curating in Galleries and Museums (3 cr.)
- Y525 Museum Management (3 cr.)

3 credits in Arts and Cultural Policy selected from:

- Y551 Cultural Planning and Urban Development (3 cr.)
- Y559 Public Policy in the Arts (3 cr.)

### Nonprofit Management Courses

- N521 The Nonprofit and Voluntary Sector (3 cr.)
- Y558 Fund Development for Nonprofit Organizations (3 cr.)

### Financial Management Courses

3 credits selected from:

- F526 Financial Management for Nonprofit Organizations (3 cr.)
- Y515 Financial Management for the Arts (3 cr.)

### Capstone/Additional Management Courses

Choose one of the following combinations:

- N525 Management in the Nonprofit Sector (3 cr.)
- V600 Capstone in Public and Environmental Affairs (3 cr.)

Or:

- Y504 Arts Organizations in the Public and Private Sectors (3 cr.)
- Y650 Seminar in Arts Administration (3 cr.)

### Electives

9 credit hours of electives to be selected in consultation with the Masters Program Office advising staff (see Courses tab for suggested acceptable courses).

### Experiential Learning

- Y550 Practicum in Arts Administration (3 cr.)
- Y750 Internship in Arts Administration (3 cr.)

Three different 50-hour arts management projects are completed throughout the three semesters of coursework. Students can register for all three credits at once or 1 credit per semester, so long as the total number of credits equals three.

### Grades

A grade point average of 3.0 (B) or higher must be maintained.

### Dual Master of Arts in Arts Administration and Master of Arts in Folklore and Ethnomusicology (MAAA-MAFE)

Study for these two degrees can be combined for a total of 60 credit hours rather than the 75 credit hours required for the two degrees taken separately. Students take at least 36 graduate credit hours in arts administration, and at least 24 credit hours in folklore and ethnomusicology. This program is designed to be completed in five semesters.

### Admission Requirements

Students must be admitted by both programs to pursue the dual degree. Both degrees must be awarded simultaneously. A good undergraduate record in any of the humanities or social sciences will be acceptable for admission to graduate study in folklore and ethnomusicology. An undergraduate degree with an outstanding academic record and commitment to the arts. Graduate Record Examination General Test (verbal and quantitative portions required).

### Course Requirements

A minimum of 60 credit hours including:

### MAFE Core Courses

- F532 Public Practice in Folklore and Ethnomusicology (3 cr.)

Two of the following:

- F516 Folklore Theory in Practice (3 cr.)
- F517 History of Folklore Study (3 cr.)
- E522 The Study of Ethnomusicology (3 cr.)
- E714 Paradigms of Ethnomusicology (3 cr.)

### MAFE Fieldwork

One of the following:

- F523 Fieldwork in Folklore/Ethnomusicology (3 cr.)
- F525 Readings in Ethnography (3 cr.)

### MAFE Practicum

One of the following:

- F802 Traditional Arts Indiana (3 cr.)
- F803 Practicum in Folklore/Ethnomusicology (3 cr.)

### MAAA Core Courses

- Y502 Introduction to Arts Administration and Organizational Behavior (3 cr.)
- Y504 Arts Organizations in the Public and Private Sectors (3 cr.)
- Y515 Financial Management for the Arts (3 cr.)
- Y525 Museum Management (3 cr.)



- Y530 Audience Development and Marketing the Arts (3 cr.)
- Y551 Cultural Planning and Urban Development (3 cr.)
- Y558 Fund Development for Nonprofit Organizations (3 cr.)
- Y562 Legal Issues in the Arts (3 cr.)

### MAAA Experiential Learning

- Y550 Practicum in Arts Administration (3 cr.)
- Y750 Internship in Arts Administration (3 cr.)

### Capstone Requirement

One of the following:

- Y650 Seminar in Arts Administration (3 cr.)
- F850 Thesis (arr. cr.)

### Electives

12 credit hours of electives to be selected in consultation with academic advisor

### Reading Proficiency

Reading proficiency in one modern foreign language

### Grades

A grade point average of 3.0 (B) or higher must be maintained for the MAAA department. The MAFE department will accept no course for credit toward a degree in which the grade is lower than a B– (2.7). All students must earn a B (3.0) or better in the required department courses and maintain a grade point average of at least 3.2.

### Dual Master of Arts in Arts Administration and Master of Museum and Heritage Studies (MAAA-MMHS) with Australian National University (ANU)

The MAAA program at IU provides the unique opportunity to articulate with Australian National University (ANU) to complete a dual degree with a Master of Museum and Heritage Studies (MMHS). These degrees draw on strong connections with cultural and collecting institutions in Australia and the United States. The double degree aims to prepare students for an innovative career in both Museum Curatorial practice and Arts Administration. This dual degree program is designed to be completed in two years with one year at IU and one year at ANU.

### Admission Requirements

Students must be admitted by both programs to pursue the dual degree. Both degrees must be awarded simultaneously. An undergraduate degree with an outstanding academic record and commitment to the arts. Graduate Record Examination General Test (verbal and quantitative portions required). Cognate disciplines in ancient history, anthropology, archaeology, classics, creative arts, English, environmental history, environmental management, fine arts, folklore, gender studies, history, museum studies, philosophy, politics, social sciences, sociology, or visual arts.

### Course Requirements

A minimum of 78 credit hours; 30 credits from IU and 48 credits from ANU.

### MAAA Core Courses (IU)

- Y502 Introduction to Arts Administration and Organizational Behavior (3 cr.)
- Y504 Arts Organizations in the Public and Private Sectors (3 cr.)
- Y515 Financial Management for the Arts (3 cr.)
- Y525 Museum Management (3 cr.)
- Y530 Audience Development and Marketing the Arts (3 cr.)
- Y551 Cultural Planning and Urban Development (3 cr.)
- Y558 Fund Development for Nonprofit Organizations (3 cr.)
- Y550 Practicum in Arts Administration (3 cr.)

### MAAA Electives (IU)

6 credit hours of electives to be selected in consultation with the Masters Program Office advising staff (see Courses tab for suggested acceptable courses).

### MMHS Compulsory Courses (ANU)

- HUMN8027 Critical Issues in Heritage and Museum Studies (6 units)
- MUSC8004 Internship (6 units – transfers as 3 IU credits)
- MUSC8006 Indigenous Collections and Exhibitions (6 units)
- MUSC8012 Understanding Learning in Museum and Heritage (6 units)
- MUSC8017 Museums and Collections Key Concepts

6 units from the following:

- MUSC8013 Museum Education and Heritage Interpretation Study Tour (6 units)
- MUSC8014 Design and Delivery of Exhibitions (6 units)
- MUSC8019 Repatriation: principles, policy, practice (6 units)

Minimum of 6 units from the following:

- MUSC8009 Museums and Collections research (6 units)
- MUSC8011 Museums and Collections: Extended Research Project (12 units)

A maximum of 6 units from the following (transfers as 3 IU credits):

- ARTV8100 Points of View (6 units)
- ARTV8107 Arguing Objects (6 units)
- HIST6237 Digital History, Digital Heritage (6 units)
- HUMN8010 Material Culture Studies (6 units)
- MUSC8008 Museums, Art and Society in the Asia-Pacific (6 units)
- MUSC8013 Museum Education and Heritage Interpretation Study Tour (6 units)
- MUSC8016 Museum Learning: The politics of Dress (6 units)

### Grades

A grade point average of 3.0 (B) or higher must be maintained.

## Opportunities for Non-Majors

### Doctoral Minor in Arts Administration

(Required 4 courses, 12 credit hours)

The Ph.D. minor should be negotiated with the O'Neill School of Public and Environmental Affairs (SPEA), Doctoral Advisor in Arts Administration, Karen Gahl-Mills. For a more research-oriented minor, the student should work with the SPEA Director of Doctoral Programs to construct an independent minor including doctoral research seminars.

Students may take any arts administration courses to fulfill the requirement (substitutions may be arranged with the Doctoral Advisor in Arts Administration).

### ARTS ADMINISTRATION – AADM

- Y502 Introduction to Arts Administration and Organizational Behavior
- Y504 Arts Organizations in the Public and Private Sectors
- Y505 Programming in the Performing Arts
- Y506 Curating for Museums and Galleries
- Y508 Performing Arts Organization Management
- Y511 Performing Arts Center Management
- Y515 Financial Management for the Arts
- Y522 IT Applications for the Arts
- Y526 Arts and Social Change
- Y530 Audience Development and Marketing the Arts
- Y551 Cultural Planning and Urban Development
- Y558 Fund Development for Nonprofit Organizations
- Y559 Public Policy and the Arts
- Y562 Legal Issues in the Arts
- SPEA-N525 Management for the Nonprofit Sector
- Y500 Topics courses (topics vary from semester to semester) Current topics include: Arts Education Policy, Arts Entrepreneurship, Arts Writing and Advanced Marketing, , Graphic Design, The Film Industry

### Jacobs School of Music Master's Outside Field of Study

(Required 2 courses, 6 credit hours)

The Master's in Outside Field of Study should be negotiated with the Jacobs School of Music with permission from the Arts Administration Program Director, Karen Gahl-Mills.

Jacobs School of Music Graduate Academic Advising  
Office 205 S. Jordan Ave.; (812) 855-1738

### Doctoral Advisor, Arts Administration Faculty

Karen Gahl-Mills, kgahlmil@indiana.edu, (812) 856-7404

### Faculty

#### Staff Program Director

Karen Gahl-Mills

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Michael Rushton\*

### Associate Professors

Joanna Woronkowicz\*

### Senior Lecturers

Monika Herzig; Frank Lewis

### Lecturers

Ursula Kuhar

### Visiting Clinical Associate Professor

Karen Gahl-Mills

### Adjunct Professors

Douglas Booher (IU Auditorium); Corrinne Preston (O'Neill School of Public and Environmental Affairs); Megan Starnes (O'Neill School of Public and Environmental Affairs); Adrian Starnes (IU Center for Rural Engagement)

### Courses

- **AADM-Y 500 Topics in Arts Administration (1-6 cr.)** Selected research and discussion topics organized on a semester-by-semester basis.
- **AADM-Y 562 Legal Issues in the Arts (3 cr.)** Examines legal interests and rights of composers, writers, performing artists, visual artists and arts organizations. Explores a broad range of legal considerations pertaining to relationships between parties in arts oriented contexts. Topics addressed include: copyright, trademark and right of publicity law; defamation and invasion of privacy law; advertising law; First Amendment issues for artists and arts administrators; contract law as applied to arts-related agreements; personal property law; and legal issues associated with different forms of arts organizations.
- **AADM-Y 502 Introduction to Arts Administration and Organizational Behavior (3 cr.)** This course introduces graduate students to the professional world of arts administration, its many disciplines, its dramatically and rapidly changing landscape, and the nature and culture of its organizations. Major concepts of organizational behavior by employees, managers, and organizations themselves are discussed. Students practice several roles within organizations.
- **AADM-Y 504 Arts Organizations in the Public and Private Sector (3 cr.)** The internal structure and governance of arts organizations in the commercial, nonprofit and public sectors (Ministries of Culture, and arm's length arts councils), as well as hybrid organizations, and contracts between types of organizations.
- **AADM-Y 505 Programming the Performing Arts (3 cr.)** The course examines how programming relates to marketing and public relations; the role of programming in the public and professional identity of artists and arts organizations; the external factors that condition program choice; and how programming affects relationships with society and the arts community on local, national, and international levels.

- **AADM-Y 511 Performing Arts Center Management (3 cr.)**This course focuses on the aspects of managing a performing arts program and facility. Indiana University Auditorium and other performing arts facilities will serve as laboratories to provide you with a balance between academic and real-world issues.
- **AADM-Y 515 Financial Management for the Arts (3 cr.)**The course introduces students to the role of financial management in the modern not-for-profit organization. This course covers applications of budgeting, financial and managerial accounting principles, and procedures and financial analysis for nonprofit organizations. Materials covered should be considered required knowledge for the mid-to-senior-level arts administrator.
- **AADM-Y 522 IT Applications for the Arts (3 cr.)**Teaches Arts Administration professionals how to use computer applications to create printed, web based and multimedia materials to promote effective communications. Provides instruction and practical hands-on experience in design theory, page layout, usability, accessibility, digital photo editing, graphics, and desktop and web publishing to create promotional and informational materials.
- **AADM-Y 525 Museum Management (3 cr.)**Course addresses general management of museums. The museum, its legal status, the building, management and staff, goals and objectives, fundraising and budgeting, collection and exhibitions, education and community outreach.
- **AADM-Y 530 Audience Development and Marketing the Arts (3 cr.)**Course includes basic marketing principles as well as audience development and marketing strategy. In addition to introducing the fundamentals of marketing, it fosters and encourages the thought processes necessary to market the products/services that are creative arts.
- **AADM-Y 535 Arts Administration and the Cultural Sector (3 cr.)**In this course students learn about the market structure of the cultural sector. Among the many questions we try to answer are: What makes the arts different from other goods and services in the marketplace? What do we know about consumers of the arts, and how they become informed about different books, films, or performances? What is the system that determines which works of art are exhibited or published and which fall by the wayside? Who bears the burden of the risk in a new venture?
- **AADM-Y 550 Practicum in Arts Administration (3 cr.)**Provides hands-on managerial and administration experiences in three different community and campus arts organizations including: Musical Arts Center, Department of Theatre, Drama, and Contemporary Dance, IU Auditorium, IU Foundation, IU Art Museum, Mathers Museum of World Cultures, IU School of Music, African American Arts Institute, Bloomington Area Arts Council, Bloomington Playwrights Project, School of Fine Arts Gallery, Lotus World Music and Arts Festival, and the Buskirk-Chumley Theater.
- **AADM-Y 559 Public Policy and the Arts (3 cr.)**This course considers the principal aspects of cultural policy in the U.S. and elsewhere. Topics include arts education, the ends and means of government funding for the arts, multiculturalism, freedom of expression, copyright, other legal rights of artists, international trade in cultural goods, and international treatises on cultural diversity.
- **AADM-Y 650 Seminar in Arts Administration (3 cr.)**The seminar provides a capstone experience for students finishing the Master's Degree in Arts Administration. The emphasis is on the application of the concepts covered throughout the program with a detailed look at leadership issues facing the arts administrator. The seminar/workshop involves the promotion of the arts: planning, management, labor relations, fundraising, funding sources, communications, and similar topics in relation to arts centers, museums, and performing arts organizations. Special emphasis is placed on strategic planning. Course includes a few guest speakers from major arts organizations.
- **AADM-Y 680 Readings in Arts Administration (arr. cr.)**P: Consent of instructor and departmental chairperson. Supervised readings in arts administration.
- **AADM-Y 690 Independent Study in Arts Administration (arr. cr.)**P: Consent of instructor and department chairperson.
- **AADM-Y 750 Internship in Arts Administration (3 cr.)**A minimum 280 hours of field work or internship in a managerial office of a museum, theatrical or musical organization, or community, state, regional, or national arts council is required. The internship is ordinarily taken after the first academic year in the summer or after the third semester of coursework during the spring semester.
- **AADM-Y 558 Fund Development for Non-Profits (3 cr.)**Important aspects of the fund raising process in nonprofit organizations are covered, including: techniques and strategies for assessing potential sources of support; effective use of human resources; process management; theory to underlay practice; analysis of current practice; practice standards; and discussion of ethical problems.

## Elective Courses

Requirements of at least nine elective credits. Courses must be graduate-level (500+) or equivalent. Elective credit may be obtained from any graduate program on campus. Arts Administration electives are listed below:

### AADM: Arts Administration

Y500 Topics Course (The Arts and Social Change; Curating in Galleries and Museums; Cultural Districts and Local Arts Policy; Graphic Design; Legal Issues in the Arts)

Y505 Programming the Performing Arts

Y522 IT Applications for the Arts

Y559 Public Policy and the Arts

Y680/Y690 Readings in Arts Administration/Independent Study

## Art History

### College of Arts and Sciences

Visit our website: [arthistory.indiana.edu](http://arthistory.indiana.edu)

Contact us via email by writing to: [arthist@indiana.edu](mailto:arthist@indiana.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

## Curriculum

### Degrees Offered

Master of Arts (Art History), Dual Master of Arts (Art History) and Master of Library Science, and Doctor of Philosophy (Art History)

### Special Departmental Requirements

(See also general University Graduate School requirements.)

### Master's Degrees

Master of Arts Degree (Art History)

### Admission Requirements

Bachelor's degree with a major in Art History. Students with majors in other disciplines with a demonstrable background in art history are also welcome to apply. GPA of 3.5 expected, as well as appropriate level of achievement on the Graduate Record Examination (GRE) General Test. (The department recommends a minimum verbal score of 160, though scores are evaluated in the context of the complete application package.) Applications must include personal statement, C.V., writing sample, three letters of recommendation, and, for applicants using English as a second language, TOEFL scores. A minimum overall TOEFL score of 100 on the Internet-based exam or 600 on the paper-based exam is required. For the IELTS exam a minimum score of 7.0 is required.

### Grades

Students must maintain a minimum grade point average of 3.5. Only those art history courses completed with a grade of B or higher will count towards the degree. A student with a G.P.A. lower than 3.5 may be placed on probation.

### Course Requirements

- 6 courses at the 500- or 600-level in three areas, no more than two of which may be 500-level lectures: 18CH
- A500: Historiography: 3CH
- A510: Theory and Methods: 3CH
- One of the following:
  - A595 (essay seminar) with A775 (reading): 6CH
  - A775 (reading): 6CH

TOTAL: 30 CH (UGS minimum)

- Language study represents additional course work.

### Foreign Language Requirement

Reading proficiency in one language. German or French are most common; however, students may choose another language with the approval of the Director of Graduate Studies. Proficiency must be demonstrated by the end of the second semester of study.

### Essay and Presentation

The Master's Essay is a 25- to 30-page research paper, notes and bibliography included. Often the Master's Essay will be a continuation of research begun as a seminar project. Students prepare this essay under the supervision of a faculty advisor. They also must select a second reader for the essay. Selection of both the faculty advisor and the second reader must occur by October 15<sup>th</sup> of the student's second year of study.

In the second semester of the second year, students will register for ARTH-A595 and/or ARTH-A775. In this course students will be guided toward the timely completion of the Master's Essay. As part of this course students will present their work in a public lecture.

Upon completion of the essay and presentation, the student's work must receive formal approval by the faculty advisor and second reader.

### Dual Master of Arts and Master of Library Science Degrees

This program permits the student to coordinate a Master of Arts degree in art history with a Master of Library Science degree. The dual program requires that students complete 60 credit hours, with 30 credit hours in Art History and 30 in Library Science. Students complete all course and language requirements for each of the degrees, but write a single MA essay in either Art History or Library Science.

### Admission Requirements

Students must apply for admission to both the Department of Art History and the Department of Information and Library Science and meet the admissions requirements established by each.

### Requirements

Students must complete all course requirements for the Master's Degree in Art History listed above as well as those stipulated by the Library Science program. Please consult the Library Science *Bulletin* entry for more information.

### Doctor of Philosophy Degree Course Requirements

#### 63 credit hours distributed between major and minor fields

- 30 credit hours maximum may be carried over from the MA
  - 6 courses at the 500- or 600-level in two areas, no more than two of which may be 500-level lectures: 18 CH
- Minor course requirement: 12 CH
- A 775 (advanced readings – qualifying exam prep): 3 CH
- Language study represents additional course work unless part of a minor.

Upon completion of major and minor requirements students should have amassed 63 credit hours. Students must also complete language requirements by this time. After completing 63 credit hours and two languages, students may proceed to Qualifying Exams. After exams students may register for a further set of A775 for up to 16 CH, A779 for up to 16 CH and A879 for up to 16 CH.



Students meet the Indiana University PhD residency requirement upon completing 90 CH. After this, students may register for G-901 for as many as 6 semesters to maintain continuous enrollment.

**Minor:** Students are to complete 12 credit hours of coursework as well as satisfy any other requirements for a minor in a department or program distinct and separate from Art History.

### Areas

Ancient Greek and Roman, Medieval (East and West), Asian, Renaissance and Baroque, Modern (European and American, 19<sup>th</sup> century through present-day), Islamic, and African/Oceanic/Pre-Columbian American.

### Grades

Students must maintain a minimum grade point average of 3.5 in the major field. Only those Art History courses in which the student earns a B or higher will count towards the degree. A student who has a GPA lower than 3.5 may be placed on probation.

### Foreign Language Requirement

Reading proficiency in two languages. German or French are most common; however, students may choose another language with the approval of the Director of Graduate Studies. The major field advisor may require additional foreign languages.

### Qualifying Examinations, Dissertation Proposals, Proposal Defense

Qualifying examinations will cover three topics in the student's the primary field of study, with the possibility of a subsequent oral examination at the discretion of the department.

Upon successful completion of the examination process, students must submit a brief dissertation proposal (ca. 2 pages) for general faculty approval. Following receipt of said approval, students submit a formal proposal to their dissertation committee and to the Director of Graduate Studies, who will schedule an oral defense of the proposal prior to the commencement of dissertation research.

### Final Examination

Oral defense upon completion of the dissertation project.

### Ph.D. Minor in Art History

A Ph.D. minor in Art History is available to students outside the department. Students must complete 12 credit hours of Art History coursework. They must take 2 lecture courses and 2 seminars. A seminar may always be used to fulfill a lecture requirement. All programs must be determined in consultation with the Art History Director of Graduate Studies. A grade point average of 3.5 is required.

### Faculty

#### Chair

Diane Reilly

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Provost Professor

Diane Reilly\*

#### Ruth N. Halls Professor

Bret Rothstein\*

#### Professors

Michelle Facos\*, Cordula Grewe\*

#### Associate Professors

Sarah Bassett\*, Melody Barnett Deusner\*, Margaret Graves\*, Giles Knox\*, Bárbaro Martínez-Ruiz\*, Julie Van Voorhis\*

#### Assistant Professors

Faye Gleisser\*, Jeffrey Saletnik\*

#### Senior Lecturer

Andrei Molotiu\*

#### Lecturer

Maria Domene-Danes

#### Faculty Emeriti

Sarah Lea Burns\*, Molly Faries\*, Adelheid M.M. Gealt\*, Janet Kennedy\*, Patrick McNaughton\*, Susan Nelson\*

#### Adjunct Professor

Deborah Deliyannis\*

#### Adjunct Associate Professors

Heather Akou

Phoebe Wolfskill\*

#### Adjunct Assistant Professors

Nicholas Blackwell

Lindsey Mazurek

Judy Stubbs

### Courses

#### Ancient

- **ARTH-A 501 Topics in Ancient Art (3 cr.)** Special topics in the history and study of Ancient Art. May be repeated for credit when topic varies.
- **ARTH-A 514 History of Greek Sculpture (3 cr.)** Survey of Greek Sculpture (1000 B.C.-50 B.C.) Students will become familiar with the extant monuments, the various phases of development from Geometric over Archaic, Classical to

Hellenistic. Problems of interpretation, style and placement will be dealt with in each period, from Athens over Asia Minor to Southern Italy.

- **ARTH-A 516 Ancient Art from Alexander the Great to Augustus (3 cr.)** Introduction to the art and architecture of the ancient Mediterranean world during the Hellenistic and Roman Republic periods.
- **ARTH-A 518 Roman Sculpture (3 cr.)** Critical analysis of historical reliefs, portraiture, and sarcophagi.
- **ARTH-A 615 Problems in Greek Painting (3 cr.)** Special topics in Greek painting.
- **ARTH-A 616 Problems in Roman Art (3 cr.)** Graduate seminar in the history of Roman art with a focus on the particular problems associated with its study including collection, acquisition, restoration, display, and interpretation of the works of classical antiquity in both their original and more modern contexts. May be repeated for credit when topic varies.

### Medieval

- **ARTH-A 520 Topics in Medieval Art (3 cr.)** Various topics offered in Medieval Art.
- **ARTH-A 521 Pagans & Christians: Christian Art in the Roman Empire (3 cr.)** Christian Art as it developed in its first centuries within the Roman Empire (200-600).
- **ARTH-A 525 Heaven on Earth: Art and the Church in Byzantium (3 cr.)** Art and architecture in the Byzantine Empire (600-1500).
- **ARTH-A 533 Romanesque Art (3 cr.)** Survey of the most important art historical monuments of the 11<sup>th</sup> and 12<sup>th</sup> centuries and their religious and social contexts.
- **ARTH-A 621 Problems in Early Christian Art (3 cr.)** Selected topics in early Christian art. May be repeated for credit when topic varies.
- **ARTH-A 623 Problems in Romanesque Art (3 cr.)** Special topics in Romanesque Art. May be repeated for credit when topic varies.
- **ARTH-A 624 Problems in Early Gothic Art (3 cr.)** This graduate seminar focuses on the art and architecture created during the early gothic period, their context and history, and the art historical problems associated with the study of these art objects. May be repeated for credit when topic varies.
- **ARTH-A 626 Problems in Byzantine Art (3 cr.)** Special topics in Byzantine art. May be repeated for credit when topic varies.

### Renaissance and Baroque

- **ARTH-A 557 Topics in Renaissance and Baroque Art (3 cr.)** Various topics offered in Renaissance and Baroque Art. May be repeated for credit when topic varies.
- **ARTH-A 586 Spanish Art of the Golden Age (3 cr.)** Studies the emergence of a distinctive and influential school of Spanish painting from the mid-sixteenth through the seventeenth century. Special attention paid to the artists that truly made this a golden age of painting: El Greco, Velázquez, Ribera, and Murillo.

- **ARTH-A 635 Problems in Italian Art of the Seventeenth Century (3 cr.)** Special topics in the problems of the art historical study of Italian Art of the 17<sup>th</sup> Century. May be repeated for credit when topic varies.
- **ARTH-A 637 Problems in Early Netherlandish Painting (3 cr.)** Topics in this seminar address the cultural functions of sight in Fifteenth-century England, France, and Germany. May be repeated for credit when topic varies.
- **ARTH-A 638 Problems in Sixteenth-Century Art outside Italy (3 cr.)** Graduate seminar on the art of the 16<sup>th</sup>-century outside of Italy. This seminar will focus on 16<sup>th</sup>-century art and artists and the problems associated with their study.

### Modern

- **ARTH-A 540 Topics in Modern Art (3 cr.)** Special topics in the history and study of nineteenth- and twentieth-century European and American Art. May be repeated twice for credit when topic varies.
- **ARTH-A 543 History of Twentieth-Century Photography (3 cr.)** Surveys twentieth-century photography as a medium of art and communication. Considers portraiture, landscape, still life, the nude, conceptual photography, the social documentary tradition, the magazine picture story, fashion, advertising and war photography. Examines the impact of post-modern theories on photographic practice and the understanding of photography.
- **ARTH-A 558 American Art, 1865-1945 (3 cr.)** History of Art in the United States from the end of the Civil War to World War II.
- **ARTH-A 569 Installation Art (3 cr.)** This course looks at the historical roots and development of installation art.
- **ARTH-A 576 Print and the Origins of the Modern Medium (3 cr.)** Examines the cultural and political impacts of print in Europe and the Americas from 1375-2000. Discusses various types of printmaking, as well as how these reshaped social interaction, reconfigured text and image relationships, and transformed the values we assign to visual expression, especially concerning the very idea of a "medium."
- **ARTH-A 584 Experience/Experiment: Modern and Contemporary Intersections of Art and Science (3 cr.)** This course examines how the scientific study of human experience has influenced artistic practice since the modernist era.
- **ARTH-A 587 Caribbean and Latin American Art (3 cr.)** This class will focus on the emergence of an African aesthetic and its conceptual principles, from the first stirrings in the 16<sup>th</sup> century of Africans dislocated through the slave trade to the early 20<sup>th</sup> century, when most African artistic and cultural expressions were developed and rooted throughout the Americas.
- **ARTH-A 640 Problems in Modern Art (3 cr.)** Special topics in the problems in modern art. May be repeated with a different topic for a total of 6 credit hours.

- **ARTH-A 643 Problems in American Art (3 cr.)** Graduate seminar exploring American art: its creation, exhibition, historical context, and the visual culture of which it was part and contributed to. May be repeated for credit when topic varies.
- **ARTH-A 646 Problems in Twentieth-Century European Art (3 cr.)** Variable topics in the history of 20<sup>th</sup> Century European Art. May be repeated for credit when topic varies.
- **ARTH-A 647 Problems in Contemporary European and American Art (3 cr.)** Special topics in European and American contemporary art. May be repeated for credit when topic varies.

#### Islamic

- **ARTH-A 589 Topics in Islamic Art (3 cr.)** Special topics in the history and study of Islamic art. May be repeated for credit when topic varies.
- **ARTH-A 667 Problems in Islamic Art (3 cr.)** Special topics in the history and study of Islamic art. May be repeated for credit when topic varies.

#### Asian

- **ARTH-A 560 Special Studies in Chinese Art (3 cr.)** Special topics in the history and study of Chinese art.
- **ARTH-A 566 Early Chinese Painting (3cr.)** Chinese painting and pictorial art from the Six Dynasties through the Song dynasty (ca. 200-1300 A.D.). Topics include figure and narrative painting; the culture of landscape, from mountains to gardens; the iconography of flowers, birds, and other small motifs drawn from nature; institutional and private patronage; and the relationships between painting, poetry, and calligraphy.
- **ARTH-A 662 Problems in Chinese Painting (3cr.)** This graduate seminar focuses on the art historical study of Chinese painting: its history, context, and the art and artists which fall under this purview.

#### Art of Africa, Oceania, and Pre-Columbian America

- **ARTH-A 551 Art of the South Pacific (3 cr.)**
- **ARTH-A 552 Art of Eastern and Southern Africa (3 cr.)** Survey of visual arts traditions of eastern and southern Africa, examining architecture, personal arts of the body and household, religious arts, and contemporary painting and sculpture, emphasis on the 19<sup>th</sup> and 20<sup>th</sup> centuries, but some earlier traditions, such as Ethiopian Christian art and Swahili architecture, are also discussed.
- **ARTH-A 555 Art, Craft, and Technology in Sub-Saharan Africa (3 cr.)** History of arts of utility, with emphasis on their technological and contextual setting.
- **ARTH-A 650 Problems in African Art (3 cr.)** Special topics in the history of African Art. May be repeated for credit when topic varies.

#### General

- **ARTH-A 500 Historiography of Western Art (3 cr.)** Study of the many methodological traditions that shaped the discipline of art history from the ancient world to the twentieth century.

- **ARTH-A 510 Critical Theories and Methods in Art History, Ca 1900-Present (3 cr.)** This course is designed to afford graduate students in the History of Art the opportunity to examine methodologies in the discipline, as well as their development, since its efflorescence as a modern discipline in the late 19th century. Through readings, discussion, and individual research, students will develop an understanding of how critical theory has shaped art historical practice, both from within and without the discipline. They will also have the chance to gauge the potential applicability of important theoretical models for their own research interests.
- **ARTH-A 580 Topics in Art History (3 cr.)** Special topics in the history and study of Art History in various centuries. May be repeated four times with different topics.
- **ARTH-A 590 Museum Studies (3 cr.)** Designed to utilize the resources of the Eskenazi Museum of Art for academic research. Topics vary and include cataloging, technical examination, and organizing exhibitions. May be repeated for credit when topic varies.
- **ARTH-A 595 Master's Essay Research (1-4 cr.)** Readings and research for the M.A. essay in the history of art.
- **ARTH-A 690 Burke Seminar in the History of Art (1-4 cr.)** A seminar conducted by a visiting professor in conjunction with a member of the art history faculty. The topic, format, and length of the seminar will vary. May be repeated, with different topics, for a maximum of 8 credits.
- **ARTH-A 691: Curating Museum Displays and Exhibitions (3 cr.)** Using a campus collection, students will explore the qualities and histories of its objects, considering their historiography, authenticity, and the collecting culture that shape existing narratives surrounding the material. Students will also study the history of display of similar material and propose future modes of display in a museum setting. May be repeated for credit when topic varies for a total of 9 credit hours.
- **ARTH-A 775 Advanced Readings and Research (1-8 cr.)**
- **ARTH-A 779 Directed Field Work (arr. cr.)** Specialized research in museums and libraries or archaeological sites, in fields closely related to student's doctoral dissertation. May be repeated for a total of 16 credit hours.
- **ARTH-A 879 Doctoral Dissertation (arr. cr.)**
- **ARTH-G 901 Advanced Research (6 cr.)** Dissertation hours (6 semesters, 6 credits each, for a total of 36 hours).

## Astronomy

### College of Arts and Sciences

Departmental E-mail: [astdept@indiana.edu](mailto:astdept@indiana.edu)

Departmental URL: [www.astro.indiana.edu](http://www.astro.indiana.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

## Curriculum

### Degrees Offered

Master of Arts and Doctor of Philosophy. The department also participates in the Ph.D. program in astrophysics.

### Research Facilities

Members of the Department of Astronomy use the WIYN 3.5m and 0.9m telescopes at Kitt Peak National Observatory near Tucson, Arizona, to carry out research in optical astronomy. The advanced-technology 3.5m telescope delivers superb image quality over a wide field and is also optimized for multiobject spectroscopy, including a high-spectral-resolution mode and high-spatial-resolution imaging in the optical and near-infrared. Indiana University currently holds a 25 percent share of the WIYN facility. The High-Energy Astrophysics Group carries out research with underground, spacecraft, and balloon-borne detectors that are developed within the department. Several instrument development labs and machine shops support the optical and high-energy research programs.

Research in the Department of Astronomy is supported by excellent computational facilities. Students, faculty, and research staff have fast desktop machines with 10-Gbps network connectivity within the department and to the outside world. The department maintains several multi-Terabyte file servers and a number of high-performance computer platforms for simulations and data analysis. Indiana University operates BigRed 200, one of the fastest university-owned supercomputers in the world. These computational research capabilities are supported by massive data processing and storage systems and a number of advanced visualization resources.

### Special Departmental Requirements

(See also general University Graduate School requirements.)

### Admission Requirements

Good preparation for graduate work in astronomy or astrophysics requires the same training in physics and mathematics needed for a bachelor's degree in physics, plus a familiarity with the subject matter of introductory astronomy or astrophysics courses, such as A221-A222 or A450-452. An undergraduate major in astronomy, astrophysics, physics, or mathematics that has provided such a background is usually required for admission. Any necessary undergraduate courses that are taken to strengthen a student's background will not receive graduate credit.

### Master of Arts Degree Course Requirements

A minimum of 30 credit hours, including any three astronomy graduate core courses (see below).

### Thesis

A thesis may be required, at the discretion of the department. Students for whom the thesis requirement is waived must still complete a significant project that demonstrates research proficiency.

### Final Examination

An oral examination must be passed that covers topics in general astronomy at the A450-452 level, the core courses applied toward the degree, and the thesis research in Astronomy or Astrophysics.

### Doctor of Philosophy Degree Course Requirements

A total of 90 credit hours. Students are required to take six of the following core courses: A505, A515, A520, A530, A540, A550, A570, A575, and A580. Normally, these courses are offered at the rate of three courses per year, and they may be taken in any sequence. The remainder of the graduate program consists of elective courses, seminars on advanced topics, research, and dissertation.

### Grades

Grades below B (3.0) in core courses may be counted toward degree requirements only at the discretion of the department.

### Qualifying Examination

In order to advance to candidacy, a student must pass a written examination covering the core course material plus general astronomy at the A450-452 level. The examination may be taken no more than twice. The examination is usually offered once a year in late May/early June.

### Candidacy Seminar

The candidacy seminar is an oral presentation to the research committee, usually consisting of a thesis proposal and/or a summary of past research activity. It must be completed within a year of passing the written qualifying examination (typically by the end of the third year of residence).

### Minor Requirement

Doctoral candidates must complete a minor as part of the degree requirements for the Ph.D. Doctoral candidates in astronomy may minor in Physics, Scientific Computing, Mathematics, or Chemistry. Other minors may be permitted at the discretion of the Graduate Advising Committee.

### Final Examination

Oral defense of the dissertation.

### Ph.D. Minor in Astronomy

Students from other departments who wish to minor in astronomy must complete at least 6 credit hours of graduate courses in astronomy at the 500 level with an average GPA of B (3.0) or higher. The student should discuss proposed course work for the minor with an advisor from the Department of Astronomy, usually the Director of Graduate Studies. One astronomy course at the 400 level (listed below) may be substituted for one of the 500 level courses upon approval by the student's astronomy advisor.

### Faculty

#### Chairperson

Professor Catherine A. Pilachowski



## Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Haldan N. Cohn\* (Emeritus), Richard H. Durisen\* (Emeritus), Eileen D. Friel\* (Emeritus), R. Kent Honeycutt\* (Emeritus), Phyllis M. Lugger\*, Stuart L. Mufson\* (Emeritus), Catherine A. Pilachowski\*, John J. Salzer\*, Liese van Zee\*

### Associate Professors

Martin S. Burkhead\* (Emeritus), Constantine P. Deliyannis\*, Katherine L. Rhode\*, Enrico Vesperini\*

### Assistant Professor

Samir Salim\*, Songhu Wang\*

### Visiting Assistant Professor

Alex Deibel

### Senior Scientists

Thomas Y. Steiman-Cameron (Emeritus)

### Research Scientists

Jonathan Thornburg

### Graduate Advisor

Associate Professor Enrico Vesperini\*, Swain Hall West 326, (812) 856-0317

## Courses

### Astrophysics Courses

**AST-G 630 Nuclear Astrophysics (3 cr.)** P: A451, P453-P454, or consent of instructor. R: A550, P511. Applications of nuclear physics to astronomy. Fundamental properties of nuclei and nuclear reactions. Element synthesis and energy generation in the big bang, stellar interiors, and supernovae. Discussion of current topics: cosmological nucleosynthesis, solar neutrino flux, explosive nucleosynthesis, high-energy nuclear processes.

**AST-G 650 High Energy Astrophysics (3 cr.)** Covers cosmic rays from the perspective of astrophysics and high-energy particle physics. Examples of topics that may be included are the production, propagation, and interactions of cosmic rays as well as the experimental detection of cosmic rays. Subtopics include atmospheric and solar neutrinos, magnetic monopoles, point sources of cosmic rays, neutrino oscillations, air showers, and stellar collapse detection.

**AST-G 750 Topics in Astrophysical Sciences (1-3 cr.)** A seminar in astrophysics with special emphasis on subjects involving more than one department. Examples of such topics include planetology, nucleosynthesis, nuclear cosmochronology, isotopic anomalies in meteorites, particle physics of the early universe, and atomic processes in astrophysical systems.

## Astrophysics

### College of Arts and Sciences

Departmental E-Mail: [astdept@indiana.edu](mailto:astdept@indiana.edu)

Departmental URL: [www.astro.indiana.edu](http://www.astro.indiana.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degree Offered

#### Doctor of Philosophy

The astrophysics program is administered jointly by the Department of Astronomy and the Department of Physics through the interdepartmental committee named. Interested students must first gain admission to one of these departments and then petition the committee for entrance into the program after establishing departmental residency. Students may qualify for a master's degree in astronomy or physics while in this program. Doctoral dissertations in astrophysics may be directed by any qualified member of the Department of Astronomy or Physics graduate faculty.

#### Special Program Requirements

(See also general University Graduate School requirements.)

#### Admission Requirements

A student should have the combined admission requirements of doctoral students in astronomy and physics; i.e., a thorough undergraduate training in physics and mathematics plus familiarity with general astronomy. Deficiencies must be removed early, usually without graduate credit.

#### Course Requirements

In addition to the dissertation, a total of 90 credit hours are required, including four courses or their equivalents from the following Physics courses: Physics P506, P507, P511, P512, P521, P556, P609, P630 (G630) and P637; and four courses or their equivalents from the following Astronomy courses: Astronomy A505, A515, A520, A530, A540, A550, A570, A575, and A580. One additional physics, astronomy core course or astrophysics course is also required. Astrophysics courses in the Bulletin listings for the Astrophysics program can be counted as the additional course if offered. Physics or astronomy or astrophysics courses not in the above list may be approved by the Astrophysics Committee upon petition by the student.

#### Advising

Astrophysics students are subject to the advising procedures of their resident departments prior to forming their Research Committee. Once the Research Committee is formed, the dissertation director and Research Committee will be responsible for advising the student.

#### Research Committee

Students should convene a Research Committee within one year of passing all components of the Qualifying

Examination. The Research Committee must consist of at least four graduate faculty members. At least one of these members must be from Astronomy and at least one must be from Physics.

### Candidacy Seminar

The candidacy seminar is an oral presentation to the Research Committee, usually consisting of a dissertation proposal and/or a summary of past research activity. It must be completed within one year of passing the Qualifying Examination.

### Minor

By meeting the course requirements for this degree, a student from the Department of Astronomy will automatically fulfill the requirements for a minor in physics, and a student from the Department of Physics will automatically fulfill the requirements for a minor in astronomy.

### Foreign Language/Research-Skill Requirement

A student in the astrophysics program must meet the foreign language/research-skill requirements (if any) of the department of residence.

### Grades

Grades below B (3.0) in astronomy and physics courses may be counted toward degree requirements only with the consent of the astrophysics committee.

### Qualifying Examination

There are three ways a student can pass the astrophysics qualifying examination:

1. Pass the full Physics qualifying exam.
2. Pass the full Astronomy qualifying exam.
3. Pass designated parts of the qualifying examinations of both departments – specifically, half of the physics qualifying examination; for the physics qualifier, a student must choose 3 subject areas amongst classical mechanics, first semester of electromagnetism, first semester of quantum mechanics, and statistical physics; for the astronomy qualifier, the student is required to answer one of two general astronomy questions and 4 of the remaining 8 questions.

The examination requirements must be satisfied by the end of the student's sixth semester in residence. The department of residence may also specify its own deadline for passage of the examination it administers. To remain in the Astrophysics program, a student must pass the qualifying examination within two attempts.

### Final Examination

Oral defense of the dissertation.

### Faculty

#### Director

Professor Charles J. Horowitz\*

### Interdepartmental Graduate Committee on Astrophysics

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Professors

Charles J. Horowitz\* (Physics), Alan Kostelecky\* (Physics), Stuart L. Mufson\* (Emeritus Astronomy), James Musser\* (Physics), Catherine Pilachowski\* (Astronomy), Michael Snow\* (Physics)

#### Associate Professor

Constantine P. Deliyannis\* (Astronomy), Katherine Rhode\* (Astronomy), Enrico Vesperini\* (Astronomy)

#### Academic Advisor

Professor Charles J. Horowitz\*, Swain Hall West 233, (812) 855-2959

### Courses

**AST-G 630 Nuclear Astrophysics (3 cr.)** P: A451, P453-P454, or consent of instructor. R: A550, P511. Applications of nuclear physics to astronomy. Fundamental properties of nuclei and nuclear reactions. Element synthesis and energy generation in the big bang, stellar interiors, and supernovae. Discussion of current topics: cosmological nucleosynthesis, solar neutrino flux, explosive nucleosynthesis, high-energy nuclear processes.

**AST-G 650 High Energy Astrophysics (3 cr.)** Covers cosmic rays from the perspective of astrophysics and high-energy particle physics. Examples of topics that may be included are the production, propagation, and interactions of cosmic rays as well as the experimental detection of cosmic rays. Subtopics include atmospheric and solar neutrinos, magnetic monopoles, point sources of cosmic rays, neutrino oscillations, air showers, and stellar collapse detection.

**AST-G 750 Topics in Astrophysical Sciences (1-3 cr.)** A seminar in astrophysics with special emphasis on subjects involving more than one department. Examples of such topics include planetology, nucleosynthesis, nuclear cosmochronology, isotopic anomalies in meteorites, particle physics of the early universe, and atomic processes in astrophysical systems.

## Institute for Biblical and Literary Studies

### College of Arts and Sciences

**Director:** Herbert Marks, Ballantine Hall 922, 812-855-9844

**Departmental Email:** [marks@indiana.edu](mailto:marks@indiana.edu)

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### Curriculum

## Program Information

The Institute for Biblical and Literary Studies is an interdisciplinary consortium that aims to bring together the critical study of the Bible, the history of biblical interpretation, and the theory and practice of literary criticism. Depending on background and interest, students may concentrate on biblical texts and languages, literary criticism, or the history and theory of interpretation. Study of ancient languages is strongly encouraged. Students with previous training in biblical studies will be advised to devote more time to courses in literary theory and Western literature; those with a stronger background in classical or modern literature will be advised to concentrate on the biblical text and its cultural setting. The institute offers a Ph.D. minor and a certificate that may be earned concurrently. Students participate in a regular seminar (I600) which, like most institute courses, combines close reading of specific texts with larger issues of methodology. Prospective students interested in pursuing the M.A. or Ph.D. degree are urged to apply first to one of the affiliated departments, such as comparative literature (for literary theory) or religious studies (for biblical studies).

## Ph.D. Minor in Biblical Literature

The Ph.D. minor in biblical literature is available to all doctoral students not specializing in biblical studies; four courses in biblical literature and in the history of biblical interpretation are required. Courses should be selected in consultation with the director of the institute.

## Grades

Courses in which a student receives less than a B (3.0) will not count toward the minor.

## Graduate Certificate in Biblical and Literary Criticism

The certificate is available to doctoral students in all departments and to special students from outside Indiana University who wish to do advanced interdisciplinary work in biblical and literary studies.

## Course Requirements

Eight courses in biblical literature, the history of biblical interpretation, and the theory and practice of literary criticism, including I600. The selection of courses should be made in consultation with the director of the institute. In certain cases, two of the eight courses may be in a biblical language. Courses that study biblical or exegetical sources in a national literature may also be counted.

## Language Requirement

Proficiency in biblical Hebrew or Greek, to be certified by the completion of N472 or G308 or their equivalent, or by an examination administered by the relevant language department.

## Grades

Courses in which a student receives less than a B (3.0) will not count toward the certificate.

## Faculty

### Director

Professor Herbert Marks\*

## Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

## Distinguished Professors

Willis Barnstone\* (Emeritus, Comparative Literature, Spanish and Portuguese), Linda Dégh\* (Emerita, Folklore)

## Professors

James Ackerman\* (Emeritus, Near Eastern Languages and Cultures, Religious Studies), Ernest Bernhardt-Kabisch\* (Emeritus, Comparative Literature, English), Kenneth R. R. Gros Louis\* (Emeritus, Comparative Literature, English), Paul Gutjahr\* (English, American Studies, Religious Studies), Shaul Magid\* (Jewish Studies, Religious Studies), Herbert Marks\* (Comparative Literature, English, Religious Studies), Carroll Nelson\* (Emeritus, Classical Studies), Eyal Peretz\* (Comparative Literature)

## Associate Professors

Jeremy Schott (Religious Studies), Nicholas Williams\* (English)

## Assistant Professors

Eva Mroczek (Religious Studies), Sonia Velazquez (Religious Studies)

## Academic Advisor

Professor Herbert Marks\*, Ballantine Hall 914, (812) 855-7070

## Courses

### Biblical and Literary Studies

IBLS-I 600 Colloquium in Biblical and Literary Studies

### Anthropology

E451 Myth and Legend (3 cr.)  
E455 Anthropology of Religion (3 cr.)

### Classical Studies

C405 Comparative Mythology (4 cr.)  
G301-G302 Classical Greek: Accelerated Courses (3-3 cr.)  
G308 Readings in Biblical Greek (3 cr.)  
G611 Greek Papyrology (4 cr.)  
L505 Medieval Latin (4 cr.)

### Comparative Literature

C501 Introduction to Contemporary Literary Studies (4 cr.)  
C503 Topics in World Criticism and Theory I (4 cr.)  
C504 Topics in World Criticism and Theory II (4 cr.)  
C505 Western Literary and Intellectual Traditions to 1500 (4 cr.)  
C506 Western Literary and Intellectual Traditions after 1500 (4 cr.)  
C545 The Bible and Western Tradition (4 cr.)  
C580 History and Theory of Translation (4 cr.)  
C601 Studies in the History of Theory and Criticism (4 cr.)  
C602 Contemporary Theoretical Issues and Approaches (4 cr.)  
C641 Literature in Its Intellectual and Cultural Contexts (4 cr.)

C643 Literary Studies and the Social Sciences (4 cr.)  
 C644 Literary Studies and Psychoanalysis (4 cr.)  
 C645 Literary Studies and Religion (4 cr.)  
 C801 Directed Research in Comparative Literature (cr. arr.)

### English

G660 Stylistics (4 cr.)  
 L605 Critical and Interpretive Theory (4 cr.)  
 L608 History of Literary Criticism (4 cr.)  
 L705 Problems in Language, Literature, and Literacy (4 cr.)  
 L707 Studies in Literary Theory and Criticism (4 cr.)

### Folklore

F527 Folk Poetry and Folksong (3 cr.)  
 F545 Folk Narrative (3 cr.)  
 F734 Folklore and Literature (3 cr.)

### French and Italian

F564 Approaches to Literary Criticism (3 cr.)  
 F584 Stylistics and Semantics (3 cr.)

### Near Eastern Languages and Cultures

N416 Comparative Talmudic Literature (3 cr.)  
 N471-N472 Biblical Hebrew I-II (3-3 cr.)  
 N586 Medieval Hebrew Literature (3 cr.)

### Religious Studies

R511 Religion of Ancient Israel (3 cr.)  
 R521 Studies in the New Testament (3 cr.)  
 R531 Studies in Christian History (3 cr.)  
 R532 Studies of Religion in American Culture (3 cr.)  
 R541 Studies in the Jewish Tradition (3 cr.)  
 R590 Directed Readings in Religious Studies (cr. arr.)  
 R610 Studies in Biblical Literature (4 cr.)  
 R663 History of Biblical Interpretation (3 cr.)

### Semiotic Studies

S601 Introduction to Semiotic Studies (3 cr.)

## Biochemistry

**Molecular and Cellular Biochemistry, Biology, Chemistry, Medical Sciences**  
**College of Arts and Sciences**

Departmental E-mail: [bchem@indiana.edu](mailto:bchem@indiana.edu)

Departmental URL: [www.indiana.edu/~mcbdept/](http://www.indiana.edu/~mcbdept/)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Science and Doctor of Philosophy in Biochemistry

#### Special Program Requirements

(See also general University Graduate School requirements.)

### Admission Requirements

Undergraduate coursework must include two semesters of organic chemistry and one semester of biochemistry. Though not required, one semester of molecular biology and two semesters of biology are recommended. One semester of (bio) physical chemistry is strongly recommended. Deficiencies in required courses must be removed during the first year of graduate study. Students seeking admission should apply directly to the Biochemistry Graduate Program. Applications must include a complete entrance form, letters of recommendation, and undergraduate transcripts. Students have the option to submit Graduate Record Examination General Test scores or subject area scores in relevant areas (e.g., Biochemistry, Chemistry, or Biology), but these scores are not required for application to the Biochemistry Graduate Program at Indiana University.

### Master of Science in Biochemistry Course Requirements

A minimum of 30 credit hours, of which 12 credit hours must be in biochemistry graduate coursework other than B880 and B600. Students are required to rotate (B580) in two laboratories in the fall semester and to participate in the Biochemistry and Molecular Biology (BMB) seminar series during their second year of the program. The graduate advisor must approve all coursework.

#### Thesis

Required.

#### Final Examination

Oral, covering thesis and major.

### Doctor of Philosophy Degree Course Requirements

A total of 90 credit hours, of which 18.5 are satisfied by the core courses (B680, Biochemical Regulation or equivalent, B530, B531, B540), one semester of B580, Grant Writing (B680 or equivalent), B502, and two semesters of B600 (or equivalent) or one semester each of B600 and C689 (or equivalent). An additional 4.5 credit hours outside the minor field complete the Biochemistry major. Six additional elective hours are required in one of the three minor fields and must be approved by the student's advisory committee, though the students may instead meet the requirements of a suitable outside minor. Students must also complete ethics training as defined by the National Institutes of Health Responsible Conduct in Research guidelines and give two BMB seminars, the latter generally in their 4th and 5th years of graduate study.

At the end of the first semester, each student selects a research advisor and laboratory. Together with the advisor, the student also selects an advisory committee of three or four faculty members appropriate to the student's intended degree including one from the prospective minor field (see below). This advisory committee guides and monitors the student's subsequent independent work and guides the student's selection of advanced courses. The biochemistry graduate program requires that each student meet with the advisory committee at least once per year, including a first meeting before October 31<sup>st</sup> of their third semester.



## Minor

The doctoral student in biochemistry may elect to minor in one of the three approved program minor tracks (Genome Biochemistry, Supramolecular Complexes, or Chemical and Physical Biology). The minor shall consist of 6 credit hours of the courses listed in the track below.

### Genome Biochemistry

Biochemistry:

- B511 Replicating the Genome (3 cr.)
- B512 Mechanisms of DNA repair (1.5 cr.)
- B513 Cellular Responses to DNA Damage (1.5 cr.)

*Alternative courses.* With the approval of the minor advisor, a student may be allowed to substitute one or more of the following courses toward the 6 Cr. minor.

Biochemistry:

- BIOC B680: Digital Imaging: Light and Microscopy (1.5 cr.)

Biology:

- BIOL Z620: Bioinformatics2go (1.5 cr.)
- BIOL Z620: Methods in Epigenomics (1.5 cr.)

Students in other departments who wish to minor in Genome Biochemistry should follow these guidelines:

(1) *Selecting a Genome Biochemistry minor advisor.* A faculty member affiliated with the Genome Biochemistry group must join the student's Advisory Committee and is expected to participate in considering appropriate course work. This **minor advisor** will then approve that courses meet the minor requirement.

(2) *Number of credits:* A Genome Biochemistry minor requires a minimum of **6 credits** of graduate courses specified above. A course may not simultaneously satisfy both major and minor course requirements. Course offerings outside of the approved list above may be used to satisfy the Genome Biochemistry minor. However, such substitutions require approval of the minor advisor and the Biochemistry Program Director of Graduate Studies.

(3) *Grades:* An **overall average of B (3.0)** or better is required in the selected minor coursework.

### Supramolecular Complexes

Biochemistry:

- BIOC B522 Structural Biology of Supramolecular Complexes (1.5 cr.)
- BIOC B524 Structural Biology of Signaling (1.5 cr.)
- BIOC B525 Membranes and Membrane Proteins (1.5 cr.)
- BIOC B680 Digital Imaging: Biological Electron Microscopy (1.5 cr.)

Chemistry:

- CHEM M503 Supramolecular Chemistry (3 cr.)

Biology:

- BIOL Z620 Virus Fundamentals (1.5 cr.)

Students in other departments who wish to minor in Supramolecular Complexes should follow these guidelines:

(1) *Selecting a minor advisor in Supramolecular Complexes:* A faculty member affiliated with the Supramolecular Complexes group must join the student's Advisory Committee and is expected to participate in considering appropriate course work. This **minor advisor** will then approve that courses meet the minor requirement.

(2) *Number of credits:* A Supramolecular Complexes minor requires a minimum of **6 credits** of graduate courses specified above. A course may not simultaneously satisfy both major and minor course requirements. Course offerings outside of the approved list above may be used to satisfy the Supramolecular Complexes minor. However, such substitutions require approval of the minor advisor and the Biochemistry Program Director of Graduate Studies.

(3) *Grades:* An **overall average of B (3.0)** or better is required in the selected minor coursework.

### Chemical and Physical Biology

Students electing to minor in Chemical and Physical Biology (CPB) are required to complete CHEM-C680 and CHEM-C681 and three additional elective credits.

These may comprise B506 and B541 (below), or may be chosen from elective offerings in Chemistry, Biology, Biochemistry, Physics and Medical Sciences, as appropriate to their major area. The Chemistry Graduate Office reviews and maintains a list of approved electives available in these areas from which students may select to complete the minor. Electives should be approved by the minor advisor in advance.

Biochemistry:

- B541 Enzyme mechanisms (1.5 cr.)
- B680 Cellular pumps, motors and switches (1.5 cr.)

Chemistry:

- C680 Introduction to Quantitative Biology and Measurement
- C681 Introduction to Chemical Biology I

### Grades

Every student must maintain a minimum GPA of 3.2 in order to remain in good standing. Courses to be counted toward the Ph.D. degree must be passed with a grade of B- or better.

### Qualifying Examinations

In the fifth semester, students meet with their examination committee to review past performance and to evaluate plans for completing the Ph.D. Includes written, oral, and research components. All full-time Ph.D. students must take the qualifying examination by the end of the fifth semester.

### Satisfactory Progress toward a Degree

After passing the preliminary examination, for a student to remain in "good standing" requires that sufficient progress be made toward completing a thesis. If the student's research committee judges progress to be unsatisfactory,

probation may be recommended. At the end of the probationary period (usually a semester), probation will be lifted if the research committee judges the student's progress to be satisfactory. If the research committee judges the student's progress to remain unsatisfactory, then the student will be required to leave the program.

### Final Examination

Oral, covering dissertation, major, and minor. The final requirement is a Ph.D. thesis, which must be defended in a public research seminar and in a meeting of the research committee.

### Other Provisions

All students enrolled in the Ph.D. program will be required to serve as associate instructors for at least one semester, regardless of their source of support; they must complete formal instruction in teaching methods in order to enhance their teaching skills. It is the conviction of the program that teaching experience is a vital aspect of graduate education, whether or not the student intends to pursue a teaching career after attainment of the desired degree.

### Ph.D. Minor in Biochemistry

Students from other programs who wish to minor in biochemistry must complete at least 6 credit hours of graduate coursework in biochemistry, excluding B502, B580, and B600, with an average of B (3.0) or above. Such students must receive approval from the Director of Graduate Studies for Biochemistry for minor courses.

### Faculty

#### Director of Graduate Studies

Matthew L. Bochman (MCB/MB) (MCB/MB)

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Carlos Miller Professor

Craig Pikaard\* (MCB/Biology, HHMI-GBMF Investigator)

#### Lilly Chemistry Alumni Professor

David Giedroc\* (Chemistry)

#### Provost Professor

Bogdan Dragnea (Chemistry)

#### Distinguished Professors

Carl Bauer\* (MCB), David Giedroc\* (Chemistry), Craig Pikaard\* (Biology)

#### Professors

Stephen Bell\* (MCB/Biology), Lingling Chen\* (MCB), Richard Hardy\* (Biology), Scott Michaels\* (Biology), Tuli Mukhopadhyay\* (Biology), Martha Oakley\* (Chemistry), Michael VanNieuwenhze\* (Chemistry), Claire Walczak\* (Medical Sciences, Biochemistry and Molecular Biology), Malcolm Winkler\* (Biology), Adam Zlotnick\* (MCB)

#### Associate Professors

Matthew L. Bochman\* (MCB), Charles Dann III\* (Chemistry), Jim Drummond\* (MCB), Peter Hollenhorst\* (Medical Sciences, Biochemistry and Molecular Biology), Heather Hundley\* (Medical Sciences, Biochemistry and Molecular Biology), Hengyao Niu\* (MCB), Megan Thielges\* (Chemistry)

### Assistant Professors

J.P. Gerdt\* (Chemistry), Jesper Pallesen\* (MCB), Jonathan Schlebach\* (Chemistry), Julia van Kessel\* (Biology), Joshua Ziarek\* (MCB)

### Assistant Research Scientist

Rachel Samson\*

### Courses

- BIOC-B 502 Analysis of Biochemical Literature (1.5 cr.) P: Concurrent enrollment in B680 (Biochemical Regulation) or consent of instructor. Critical evaluation of the biochemical literature, using selected papers as examples; development of written and oral communication skills in the context of literature analysis.
- BIOC-B 511 Duplicating and Expressing the Genome (3 cr.) P: Graduate student status. Attain an advanced level of understanding of the molecular basis of DNA replication and its control; comprehend the molecular basis of gene expression and its control; understand the interplay between chromatin and nuclear structure and replication and transcription; evaluate primary literature in this field.
- BIOC B512 Mechanisms of DNA repair (1.5 cr.) The explicit connection between failed repair pathways and cancer emerged in the late nineties and understanding the biochemical mechanisms of DNA repair has expanded dramatically. The student will consider mechanisms of DNA repair, including base excision repair, nucleotide excision repair, mismatch repair, and specialized repair pathways. Double-stranded break repair pathways, including homologous recombination, strand exchange mechanisms, non-homologous end joining and telomerase maintenance will be covered.
- BIOC B513 Cellular responses to DNA damage (1.5 cr.) The student will connect genome instability (DNA damage and failed DNA metabolism) with human disease. Featured will be mechanisms of cell cycle control of double-strand break repair, cellular responses in the context of chromatin structure. Students who successfully navigate the B511/512/513 series will develop a mechanistically detailed view of DNA metabolism that is highly relevant to understanding human disease.
- BIOC-B 522 Structural Biology of Supramolecular Complexes (1.5 cr.) Students will participate in a detailed look at selected supramolecular complexes from the perspective of structural biology. An emphasis will be placed on application of molecular graphics to understand function and intermolecular interactions. Specific topics include protein/DNA and protein/RNA interactions, covering repressor, nucleosome and reverse transcriptase structures. Mechanisms of binding cooperativity, large complex

assembly, viral assembly, and membrane fusion proteins will be covered.

- BIOC-B 524 Structural Biology of Signaling (1.5 cr.). Students will investigate macromolecular complexes and membrane proteins of diverse cellular functions, focusing on signal transduction, membrane fusion and cell adhesion. A specific emphasis on G-protein coupled receptor mechanisms will be presented as a model system for transmembrane signaling.
- BIOC-B 525 Membranes and Membrane Proteins (1.5 cr.). Students will be grounded in a general understanding of the physical and chemical forces that hold membranes together and support the structure and function of biological membrane assemblies. Course work will focus on the molecular characteristics of lipids and membrane proteins, as well as how these molecules play a role in physiological events at the membrane interface. Specific topics include membrane protein structure, folding, biogenesis and quality control; organelle membranes, intracellular trafficking, and diseases that result from defective membrane proteins.
- BIOC-B 530 Macromolecular Structure and Function (1.5 cr.) Undergraduate biochemistry (equivalent to C483 or C484), one semester of undergraduate organic chemistry (equivalent to C341), or consent of instructor. Undergraduate (bio)physical chemistry (equivalent to C481 or C361) is strongly recommended. Stabilizing forces in macromolecular structures; protein structure analysis; nucleic acid structure and probing; structure determination by nmr and X-ray crystallographic analysis.
- BIOC-B 531 Biomolecular Analysis and Interaction (1.5 cr.) Undergraduate biochemistry (equivalent to C483 or C484), one semester of undergraduate organic chemistry (equivalent to C341), and B530 or consent of instructor. Undergraduate (bio)physical chemistry (equivalent to C481 or C361) is strongly recommended. Principles of inter- and intra-molecular interactions; thermodynamic and kinetic analysis of complex binding; experimental methods for analysis of macromolecular structure and binding.
- BIOC-B 540 Fundamentals of Biochemical Catalysis (1.5 cr.) P: Undergraduate organic chemistry (equivalent to C342), undergraduate biochemistry (equivalent to C483 or C484), or consent of instructor. Theory and analysis of biochemical catalysis; enzyme kinetics and inhibition; intermediate detection; protein modification and bioorthogonal chemistry.
- BIOC-B 541 Enzyme Mechanisms (1.5 cr.) P: Undergraduate organic, chemistry (equivalent to C342), undergraduate biochemistry (equivalent to C483 or C484), B540 or consent of instructor. Theory and analysis of biochemical catalysis; post-translational modifying enzymes; redox cofactors; natural product biosynthesis; P450 mechanism; proteomics.
- BIOC-B 580 Introduction to Biochemical Research (3 cr.) P: Graduate standing. Objectives and techniques of biochemical research.
- BIOC-B 600 Seminar in Biochemistry (1 cr.) P: B502 or consent of instructor. Advanced critical analysis of the current scientific literature and scientific presentations. Attendance and participation in the weekly biochemistry program seminar series is required.
- BIOC-B 601 Advanced Nucleic Acid Biochemistry (1.5 cr.) P: B501 or consent of instructor. Mechanistic analysis of nucleic acid metabolism; specificity and role of DNA polymerases and repair pathways; DNA replication and recombination mechanisms; RNA structural motifs and physical properties; RNA synthesis and processing in gene expression; catalytic RNA molecules; applications of RNA molecules.
- BIOC-B 680 Special Topics in Biochemistry (1.5-3 cr.) P: Consent of instructor. Topics vary yearly and include the following: physico-chemical techniques in the study of macromolecules; experimental methods in enzymology; organic chemistry of enzymatic reactions and enzyme models; conformational properties and macromolecules. Can be retaken for credit.
- BIOC-B 680 Cellular Motors, Pumps and Switches (1.5 cr.). Hydrolysis of nucleotide triphosphates (NTPs), most notably ATP and GTP, can be harnessed in biological pathways to perform myriad functions. An examination of NTP hydrolysis and exchange in the context of cellular motors, pumps, and switches will provide detailed insights into how macromolecular machines, biological assemblies and signaling pathways use NTPs in essential cellular processes.
- BIOC-B 680 Biochemical Regulation P: Undergraduate biochemistry (equivalent to C483 or C484), one semester of undergraduate organic chemistry (equivalent to C341), or consent of instructor. Designed to introduce students to selected aspects of biochemical regulation, while reinforcing concepts of biochemistry as discovery-based, quantitative, molecular and chemical science. Students learn key tools and concepts that are routinely employed by biochemists to arrive at a mechanistic understanding of a biological problem.
- BIOC-B 680 Digital Imaging: Biological Electron Microscopy (1.5 cr). Electron Microscopy is a powerful tool for examining large complexes. Single particle reconstitution can now achieve near atomic resolution for complexes of more than 200 kDa. At lower resolutions, EM techniques can elucidate the 3D organization of complex assemblies diverse biomacromolecules. This course supplies hands-on training to the 'tools of the trade' for researchers studying supramolecular complexes and may be appropriate for students pursuing either the minor or the technology to support their research.
- BIOC-B 680 Digital Imaging: Light and Microscopy (1.5 cr.). An intensive, hands-on course that introduces students to the capabilities of Light

Microscopy Imaging Center (LMIC) on campus. The Center features state-of-the-art microscopy facilities to characterize living or fixed samples using fluorescence, confocal, scanning confocal, spinning disk confocal, and TIRF (total internal reflection) microscopy.

- BIOC-B 880 Research: Biochemistry (arr. cr.) This course is eligible for a deferred grade.

## Cross-Listed Courses

### Biology

- **L529 Bioinformatics in Molecular Biology and Genetics: Practical Applications (4 cr.)** P: I501, I502, L519, or consent of instructor. Practical experience in a range of data analysis and software engineering methods applied to molecular biology data.
- **L585 Molecular Genetics (3 cr.)** P: L364 and C483 or equivalent. The molecular basis of genetic interactions, with emphasis on microbial systems. The course covers the molecular mechanisms of mutation, suppression, recombination, complementation, etc., as well as mechanisms for gene transfer in bacteria and bacteriophage. The application of genetic analysis to a variety of molecular biological topics is emphasized.
- **L586 Molecular Analysis of Cell Biology (3 cr.)** Critical analysis of recent advances in our understanding of molecular organization of cellular structures and of their mode of function. The primary interest of this course concerns the eukaryotic cell.
- **M525 Topics in Microbial Biochemistry and Physiology (3 cr.)** P: Graduate standing and C483 or M350 or equivalent. The course will consider topics in physiology and biochemistry of eukaryotic and prokaryotic microorganisms. Subjects include membrane physiology and regulatory networks in metabolism and gene expression.

### Chemistry

- **C632 Structure, Function, and Spectroscopy of Metal Ions in Biological Systems (3 cr.)** Introduction to the field of bioinorganic chemistry and spectroscopic methods for determining structure/function relationship of metal ions in biology. Emphasis on oxygen carriers, metal ion transport and storage, as well as oxidoreductases involved in oxygen, hydrogen, and nitrogen metabolism. A discussion of electron transfer proteins, photosystems, and the role of metals in medicine will also be included.

### Medical Sciences

- **B801 Molecular and Cellular Biochemistry (3 cr.)** P: Graduate standing and consent of instructor. Biochemistry for medical students, emphasizing structure-function relationships of cellular components, biosynthesis of nucleic acids and proteins, degradation of simple and complex cell constituents, and regulation of cell growth.
- **B802 Metabolism and Signal Transduction (3 cr.)** P: Graduate standing and consent of instructor. Biochemistry for medical students, including

signaling pathways, membrane biochemistry, and the metabolism of macromolecules in health and disease with emphasis on clinical applications.

### Physics

- **P575 Introduction to Biophysics (3 cr.)** P: Two out of three from the following: (1) P221/P222 and P301 or equivalent, (2) C105/C106 or equivalent, and (3) L221 and L312 or equivalent; or consent of instructor. Physics P575 presents an introduction to Biophysics. Representative topics include: Order of magnitude analysis and scaling in biology; X-ray scattering and structure of biomolecules; properties of biomolecules and biomolecular complexes; Brownian motion; life at low Reynolds number and cellular motility; enzymatic reactions and biochemical networks; reaction-diffusion processes and pattern formation; sensory and motor systems; psychophysics and animal behavior; statistical inference.

### Neural Sciences

- **N612 Ion Channels and Receptors (3 cr.)** P: Graduate status and consent of instructor. Molecular, biophysical, and biochemical analysis of the major molecules responsible for neural excitability and synaptic transmission: receptor-coupled ion channels, voltage-dependent ion channels, G-protein coupled receptors, transporters, signal transduction pathways, synaptic vesicle-associated proteins, cytoskeletal proteins, classical and novel neurotransmitters and modulators.

## Biology

### College of Arts and Sciences

**Departmental Email:** gradbio@indiana.edu

**Departmental URL:** <https://biology.indiana.edu>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Doctor of Philosophy and Master of Science in Evolution, Ecology and Behavior; Doctor of Philosophy and Master of Science in Genome, Cell, and Developmental Biology; Doctor of Philosophy and Master of Science in Microbiology; Master of Arts for Teachers in Biology.

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

#### Admission Requirements

An undergraduate degree in one of the biological sciences, or a related field (e.g., chemistry, physics, or mathematics) if appropriate biology courses were included in the student's degree program. Students seeking admission to biology degree programs may apply directly to the Department of Biology or online. Applications must include a complete entrance form,



letters of recommendation, and undergraduate transcripts. The TOEFL score is required if the native language is other than English.

### Grades

For all graduate degrees, students must maintain a minimum GPA of B (3.0) in order to remain in good standing in the Graduate School. Courses to be counted toward the degree must be passed with a grade of B- (2.7) or better. To be eligible for financial support, the Department of Biology requires students to maintain a minimum GPA of 3.2.

### Ph.D. Qualifying Examination

Includes written, oral, and research components. See specifics for each program below.

### Satisfactory Progress Toward a Degree

After passing the preliminary examination, for a student to remain in "good standing" in the Department of Biology requires that sufficient progress is being made toward completing a thesis. If the research advisory committee judges progress to be unsatisfactory, probation may be recommended. At the end of the probationary period (usually a semester), probation will be lifted if the advisory committee judges the student's progress to be satisfactory. If the advisory committee judges the student's progress to remain unsatisfactory, then the student may be recommended for dismissal.

### Thesis

The final requirement of each Ph.D. program is a Ph.D. thesis, which must be defended in a public research seminar and in a meeting of the research advisory committee. See specifics for each program below and requirements from the University Graduate School.

### Other Provisions

All students enrolled in a Ph.D. program in the Department of Biology will be required to serve as associate instructors for at least one semester, regardless of their source of support; and they must complete formal instruction in teaching methods in order to enhance their teaching skills. Students whose native language is not English must become sufficiently fluent to pass the university's A.I. exam during the first year to remain in the program. It is the conviction of the department that teaching experience is a vital aspect of graduate education, whether or not the student intends to pursue a teaching career after attainment of the desired degree(s).

### Evolution, Ecology and Behavior (EEB)

The Evolution, Ecology, and Behavior (EEB) program provides training in the evolutionary, ecological, and behavioral processes that underlie patterns of life and diversity. Our integrative and cooperative program promotes graduate research that strengthens and connects traditionally distinct fields.

### Doctor of Philosophy Degree Course Requirements

A total of 90 credit hours comprised of 29+ formal course credits. Course credits include: (1) a 20 credit 'major' (composed mostly of EEB courses, with exceptions approved by the EEB Graduate Program Director [GPD]),

including two courses from one concentration area listed below and one course from a second area; (2) a six+ credit 'minor' (taken within Biology or through another department: credits vary from 6 to 15; see below); and (3) a three credit statistics 'toolkit' class (Z620 Biostatistics or equivalent). Up to six credits in the 'major' may come from three sources: (A) Z620 journal clubs, (B) L500 Independent Study/Readings (graded), and/or (C) L501 Rotations (graded). L500/L501 credits require written summaries approved by the students' graduate advisor(s) and the GPD. Not more than four credits may come from any of sources (A) - (C). Additionally, two credits in the major should come from L570 (Seminar in Ecology and Environmental Biology). Remaining credit hours come from dissertation research. Any changes described here to course requirements can (but do not have to) apply retroactively. A student may apply courses taken for a MS degree if they are approved by the student's advisory committee and the minor advisor.

### Concentration Area Requirements

#### Ecology/Population Biology

- BIOL-L575 Biodiversity and Ecosystem Functioning
- BIOL-L577 Theoretical Ecology
- BIOL-L578 Advanced Population Biology
- BIOL-L579 Community Ecology
- BIOL-L591 Plant Population Biology—An Experimental Approach
- BIOL-Z620 Advances in Ecosystem Science
- BIOL-Z620 Ecological Niches
- BIOL-Z620 Ecological Stoichiometry
- BIOL-Z620 Ecosystems and Global Change
- BIOL-Z620 Quantitative Biodiversity
- SPEA-E556 Limnology
- Or other courses approved by the EEB Graduate Program

#### Evolutionary Biology

- BIOL-L505 Molecular Biology of Evolution
- BIOL-L533 Evolution of Genes and Genomes
- BIOL-L534 Evolution of Proteins and Cells
- BIOL-L567 Evolution
- BIOL-L568 Evolutionary Genetics
- BIOL-Z620 Evolution of Development
- BIOL-Z540 Genetics of Structured Populations
- BIOL-Z620 Ethics, Race, and Population Genetics
- BIOL-Z620 Phylogenetics
- BIOL-Z620 Systematics
- GEOL-G562 Geometric Morphometrics
- INFO-I590 SNP Discovery and Population Genetics
- Or other courses approved by the EEB Graduate Program

#### Behavior/Physiology

- ABEH-A501 Techniques in Reproductive Diversity
- BIOL-L553 or Z620 Sensory Ecology
- BIOL-L560 Physiological Ecology
- BIOL-L581 Behavioral Ecology
- BIOL-Z460 Animal Behavior
- BIOL-Z466 Endocrinology
- BIOL-Z563 Comparative Neurobiology of Animal Behavior

- BIOL-Z566 Laboratory in Endocrinology
- BIOL-Z620 Behavioral Genetics
- PHSL-P548 Neuroethology
- Or other courses approved by the EEB Graduate Program

### Minor

Each EEB student must complete coursework for a minor. The minor may be obtained from a separate department (e.g., Informatics, Statistics, Environmental Science, Geology, Geography, Education), a relevant interdepartmental program (e.g., Animal Behavior), in a different graduate program in the Department of Biology (e.g., Genetics, Microbiology), or an 'Individualized minor'. EEB will waive the three credit 'toolkit' requirement in statistics for students minoring in Statistics (12 credit). Requirements are set by the unit administering the minor but will consist of a minimum of 6 credits up to a maximum of 12 credits).

### Ph.D. Qualifying Examination

Includes written oral and research components. All full-time Ph.D. students must pass part I of the examination (written and oral breadth of knowledge examination) by the end of the thirteenth week of their fourth semester and must pass part II of the qualifying examination (dissertation proposal defense) by the end of the sixth semester. In the event of failure or postponement of part II, students may retake the examination once, but no later than the end of their sixth semester.

### Thesis

Students write a dissertation based on scientific research.

### Final Examination

Public research seminar and oral defense of the dissertation before the student's research committee.

### Master of Science Degree Course Requirements

A total of 30 credit hours, of which at least 20 credit hours must be taken in approved evolution, ecology, and behavior (or related) courses. The courses must have a coherent focus within the general field of ecology, evolutionary biology, and behavior, and must be approved by the student's advisory committee.

### Thesis

A thesis or alternative research project is required.

### Final Examination

The thesis or alternative research project must be orally defended before the advisory committee.

### Graduate Minor in Evolution, Ecology, and Behavior

Students in other departments or in other programs in the Department of Biology may concentrate in one of the three areas of specialization (ecology/population biology, evolutionary biology, or behavior/physiology) by selecting two or more courses from the chosen area for a minimum of 6 credits. The student's minor advisor must be a core EEB or affiliated faculty member (<https://biology.indiana.edu/graduate/evolution-ecology-behavior/faculty/index.html>). The minor advisor may also approve of one course from each of two (or three) of the areas

described. A course may not simultaneously satisfy both major and minor course requirements. Course offerings outside of the list below can be used to satisfy the EEB minor. However, such substitutions require approval of the minor advisor and the EEB Graduate Program Director. A student may apply courses taken for a MS degree if they are approved by the student's advisory committee and the minor advisor. Students must achieve a grade of B- or better in a course to be able to count it towards the minor.

### Coursework

#### Ecology/Population Biology

- BIOL-L575 Biodiversity and Ecosystem Functioning (1.5 cr)
- BIOL-L577 Theoretical Ecology (3 cr)
- BIOL-L578 Advanced Population Biology (3 cr)
- BIOL-L579 Community Ecology (3 cr)
- BIOL-Z620 Advances in Ecosystem Science (3 cr)
- BIOL-Z620 Ecological Niches (1.5 cr)
- BIOL-Z620 Ecological Stoichiometry (1.5 cr)
- BIOL-Z620 Ecosystems and Global Change (1.5 cr)
- BIOL-Z620 Quantitative Biodiversity (1.5 cr)
- SPEA-E556 Limnology (3 cr)

#### Evolutionary Biology

- BIOL-L505 Evolution of Development (1.5 cr)
- BIOL-L533 Evolution of Genes and Genomes (3 cr)
- BIOL-L534 Evolution of Cells and Proteins (3 cr)
- BIOL-L567 Evolution (3 cr)
- BIOL-L568 Evolutionary Genetics (3 cr)
- BIOL-Z540 Genetics of Structured Populations (3 cr)
- BIOL-Z620 Ethics, Race, and Population Genetics (1.5 cr)
- BIOL-Z620 Systematics (1.5 cr)
- GEOL-G562 Geometric Morphometrics (3 cr)
- INFO-I590 SNP Discovery and Population Genetics (3 cr)

#### Behavior/Physiology

- ABEH-A501 Techniques in Reproductive Diversity (3 cr)
- BIOL-L560 Physiological Ecology (3 cr)
- BIOL-L581 Behavioral Ecology (3 cr)
- BIOL-Z460 Animal Behavior (3 cr)
- BIOL-Z466 Endocrinology (3 cr)
- BIOL-Z563 Comparative Neurobiology of Animal Behavior (3 cr)
- BIOL-Z620 or L553 Sensory Ecology (3 cr)
- BIOL-Z620 Behavioral Genetics (1.5 cr)

### Genome, Cell, and Developmental Biology (GCDB)

The GCDB program is administered by the Genome, Cell, and Developmental Biology (GCDB) faculty group in Biology and consists of formal coursework, laboratory research, and professional development. Students in the GCDB program learn how to plan, execute, and critically analyze scientific research. Other professional development includes learning how to give oral presentations and write high-quality research papers and grant proposals. The GCDB program provides students with the training and research experience necessary to pursue a diversity of careers, including

academic research, biomedical research, biotech industry, university-level teaching, among others.

### Doctor of Philosophy Degree

#### Course Requirements

Students must complete a total of 90 credit hours, which includes formal core coursework totaling 19.5 credits for the major. In addition, students must receive research ethics training (0-1.5 credits; see below) and complete a 6+ credit minor (credits vary by minor). GCDB students take a common core program of classes (see below). In addition, students typically do research rotations in three different labs during the first semester, after which they identify a lab in which to do their thesis research and form their advisory committee. Other courses can be substituted for the GCDB requirements pending permission from the student's Advisory Committee, the GCDB Program Director, and University Graduate School. Any changes described here to course requirements can (but do not have to) apply retroactively.

#### Courses for the GCDB Major

- BIOC-B511 Duplicating and Expressing the Genome (3.0 cr)
- BIOL-L501 Rotations (3.0 cr)
- BIOL-L523 Critical Analysis Lit. (1.5 cr)
- BIOL-L585 Genetics (3.0 cr)
- BIOL-L586 Cell Biology (3.0 cr)
- BIOL-L587 Dev. Biology (3.0 cr)
- BIOL-Z620 Bioinformatics 2 Go (1.5 cr)
- BIOL-Z620 Grant Writing (1.5 cr)
- BIOL-Z620 Research Ethics and Career Development (1.5 cr) or Responsible Conduct of Research workshops offered through the Offices of the Vice Provost for Graduate Education and Health Sciences, Research Compliance, and the Vice Provost for Research.

#### Minor

Each student must select a minor field distinct from the chosen degree. The student has the option to select any minor in consultation with their advisor and the GCDB Graduate Program Director. The minor may be from within biology or from other units on campus. The requirements for the minor are decided by the minor-granting program.

#### Ph.D. Qualifying Examination

Includes written, oral and research components. All full-time Ph.D. students must take the qualifying examination by the end of the fourth week of their fifth semester. In the event of failure or postponement, students may retake the examination once, but no later than the end of the twelfth week of their fifth semester.

#### Thesis

Students write a thesis based on their scientific research and are expected to publish the findings of their scientific research in peer-reviewed journals.

#### Final Examination

Public research seminar and oral defense of the dissertation before the student's research committee.

### Master of Science Degree (Students are not currently being admitted to this program)

#### Course Requirements

A total of 30 credit hours is required for the degree. These 30 hours are composed of 19.5 credit hours of required courses plus an additional 11.5 credit hours of L800 laboratory research and / or other courses. Coursework must be approved by the student's advisory committee and the GCDB Graduate Program Director. Note that students are expected to do research rotations (L501) in at least three laboratories during the fall of their first semester.

#### Thesis

The students are required to prepare a thesis that must be approved by the student's advisory committee.

#### Final Examination

The final exam normally includes a public research seminar and oral defense of the thesis. Alternative formats for the final examination are possible and require the approval of the advisory committee and GCDB Graduate Program Director.

#### Graduate Minor in Genetics

A faculty member whose primary affiliation is with the Department of Biology, and who has expertise in Genetics, must serve on the student's Advisory Committee as the minor advisor and must participate in designating required course work. The minor advisor will determine whether courses meet the minor requirement in accordance with the requirements outlined below. The Genetics minor requires a minimum of 6 credits of course work selected from the list of courses below. Students may substitute courses for those on this list only upon approval of their Advisory Committee, the GCDB Director, and University Graduate School. A GCDB student can choose to minor in other fields that match their research and career aspirations with approval of their Advisory Committee and the GCDB Director. Any course requirements described here can (but do not have to) apply retroactively. A grade of B- or better is required for a course to count towards the Genetics minor. A student may apply courses taken for a MS degree if the courses are approved by the student's advisory committee, the minor advisor, GCDB Program Director, and University Graduate School.

#### Course Listings for Genetics Minor

- BIOC-B512 Biochemical mechanisms of DNA repair (1.5cr)
- BIOC-B513 Cell response to DNA damage (1.5cr)
- BIOC-B680 Molecular Mechanisms of Cancer (1.5 cr)
- BIOL-L511 Advanced Gene Regulation (3cr)
- BIOL-L533 Evolution of Genes and Genomes (3cr)
- BIOL-L567 Evolution (3cr)
- BIOL-L568 Evolutionary Genetics (3cr)
- BIOL-L585 Genetics (3cr)<sup>2</sup>
- BIOL-L586 Cell Biology (3cr)<sup>2</sup>
- BIOL-L587 Developmental Biology (3cr)<sup>2</sup>
- BIOL-M511 Molecular Biology of Prokaryotes (3cr)

- BIOL-M541 Virology and Host Responses (3cr)
- BIOL-M585 Microbial Genetics and Pathogenesis (3cr)
- BIOL-Z562 Genetics of Behavior (1.5cr)
- BIOL-Z620 Bioinformatics-2-Go (1.5 cr) <sup>2</sup>
- BIOL-Z620 Evolution of Proteins and Cells (3cr)
- BIOL-Z620 Introduction to Computational Data Processing in Biology (1.5cr)
- BIOL-Z620 Introduction to Computational Workflow Design in Biology (1.5cr)
- BIOL-Z620 CyberInfrastructure-enabled Computational Genome Science (3cr)
- BIOL-Z620 Phylogenetics (3cr)
- BIOL-Z620 Evolution (3cr)
- BIOL-Z620 Introduction to Genomics and Bioinformatics (1.5cr)
- BIOL-Z620 Microbial Genetics and Techniques (1.5cr)
- BIOL-Z620 Chromosome and Genome Biology Journal Class<sup>3</sup>
- BIOL-Z620 Cell Biology Journal Class<sup>3</sup>
- BIOL-Z620 Methods in Epigenomics
- BIOL-Z620 The Legacy of *Drosophila* (3cr)
- BIOL-Z620 Digital Imaging and Light Microscopy (1.5cr)
- BIOL-Z620 Biological Electron Microscopy (1.5cr)
- BIOL-Z620 Genetics of Human Metabolic Disease (3cr)
- BIOL-Z620 Recent advances in genetics and cell biology (3cr)
- INFO-I519 Introduction to Bioinformatics (3cr)
- INFO-I590 SNP Discovery and Population Genetics (3cr)
- MSCI-M580 Molecular Biology of Cancer (3cr)
- PHSL-P550 Physiology of Cancer Journal Class<sup>3</sup>
- PSY-P467 Diseases of the Nervous System (3cr)
- PSY-P526 Neurobiology of Learning and Memory (3cr)
- PSY-P566 Molecular and Cellular Neurobiology (3cr)

<sup>1</sup> Or an equivalent course at IU or graduate work transferred from another university with approval of the GCDB Graduate Program Director

<sup>2</sup> GCDB students cannot use these courses for the Genetics minor due to overlap with major degree requirements.

<sup>3</sup> The same journal class cannot be taken twice to fulfill the major and minor. However, different journal classes can be taken for the major and minor.

### Microbiology

Microbiology is an interdisciplinary graduate program that provides training in the microbiology of bacteria and viruses. #Students in our program learn how to critically analyze and plan scientific research, present seminars, write high-quality research papers, and obtain grant funding. #Our graduate program provides students with the training and research experience necessary to pursue a wide range of careers in academic biomedical research,

the biotech industry, government science, and university-level teaching.

### Doctor of Philosophy Degree Course Requirements

The Microbiology program requires a total of 90 credit hours. Of these, 22.5 credit hours (21 credits if Responsible Conduct of Research workshop is taken to fulfill the Ethics requirement) come from the Core Program course work listed below. Most Advanced Courses are half-semester 1.5-credit hour courses in areas requested by students. Each student must also take Grant Writing and Research Ethics and Career Development courses. Students also typically do research rotations in three different labs during the first semester, after which they identify a lab in which to do their thesis research and form their advisory committee.

The courses that make up the 22.5 credit hours for the Microbiology major are indicated below. Other appropriate courses may be substituted in their place with permission from the Advisory Committee and the Microbiology Graduate Program Director. Any changes described here to course requirements can (but do not have to) apply retroactively.

### Major Course Requirements

- \* BIOL-M511 Molecular Biology of Prokaryotes (3.0 cr)
- \*BIOL-M541 Virology and Host Responses (3.0 cr)
- BIOL-M585 Microbial Genetics and Pathogenesis (3.0 cr)
- BIOL-L500 Independent study (3.0 cr)
- BIOL-L523 Critical Analysis of Scientific Literature (1.5 cr)
- BIOL-M500 Research rotations (3.0 cr)
- BIOL-Z620 Grant Writing (1.5 cr)
- BIOL-Z620 Ethics and Career Development (1.5 cr) or Responsible Conduct of Research workshops offered through the Offices of the Vice Provost for Graduate Education and Health Sciences, Research Compliance, and the Vice Provost for Research.
- Elective Advanced Course work - Z620, one or more biochemistry course, one or more bioinformatics courses, or other relevant coursework (6.0 credits)

\*Only one of these courses needs to be completed for the major

### Minor

Each student must select a minor field distinct from the chosen degree. The student has the option to select any minor in consultation with their advisor and the Microbiology Graduate Program Director. Suggested minors for this degree include Bacteriology (for students in Virology focused labs) and Virology (for students in bacteriology focused labs). The minor may be from within biology or from other units on campus. The requirements for the minor are decided by the minor-granting program.

### Ph.D. Qualifying Examination

Includes written, oral and research components. All full-time Ph.D. students must take the qualifying examination by the end of the fourth week of their fifth semester. In the event of failure or postponement, students may retake the



examination once, but no later than the start of their third year in graduate school.

### Thesis

Students write a thesis based on scientific research.

### Final Examination

Public research seminar and oral defense of the dissertation before the student's research committee.

### Master of Science Degree (Students are not currently being admitted to this program)

#### Course Requirements

A total of 30 credit hours. At least 12 credit hours must be courses from the core Microbiology curriculum other than M500 rotation credits or research credits. The courses must be approved by the student's advisory committee and the Microbiology Graduate Program Director.

Students are expected to rotate (M500) in at least three laboratories during the fall semester.

### Thesis

The students are required to prepare a research-based thesis that must be approved by the student's advisory committee.

### Final Examination

Normally must be orally defended before the advisory committee.

### Graduate Minors in Microbiology, Bacteriology, and Virology

Students in other departments or in other programs in the Department of Biology may minor in Microbiology, Bacteriology or Virology by completing a minimum of 6 graduate credits from the courses listed below. Students in the Microbiology program may minor in Bacteriology or Virology so long as a course does not simultaneously satisfy both major and minor course requirements. A minor advisor must join the student's Advisory Committee and participate in designating required course work. This minor advisor will approve courses that meet the minor requirement. Course offerings outside the list below can be used to satisfy these minors, but such substitutions require approval of the minor advisor and the Microbiology Graduate Program Director. An overall average of B (3.0) or better is required in courses for each of these minors.

#### Course listings from Microbiology Minor

- BIOL-M430 Virology Lecture (3 cr.)
- BIOL-M440 Medical Microbiology: Lecture (3 cr.)
- BIOL-M460 Microbial Evolution (3 cr.)
- BIOL-M480 Microbial and Molecular Genetics (3 cr.)
- BIOL-M511 Molecular Biology of Prokaryotes (3 cr.)
- BIOL-M525 Microbial Physiology and Biochemistry (3 cr.)
- BIOL-M541 Virology and Host Responses (3 cr.)
- BIOL-M550 Microbiology (3 cr.)
- BIOL-M585 Microbial Genetics and Pathogenesis (3 cr.)
- BIOL-Z620/M440 Medical Microbiology and Medical Immunology (3 cr.)
- BIOL-Z620 Quantitative Biodiversity (1.5 cr)

#### Course listings from Bacteriology Minor

- BIOL-M 440 Medical Microbiology: Lecture (3 cr.)
- BIOL-M 460 Microbial Evolution (3 cr.)
- BIOL-M 480 Microbial and Molecular Genetics (3 cr.)
- BIOL-M 511 Molecular Biology of Prokaryotes (3 cr.)
- BIOL-M 525 Microbial Physiology and Biochemistry (3 cr.)
- BIOL-M 550 Microbiology (3 cr.)
- BIOL-M 585 Microbial Genetics and Pathogenesis (3cr.)
- BIOL-M 620 Medical Microbiology and Medical Immunology (3 cr.)
- BIOL-Z620 Quantitative Biodiversity (1.5 cr)

#### Coursework Available for Virology minor

- BIOL-M 416 Biology of AIDS (3 cr.)
- BIOL-M 430 Virology Lecture (3 cr.)
- BIOL-M 541 Virology and Host Responses
- BIOL-M 620 Medical Microbiology and Medical Immunology (3 cr.)
- BIOL-Z620/L321 Human Immunology (3 cr)
- BIOL-Z620/L410 Viral Immunology (3 cr)

### Master of Arts for Teachers Degree

The Master of Arts for Teachers in biology is offered by the University Graduate School (not the School of Education) to provide training beyond the bachelor's degree for those who intend to teach in junior or senior high school and who wish additional training in biology. Each student in the program must possess a teacher's certificate by the time the degree is conferred, with the exception of international students who intend to return to their native country.

#### Admission Requirements

Bachelor's degree from a regionally accredited institution with sufficient hours in biology to enable the student to take courses carrying graduate credit.

#### Course Requirements

A total of 36 credit hours, of which a minimum of 25 credit hours must be in courses in the biological sciences that carry graduate credit; the remaining 11 credit hours may be in education. All programs of study must be approved by the Master of Arts for Teachers program advisor.

#### Certification Requirements

For a complete list of courses in education and other areas that are required for provisional certification, consult the School of Education Undergraduate Program Bulletin.

### Faculty

#### Chairperson

Professor Scott Michaels\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Carlos Miller Professor

Craig Pikaard\*

**Class of 1968 Chancellor's Professor**

Roger P. Hangarter\*

**Rudy Professor of Biology**

Sue Carter\* (Emerita)

**Clyde Culbertson Professor of Biology**

Clay Fuqua

**Distinguished Professors**

Yves V. Brun\* (Emeritus), Keith Clay\* (Emeritus), Lynda F. Delph\*, Matthew Hahn, Roger P. Hangarter\*, Roger Innes\*, Thomas C. Kaufman\* (Emeritus), Ellen D. Ketterson\*, Curtis M. Lively\*, Michael Lynch\* (Emeritus), Jeffrey D. Palmer\* (Emeritus), Craig Pikaard\*, Michael Wade\*, Malcolm Winker

**Professors**

Stephen Bell\*, James José Bonner\* (Emeritus), Volker Brendel\*, Brian R. Calvi\*, Peter T. Cherbas\* (Emeritus), Pranav Danthi\*, Gregory E. Demas\*, David Dilcher\* (Emeritus), Thomas F. Donahue\* (Emeritus), Patricia L. Foster\* (Emerita), Gerald Gastony\* (Emeritus), Spencer R. Hall\*, Richard Hardy\*, George Hegeman\* (Emeritus), Laura M. Hurley\*, Daniel B. Kearns\*, David M. Kehoe\*, Justin P. Kumar\*, Jay Lennon\*, Paul Mahlberg (Emeritus)\*, George Malacinski\* (Emeritus), Scott Michaels\*, Armin P. Moczek\*, Leonie Moyle\*, Tuli Mukhopadhyay\*, Craig Nelson\* (Emeritus), John Patton\*, Richard P. Phillips\*, Elizabeth C. Raff\* (Emerita), Sidney L. Shaw\*, Milton W. Taylor\* (Emeritus), W. Dan Tracey\*, Maxine A. Watson\* (Emerita), David White\* (Emeritus), Miriam E. Zolan\* (Emerita)

**Associate Professors**

Alan D. Bender\* (Emeritus), Yean Chooi\*, Ankur Dalia\*, Soni Lacefield\*, Jennifer Lau\*, Jake McKinlay\*, Irene Newton\*, Erik Ragsdale\*, Heather L. Reynolds\*, Kimberly Rosvall\*, Dean Rowe-Magnus\*, Whitney Schlegel\*, G. Troy Smith\*, Nicholas Sokol\*, Stefan J. Surzycki\*, Michael R. Tansey\* (Emeritus), Jason Tennesen\*, Andrew Zelhof\*

**Assistant Professors**

Manuel Baizabal\*, Cristina Landeta\*, Cris Ledón-Rettig\*, Julia van Kessel\*, Xindan Wang\*, Leslie Weaver\* Gabriel Zenter\*

**Senior Scientists**

Lucy Cherbas (Emerita), Kevin R. Cook, Eric Knox, Annette Parks, Ho-Ching Tiffany Tsui

**Associate Scientists**

Gail Hardy, Kristin Klueg, Stephanie Mauthner, Paul Rothrock (Emeritus), Cale Whitworth, Sam Zheng

**Assistant Scientists**

Farrah Bashey-Visser, Jun Liu, Arthur Luhur, Daniel Mariyappa, David Morgan, Ellen Popodi, Jim Powers, Doug Rusch

**Adjunct Professors**

Carl Bauer\* (Molecular and Cellular Biochemistry), Karen Bush (Biotechnology), Lingling Chen\* (Molecular and

Cellular Biochemistry), David Giedroc\* (Chemistry), Andrea Hohmann\* (Psychological and Brain Sciences), Elizabeth Housworth (Mathematics), Elisabeth Lloyd\* (History and Philosophy of Science), Hui-Chen Lu\* (Psychological and Brain Sciences), Vicki Meretsky\* (Public and Environmental Affairs), Kenneth Nephew\* (Medical Sciences), Martha Oakley\* (Chemistry), P. David Polly\* (Earth and Atmospheric Sciences), Dale Sengelaub\* (Psychological and Brain Sciences), Haixu Tang (Informatics), Michael VanNieuwenhze (Chemistry), Claire Walczak (Medical Sciences), Meredith West\* (Psychological and Brain Sciences, Emerita), Adam Zlotnick\* (Molecular and Cellular Biochemistry)

**Adjunct Associate Professors**

Matthew Bochman\* (Molecular and Cellular Biochemistry), David Daleke\* (Medical Sciences), James T. Drummond\* (Molecular and Cellular Biochemistry), Wayne Forrester (Medical Sciences), Peter Hollenhorst\* (Medical Sciences), Heather Hundley\* (Medical Sciences), Anirban Mitra\* (Medical Sciences), Hengyao Niu\* (Molecular and Cellular Biochemistry), Heather O'Hagan (Medical Sciences), Anne Prieto\* (Psychological and Brain Sciences), Todd Royer (Public and Environmental Affairs)

**Adjunct Assistant Professors**

Ana Bento\* (School of Public Health), Richard Carpenter\* (Medical Sciences), J.P. Gerdt\* (Chemistry), Joshua Ziarek\* (Molecular and Cellular Biochemistry)

**Director of Graduate Studies**

Heather Reynolds

**Courses**

- BIOL-B 351 Fungi (3 cr.) This course is not currently being offered.
- BIOL-B 352 Fungi: Laboratory (2 cr.) This course is not currently being offered.
- BIOL-B 364 Summer Flowering Plants (4-5 cr.)
- BIOL-B 368 Ethnobotany (3 cr.)
- BIOL-B 371 Ecological Plant Physiology (3 cr.)
- BIOL-B 372 Ecological Plant Physiology Laboratory (2 cr.) This course is not currently being offered.
- BIOL-B 373 Mechanisms of Plant Development (4 cr.) This course is not currently being offered.
- BIOL-B 415 Phytogeography (2 cr.) This course is not currently being offered.
- BIOL-B 423 Introduction to Paleobotany (3 cr.) This course is not currently being offered.
- BIOL-B 445 Experimental Molecular and Cellular Biology of Eukaryotes (4 cr.)
- BIOL-B 511 Duplicating and Expressing the Genome (3 cr.)
- BIOL-B 530 Anatomy and Morphology Seminar (arr. cr.) P: Consent of instructor. Seminars will include current research studies in plant anatomy and morphology. This course is not currently being offered.
- BIOL-B 555 Special Topics in Plant Systematics (3 cr.) Topics vary from year to year. Examples of subjects to be treated: phylogeny and families of flowering plants, biology of ferns, biosystematics, molecular markers in populational biology,

and systematics. Enrollment of advanced undergraduates encouraged.

- BIOL-B 560 Seminar in Systematics (arr. cr.) P: Consent of instructor. Topics vary each semester.
- BIOL-B 570 Seminar in Physiology and Molecular Biology of Plants (arr. cr.) P: Consent of instructor. This course is not currently being offered.
- BIOL-B 572 Photobiology (3 cr.) P: S305 or L367 or CHEM C483 or equivalent. Biochemical and biophysical relationship between light and biological systems. Topics will include photosynthesis, visual processes, photorespiration, phototaxis, bioluminescence, and photomorphogenesis, with emphasis on photosynthesis.
- BIOL-B 573 Special Topics in Plant Physiology (2-5 cr.) P: Consent of instructor. Advanced topics in plant physiology. This course is not currently being offered. With consent of instructor, may be taken more than once for credit.
- BIOL-B 576 Developmental Plant Physiology (3 cr.) P: Consent of instructor. Chemically oriented; examination of substances uniquely involved in growth and development in higher plants. Application of information to lower plants only briefly discussed. This course is not currently being offered.
- BIOL-B 577 Plant Biochemistry (2 cr.) A comparative treatment of selected biochemical topics, emphasizing unique or important processes in plant metabolism and development. This course is not currently being offered.
- BIOL-L 465 Advanced Field Biology (3 cr.)
- BIOL-L 473 Ecology (3 cr.)
- BIOL-L 474 Field and Laboratory Ecology (2 cr.)
- BIOL-L 479 Evolution and Ecology (4 cr.) This course is not currently being offered.
- BIOL-L 500 Independent Study (arr. cr.) P: Written consent of faculty member supervising research.
- BIOL-L 501 Independent Study: Laboratory Rotations (3 cr.) P: Written consent of faculty member supervising work. Supervised work. S/F grading.
- BIOL-L 504 Genome Biology for Physical Scientists (3 cr.) An accelerated but introductory treatment of contemporary issues in molecular biology and genetics including genome structures, gene function and regulation, mapping, proteins, and molecular evolution. Intended to meet the needs of graduate students in mathematics, physics, chemistry, computer sciences, and informatics who are considering working in biological areas or collaborating with biologists.
- BIOL-L 505 Molecular Biology of Evolution (3 cr.) P: Senior or graduate standing and consent of instructor. An integrative approach to the link between development and the evolution of morphology. Topics: evolution of developmental mechanisms and of developmental regulatory genes, production of evolutionary changes through changes in developmental processes, developmental constraints, and origins of major body plans.
- BIOL-L 509 Field Exercises for Biology Education (1-5 cr.) L509 is a graduate course for students in biology and education with an intended career in biology education. Credits are variable (1-5) and will be arranged. Students will design field exercises based at the Indiana University Research and Teaching Preserve on topics in organismal biology and ecology appropriate for public school and other outside groups.
- BIOL-L 510 Introduction to the Research Laboratory (3 cr.) P: Graduate standing. Objectives and techniques of biological research. Completion of a one-semester research problem with a faculty member.
- BIOL-L511 Advanced Gene Regulation (3 cr.) The course format will be a daily discussion of primary literature focused on gene regulation and development.
- BIOL-L 519 Bioinformatics: Theory and Application (3 cr.) Overview of theory and applications in bioinformatics, based on fundamentals of molecular biology and information sciences. Common problems, data, and tools in the field are outlined. These include biosequence analysis, alignment and assembly, genomics, proteomics and phylogenetics, biological databases and data mining, and Internet bio-information services.
- BIOL-L 520 Seminar in Genetics (arr. cr.) P: L364 or Z420 or equivalents. This course is not currently being offered.
- BIOL-L 521 Problems in Genetics—Higher Organisms (3 cr.) P: L364 or equivalent. Selected topics in the genetics of higher organisms emphasizing studies at the molecular level. This course is not currently being offered.
- BIOL-L 522 Advanced Eukaryotic Molecular Genetics (3 cr.) P: Consent of instructor; beginning course in genetics. Correlation of genetic data with changes in chromosome structure and number. Mechanics of chromosome behavior in crossing over and disjunction. This course is not currently being offered.
- BIOL-L 523 Critical Analysis of the Scientific Literature (1.5 cr.) Detailed analysis of current research papers in biology. Emphasis on experimental design, research methods, interpretation of results, and suitability of controls. Generally taken in the first semester of graduate residence. Topics may vary to suit specific fields (e.g., molecular, cellular, and developmental biology and genetics, or ecological and evolutionary biology).
- BIOL-L 529 Bioinformatics in Molecular Biology and Genetics: Practical Applications (4 cr.) P: I501, I502, L519, or consent of instructor. Practical experience in a range of data analysis and software engineering methods applied to molecular biology data.
- BIOL-L 533 Evolution of Genes and Genomes (3 cr.) Provides a broad conceptual overview of issues in molecular and genomic evolution, with an emphasis on population-genetic issues.
- BIOL-L 534 Evolution of Proteins and Cells (3 cr.) This course integrates modern evolutionary theory with our knowledge of phylogenetic variation in protein architecture and cell biological features, in both eukaryotes and prokaryotes.
- BIOL-L 553 Sensory Ecology (3 cr.) Sensory systems provide animals all the information they have about their environment, therefore they are under natural and sexual selection. This course

- examines how sensory systems transduce and extract environmental information and drive evolutionary divergence. Course includes lectures, discussion of scientific literature, and visits from guest speakers.
- BIOL-L 555 Alternative Approaches to Teaching College Biology (2 cr.) Frameworks for teaching college biology. Addresses different teaching objectives (knowledge, applications, scientific thinking, ethical and policy considerations); different teaching methods (lectures, readings, recitations, discussions, exercises, experiments, projects); student heterogeneity (expectations, abilities, development, learning styles); evaluation and grading; course and curriculum design; and evaluation and improvement of teaching.
  - BIOL-L 560 Physiological Ecology (3 cr.) Influence of the abiotic environment on energy and material transfers in individual organisms, with emphasis on terrestrial animals.
  - BIOL-L 567 Evolution (3 cr.) P: Graduate standing in psychology or biology or consent of the instructor. Topics include quantitative genetics, population genetics, and strategic models of natural selection. Special topics include: life history theory, sex and sexual selection, kin selection, shifting-balance theory, speciation, macroevolution, and comparative methods.
  - BIOL-L 568 Evolutionary Genetics (3 cr.) A graduate-level course with combined lecture and discussion format. The course addresses the fundamentals of ecological and evolutionary processes at the genetic and genomic level, and connects these principles to empirical data in a broad range of organisms, with an emphasis on pivotal studies in the historical and contemporary primary literature.
  - BIOL-L 570 Seminar in Ecology and Environmental Biology (1 cr.) P: Consent of instructor. Presentations and discussions of current research and professional development in Evolution, Ecology, and Behavior. May be taken more than once.
  - BIOL-L 572 Microbial Ecology (3 cr.) Principles of microbial ecology with emphasis on the population, community, and ecosystem ecology of bacteria and fungi.
  - BIOL-L 573 Quantitative Genetics and Microevolution (1.5-3 cr.) Explores the fundamentals of the quantitative genetic approach to understanding evolutionary process. Topics include the conceptualization and measurement of selection and the response to selection, the measurement and consequences of genetic architecture, as well as application of these ideas to classical and modern evolutionary theory.
  - BIOL-L 575 Biodiversity and Ecosystem Functioning (3 cr.) P: L473 and L474 (or equivalent) or instructor's consent. Does biodiversity matter? Analysis of relationships between biodiversity and ecosystem functioning. Emphasis on current literature, including theoretical and empirical work. Lectures will alternate with class discussion and debate.
  - BIOL-L 577 Theoretical Ecology (3 cr.) Empowers students to develop and analyze ecology-based models and use them as statistical hypotheses. Topics include nonlinear one- and multi-species dynamics; stability analysis; bifurcations; maximum likelihood; model competition and information criteria.
  - BIOL-L 578 Advanced Population Biology (3 cr.) P: Courses in ecology, genetics, and basic calculus, and permission of instructor. A detailed assessment of population-ecological and population-genetic theory, and the factors determining the size and composition of animal populations in nature.
  - BIOL-L 579 Community Ecology (3 cr.) P: Ecology and genetics. Survey of ecological and evolutionary topics between population and ecosystem levels. Review of scientific levels of selection and speciation. Major emphasis on interactions among populations (consumer-producer, competition, symbiosis, etc.) and community analysis (island biogeography, niche, diversity, and community structure).
  - BIOL-L 580 Introduction to Research (1 cr.) Individual faculty from the various graduate programs in biology present seminars on their research programs. Discussion between students and faculty about possible thesis research projects is encouraged.
  - BIOL-L 581 Behavioral Ecology (3 cr.) Integrated elements of ethology, physiology, ecology, and evolutionary biology providing a synthetic approach to animal behavior. Emphasis on integrated studies providing new insights into both evolutionary and mechanistic questions. Students are asked to analyze the literature critically and debate controversial issues actively.
  - BIOL-L 585 Genetics (3 cr.) Focuses on genome organization and transmission and molecular genetics in a number of prokaryotic and eukaryotic systems. Topics include molecular mechanisms of mutation, suppression, replication, meiosis, recombination, complementation, and approaches to identifying and analyzing genes. Introduces students to the use of databases, programs for computational analysis of DNA and protein sequence data, and high-throughput methods in genomics and proteomics.
  - BIOL-L 586 Cell Biology (3 cr.) Critical analysis of recent advances in our understanding of molecular organization and function of cellular structures. The emphasis of this course will be on eukaryotic cells. Topics include membrane organization, cytoskeleton assembly and functions, signal transduction, cell-cycle regulation, protein sorting, and vesicle trafficking.
  - BIOL-L 587 Developmental Biology (3 cr.) Evaluation of classical and current molecular and genetic approaches to studying development of eukaryotic organisms. A significant portion of the course is devoted to discussing recent findings from molecular genetic studies in *Drosophila* and *C. elegans*.
  - BIOL-L 590 Seminar in Molecular, Cellular, and Developmental Biology (2 cr.) P: Consent of instructor. Presentation and discussion of topics in molecular and cellular biology as seminar by students. Topics from current literature. Concentration on a particular area each semester to



- be announced before registration. S/F grading. This course is not currently being offered.
- BIOL-L 591 Plant Population Biology—An Experimental Approach (3 cr.) P: Ecology course and evolution course. The mechanisms by which plants, as individuals, contribute to development of population structure. Experimental studies of intra- and inter-specific mechanisms of population regulation, reproduction, and vegetative growth. Emphasis on development and physiological characteristics which determine mode of interaction. Greenhouse projects designed and conducted by students.
  - BIOL-L 600 Special Topics in Genetics (arr. cr.) P: L364 or equivalent. Topics not extensively treated in other courses, e.g., population genetics, human genetics, immunogenetics, biochemical genetics of clones of mammalian cells. Topic presented will not be duplicated within three to five years. L600 carries credit in plant sciences, microbiology, and zoology programs. This course is not currently being offered.
  - BIOL-L 800 Research (1-15 cr.)
  - BIOL-M 300 Biomedical Sciences Documentation (1 cr.)
  - BIOL-M 310 Microbiology (3 cr.) This course is not currently being offered.
  - BIOL-M 315 Microbiology Laboratory (2 cr.)
  - BIOL M416 Biology of AIDS (3 cr.)
  - BIOL-M 430 Virology: Lecture (3 cr.)
  - BIOL-M 435 Viral-Tissue-Culture Laboratory (3 cr.) P: or C: M430, or consent of instructor.
  - BIOL-M 440 Medical Microbiology: Lecture (3 cr.) P: BIOL L211. R: BIOL M250, M255.
  - BIOL-M 460 Microbial Evolution (3 cr.)
  - BIOL-M 465 Environmental Microbiology: Laboratory (3 cr.) This course is not currently being offered.
  - BIOL-M 480 Microbial and Molecular Genetics (3 cr.)
  - BIOL-M 485 Microbial and Molecular Genetics Laboratory (3 cr.)
  - BIOL-M 500 Introduction to Research: Laboratory Rotations (Microbiology) (3 cr.)
  - BIOL-M 511 Molecular Biology of Prokaryotes (3 cr.) P: CHEM C584. The course will first develop an understanding of nucleic acid structure and function to a professional level, then use these principles to explore molecular aspects of gene expression and evolution. Emphasis will be on prokaryotes.
  - BIOL-M 512 Molecular Biology of AIDS Virus (3 cr.) P: CHEM C341 and BIOL L311. A detailed consideration of the human immunodeficiency virus (HIV, causative agent of AIDS). The functions of the HIV genes and how those functions affect pathology and normal cellular mechanisms.
  - BIOL-M 525 Microbial Physiology and Biochemistry (3 cr.) P: Graduate standing and C483 or M350 or equivalent. The course will consider topics in physiology and biochemistry of eukaryotic and prokaryotic microorganisms. Subjects include membrane physiology and regulatory networks in metabolism and gene expression.
  - BIOL-M 541 Virology and Host Responses (3 cr.)
  - BIOL-M 545 Medical Microbiology Laboratory (1 cr.) P: M540. Laboratory experiments to illustrate material discussed in M540.
  - BIOL-M 550 Microbiology (3 cr.) P: Two semesters of college chemistry. Application of fundamental principles to the study of microorganisms. Significance of microorganisms to humans and their environment. Critical evaluation of current microbiological literature.
  - BIOL-M 575 Human Parasitology (4 cr.) P: BIOL M310 and M315. Biology of human parasites focusing on their etiology, epidemiology, immunology, diagnosis, and treatment. Major groups of protozoa, helminths, and medically important arthropods covered. Independent research assigned on a special topic. Lab presents both live and fixed materials complementing lecture.
  - BIOL-M 585 Microbial Genetics and Pathogenesis (3 cr.)
  - BIOL-M 610 Recent Advances in Microbiology (1-3 cr.) P: Graduate standing in microbiology or related area. Course content changes each semester so that over a cycle of several years, major research areas are covered. May be repeated for credit.
  - BIOL-M 612 Microbial Development (3 cr.) P: Graduate standing or consent of instructor. An analysis of recent publications concerned with the biochemistry of development in viral, prokaryotic, and simple eukaryotic systems. The topics vary and emphasize the regulatory aspects of development. Cell differentiation and cell-cell interactions are discussed. This course is not currently being offered.
  - BIOL-M 620 Medical Microbiology and Medical Immunology (3 cr.)
  - BIOL-M 800 Research (1-12 cr.)
  - BIOL-M 850 Seminar (1 cr.) P: Graduate standing in microbiology or consent of instructor. Reports on assigned topics of current interest. S/F grading. May be repeated for credit.
  - BIOL-Z 373 Entomology (3 cr.)
  - BIOL-Z 374 Invertebrate Zoology (3 cr.)
  - BIOL-Z 406 Vertebrate Zoology (5 cr.)
  - BIOL-Z 420 Cytology (3 cr.) This course is not currently being offered.
  - BIOL-Z 460 Animal Behavior (3 cr.)
  - BIOL-Z 466 Endocrinology (3 cr.)
  - BIOL-Z 476 Biology of Fishes (3 cr.)
  - BIOL-Z 486 Standards and Techniques of Animal Experimentation (2 cr.) This course is not currently being offered.
  - BIOL-Z 508 Advanced Ornithology (4 cr.) P: Z406. Emphasis on avian ecology, distribution, and behavior; discussion and evaluation of recent literature. Field work includes investigation of populations of a wintering species and a breeding species. This course is not currently being offered.
  - BIOL-Z 540 Genetics of Structured Populations (4 cr.) P: Consent of instructor. R: Z465, MATH M216, or equivalent. Survey of the theoretical basis of population genetics and a review of current problems and experimental findings. Content varies from year to year.
  - BIOL-Z562 Genetics of Behavior (1.5cr)
  - BIOL-Z 563 Comparative Neurobiology of Animal Behavior (3 cr.) This course addresses the intersection of two disciplines – animal behavior

and neurobiology. The course uses integrative and comparative approaches to understand how the nervous system controls animal behavior in natural contexts. Students will learn not only how neural circuits control behavior, how the behavioral output of neural circuits impacts life history and how neural circuits evolve to generate behavioral diversity.

- **BIOL-Z 566 Laboratory in Endocrinology (2 cr.)**  
P: Z466. Development and structure of major endocrine glands; their role in maintaining constancy of internal environment. Limited to 12 students. This course is not currently being offered.
- **BIOL-Z 576 Invertebrate Zoology Laboratory (2 cr.)**  
P: P or C: Z374. Laboratory and field studies of invertebrates, with an emphasis on experiments with living specimens.
- **BIOL-Z 620 Special Topics in Zoology (arr. cr.)**  
P: Advanced undergraduate or graduate standing. Topics not extensively treated in other courses, e.g., theoretical zoology, oceanography, reservoir limnology, human ecology, biochemistry, viruses and disease, critical analysis of the scientific literature, and other fields. Topics presented will be treated every three to five years.

## Faculty

### Curriculum

### Courses

### Faculty

### Director

Karen Bush

### Graduate Program Director

Daniel Watts

### Professors

Lingling Chen\*, Clay Fuqua,

### Associate Professors

Matthew Bochman \*, Jim Drummond\*

### Assistant Professors

Jesper Pallesen \*

### Professor of Practice

Karen Bush

### Senior Lecturer

Nancy Magill

### Instructor

Daniel Watts

## Courses

### Curriculum

### Courses

### Faculty

- **BIOT-T 500 Project Lab in Biotechnology (1-3 cr.)** Students explore different stages of scientific investigation by performing research using the techniques of biochemistry, molecular biology, genetics, and cell biology on problems related

to biotechnology. Students design and execute research projects under supervision of the Instructor in a teaching laboratory setting on problems chosen in consultation with the Instructor.

- **BIOT-T 501 Biochemical Instrumentation (2 cr.)** This laboratory course is focused on the biotechnology instrumentation used to characterize proteins. Students will learn theory as well as gain hands-on training in mass spectrometry, spectroscopic analysis of protein-ligand interactions, and capillary electrophoresis. Data generated will be used to develop lab reports.
- **BIOT-T 502 Mammalian Tissue Culture (2 cr.)** This laboratory course is designed to guide students through culturing and manipulations of different mammalian cell lines. Students will gain hands-on experience culturing cells, performing cell-based assays, and data interpretation.
- **BIOT-T 508 Theory and Application of Biotechnology Lecture (3 cr.)** This course teaches concepts of molecular and cellular biology and biochemistry to help understand recent advances made in biotechnology.
- **BIOT-T 515 Theory and Application of Biotechnology Lab (3 cr.)** Students will learn advanced laboratory techniques currently used in biotechnology with a focus on the application of molecular genetics and recombinant DNA technology.
- **BIOT-T 521 Contemporary Topics in Research Ethics (2 cr.)** The course focuses on the responsible conduct of research pertaining to biochemistry and biotechnology, including topics related to current research ethics in both academic and industrial research.
- **BIOT-T 525 Protein Expression, Purification, and Characterization Lab (3 )** This is a laboratory course focused on the expression of proteins in a variety of systems ranging from *E. coli*, yeast, and tissue culture. The students are involved in optimizing protein expression, affinity protein isolation, and biophysical characterization of their isolated proteins.
- **BIOT-T 540 Structure and Function of Biomolecules (3 cr.)** This applied biochemistry course provides mechanistic and applied analysis of proteins, enzymes and nucleic acids. Students also critique scientific papers and write ideas, as well as research the mechanism of action of specific drugs and present their findings.
- **BIOT-T 590 Graduate Research (1-12 cr.)** This course offers graduate research credit to MS Biotechnology students undertaking thesis research in an academic laboratory under direct supervision of faculty, postdoctoral fellows, or senior graduate students. Opportunities range from basic to translational research. Students will be exposed to, and often become proficient with, a wide range of state-of-the-art procedures such as PCR DNA amplification, DNA cloning and sequencing, directed mutagenesis, mutant screening, protein overexpression, purification and characterization, as well as viral, bacterial and tissue culture techniques.
- **BIOT-T 680 Specialized Topics in Biotechnology (1-3 cr.)** This is a specialized topics course. The

content of which will vary from one semester to the next depending on the instructor. The course content is meant to be specialized to offer a wide variety of topics of interest to Biotechnology graduate students and students minoring in Biotechnology. Instructors will include faculty in the Biotechnology program, other faculty whose research interests include Biotechnology, as well as visiting researchers from Biotechnology industries that will offer unique insights into research topics in the Biotechnology field.

## Biotechnology

**College of Arts and Sciences**

**Department of Biology**

**Departmental E-mail:** [gradbio@indiana.edu](mailto:gradbio@indiana.edu)

**Departmental URL:** <https://biology.indiana.edu/graduate/biotechnology/index.html>

### Curriculum

Curriculum

Courses

Faculty

### Degrees Offered

Master of Science in Biotechnology; Master of Science in Biotechnology Accelerated Program

### Master of Science in Biotechnology

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

#### Admission Requirements

Undergraduate major in one of the sciences and course work in the program in which a degree is sought. A degree in a related field (e.g. chemistry, mathematics, biology) may suffice if appropriate courses were included in the student's degree program. Students seeking admission may apply to the Biotechnology Degree Program online. Applications must include a complete entrance form, letters of recommendation, undergraduate transcripts. Scores on the Graduate Record Examination General Test are optional. The TOEFL score is required if the native language is other than English.

#### Grades

Students must maintain a minimum GPA of B (3.0) in order to remain in good standing in the Graduate School. Courses to be counted toward the degree must be passed with a grade of B- (2.7) or better.

#### Course Requirements

A total of 30 credit hours are required including a common core program consisting of the following courses: T500 (8 cr.), T501 (2 cr.), T502 (2 cr.), T508 (3 cr.), T521 (2 cr.), T540 (3 cr.), and T680 (1-8 cr.). The T680 courses that form part of the common core program are the following:

Regulatory Affairs/Drug Development; Biotech Products—Investment, Manufacturing, and Commercialization; Writing and Communication in Biotechnology; and Graduate Seminar—Contributing + Advancing on the Job. Other courses can be substituted for the common core requirements pending permission from the Director

of Graduate Studies. The remaining credit hours can be selected from an approved list of graduate courses in Biotechnology, Biochemistry, Informatics, Biology, Business, Chemistry, Law, Public and Environmental Affairs, Statistics, or Medical Sciences. Students who have completed T440 (or equivalent) as undergraduates will not be required to take T540. Instead, they will replace the credits with elective courses from the approved list, subject to the approval of the Director of Graduate Studies for Biotechnology.

- BIOT-T500 Project Lab in Biotechnology (8 )
- BIOT-T501 Biochemical Instrumentation (2 )
- BIOT-T502 Mammalian Tissue Culture (2 cr.)
- BIOT-T508 Theory and Application of Biotechnology Lecture (3 cr.)
- BIOT-T515 Theory and Application of Biotechnology Lab (3 cr.)
- BIOT-T521 Contemporary Topics in Research Ethics (2 cr.)
- BIOT-T525 Protein Expression, Purification, and Characterization Lab (3 cr.)
- BIOT-T540 Structure and Function of Biomolecules (3 cr.)
- BIOT-T590 Graduate Research (1-3 cr.)
- BIOT-T680 Specialized Topics in Biotechnology (1-3 cr.)

#### Thesis

A thesis is optional.

### Master of Science in Biotechnology Accelerated Program

The Accelerated Master's Program involves early admission of undergraduates at IU who plan to pursue a 5 year combined BA or BS with an MS degree in Biotechnology. These students should declare their intentions for a combined degree, and apply for admission to the MS program between their sophomore and junior years. Students will be given preferential admission into research laboratories to undertake independent research projects at the beginning of their third year of undergraduate studies and are expected to continue their research program for three years, and at the end of that period, submit an M.S. thesis.

#### Grades

For all graduate degrees, students must maintain a minimum GPA of B (3.0) in order to remain in good standing in the Graduate School. Courses to be counted toward the degree must be passed with a grade of B- (2.7) or better.

#### Course Requirements

A total of 30 credit hours are required including a common core program consisting of the following courses: T500 (8 cr.), T501 (2 cr.), T502 (2 cr.), T508 (3 cr.), T521 (2 cr.), T540 (3 cr.), and T680 (1-8 cr.). The T680 courses that form part of the common core program are the following:

Regulatory Affairs/Drug Development; Biotech Products—Investment, Manufacturing, and Commercialization; Writing and Communication in Biotechnology; and Graduate Seminar—Contributing + Advancing on the Job. Other courses can be substituted for the common core requirements pending permission from the Director

of Graduate Studies. The remaining credit hours can be selected from an approved list of graduate courses in Biotechnology, Biochemistry, Informatics, Biology, Business, Chemistry, Law, Public and Environmental Affairs, Statistics, or Medical Sciences. Students who have completed T440 (or equivalent) as undergraduates will not be required to take T540. Instead, they will replace the credits with elective courses from the approved list, subject to the approval of the Director of Graduate Studies for Biotechnology.

- BIOT-T500 Project Lab in Biotechnology (8 cr.)
- BIOT-T501 Biochemical Instrumentation (2 cr.)
- BIOT-T502 Mammalian Tissue Culture (2 cr.)
- BIOT-T508 Theory and Application of Biotechnology Lecture (3 cr.)
- BIOT-T515 Theory and Application of Biotechnology Lab (3 cr.)
- BIOT-T521 Contemporary Topics in Research Ethics (2 cr.)
- BIOT-T525 Protein Expression, Purification, and Characterization Lab (3 cr.)
- BIOT-T540 Structure and Function of Biomolecules (3 cr.)
- BIOT-T590 Graduate Research (1-3 cr.)
- BIOT-T680 Specialized Topics in Biotechnology (1-3 cr.)

### Thesis

A thesis is required.

### Final Examination

The thesis must be orally defended before the student's advisory committee.

### Graduate Minor in Biotechnology

Students from other graduate degree programs can receive a graduate minor in Biotechnology with at least 6 credit hours with an average grade of B or above in the following courses: T501 (2 cr.), T502 (2 cr.), T508 (3 cr.), T515 (3 cr.), T521 (2 cr.), T525 (3 cr.), T540 (3 cr.), T680 (1-8 cr.). Students may not count T521 toward the minor if they use it to fulfill a degree requirement for another program. Courses not explicitly listed may be used with the approval of the DGS for Biotechnology.

## Business

### Kelley School of Business

Departmental E-mail: [ksbdoc@indiana.edu](mailto:ksbdoc@indiana.edu)

Departmental URL: <http://www.kelley.iu.edu/doctoral/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Doctor of Philosophy. In addition, the Kelley School of Business offers the Master of Business Administration, Master of Science in Information Systems, Master of Science in Accounting, Master of Science in Finance, and

other graduate degrees. For details, see the Kelley School of Business Bulletin, Graduate Programs.

### Special School Requirements

(See also general University Graduate School requirements.)

Kelley School of Business doctoral candidates must defend their final dissertation defense within four years of successfully passing their qualifying exam.

### Admission

To apply for admission to the doctoral programs in business, the applicant must do the following:

1. For domestic and international applications: apply online [here](#).
2. Arrange for the submission of at least three letters of recommendation through the online application system from persons qualified to judge the academic potential of the applicant before the application deadline.
3. Prior to application, arrange to take either the Graduate Management Admission Test (GMAT) or the Graduate Record Examination (GRE) General Test. These tests are offered at numerous locations throughout the United States approximately four times each year and at less frequent intervals in many foreign countries. Official GMAT or GRE test scores must be no older than five years from the date of application and must be submitted directly from the exam administering organization.
4. For domestic applications: submit official transcripts of all college work taken and other support material directly to the attention of the Assistant Director of the Doctoral Programs, Kelley School of Business, 1309 E. Tenth Street, 7<sup>th</sup> Floor, HH 7303, Indiana University, Bloomington, IN 47405-1701.
5. For international applications: submit official transcripts of all college work taken and other support material directly to the Office of International Admissions, Indiana University, 400 E. Seventh Street, Poplars 221, Bloomington, IN 47405.
6. International applicants must submit a [TOEFL](#) exam score if your native language is not English. This requirement includes international students who have been or currently are in a US educational institution. TOEFL scores cannot be older than two years from the date of application. We do not accept IELTS scores. We do not consider TOEFL waivers any applicants who have not received their undergraduate or high school education in the U.S.

Detailed information on admission and financial aid as well as additional program data may be obtained from the doctoral programs office website: <https://kelley.iu.edu/programs/phd/admissions/index.cshtml>

The application deadline for August admission is the preceding December 15th, this is the priority consideration date. The early submittal of complete application materials is beneficial to the applicant. Late applications will be honored only if space is available.

Early applications are strongly recommended since admission spaces within some departments may be filled sooner than others. Admission to the doctoral



program in business is based on payment and submission of a complete application, as well as an individual's qualifications as evidenced by their application, personal statement, official transcripts, GMAT or GRE exam scores, TOEFL exam scores (for international applicants), three letters of reference and, if possible, a personal interview. Prospective students' applications for admission and supporting documentation are reviewed by the Assistant Director of Doctoral Programs and by faculty in the proposed major department.

While it is unusual, highly qualified students with career objectives clearly in mind may enter the doctoral programs in business directly from a baccalaureate program with the intention of working toward a doctoral degree. Most, however, will begin work toward the doctorate after obtaining the master's degree.

The Doctor of Philosophy (Ph.D.) in Business is granted to those students attaining the highest level of competence in business research. The objective of the Doctoral Program is to train researchers and scholars in various fields of business. The program attempts to attract outstanding students who desire to make a contribution to advanced business research and instruction.

### **Doctor of Philosophy Degree in Business Program Requirements**

The requirements for the Ph.D. program in business are fulfilled in three basic phases of study. Although these phases may overlap, the program requires a logical sequence of course work, qualifying examinations, and dissertation research.

#### **Phase I**

The Phase I requirements entail no minimum number of credit hours but focus instead on proficiency in business operations and the basic disciplines. The credit hours required for proficiency may be met either by exemption (through the acceptance of previous course work) or by taking courses or independent study after entering the program. Individual departments determine the appropriate requirements for their majors. Students go through counseling prior to registration for their first year in the program with their department representatives.

#### **Phase II**

The Phase II program of study is the central part of the student's doctoral-level course work. Therefore, it is critical that the courses be selected to achieve the student's educational objectives. The student must submit an approved course plan to the program office before the beginning of their second year in the program. This serves as a valuable plan for the student's coursework and ensures that the student will meet all of the major, minor and methods and analysis requirements early in the program. The student's course plan of study must be approved by advisors from both their major and minor areas of study. The Chairperson of Doctoral Programs reviews the course plan and approves the methods and analysis plan of study.

#### **Major Field**

The program of study for the student's major is planned in consultation with the student's major-field advisor and consists of a minimum of 18 credit hours of advanced graduate work. Major Fields include: Accounting, Business

Economics and Public Policy, Decision Sciences, Entrepreneurship, Finance, Management Information Systems, Marketing, Operations and Supply Chain Management, Organizational Behavior and Human Resource Management, Strategic Management and Organizational Theory. An overall GPA of at least 3.5 in the major courses is required. Students who have not attained this standard must have an additional course to meet the requirement in this area.

#### **Minor Field**

Each student selects one minor field, which requires a minimum of 9 credit hours. Minors are available in each of the major business fields, Accounting, Business Economics & Public Policy, Decision Sciences, Entrepreneurship, Finance, Management (Strategic Management and Organizational Theory), Information Systems, International Business, Marketing, Organizational Behavior, and Operations/Supply Chain Management. Minors may also be obtained in the following fields, but are not limited to: Economics, Political Science, Informatics, History, Mathematics, Psychology, Sociology, Statistics, and Law. The doctoral business minor provides the opportunity for the integration of other disciplines into the major area(s) of students majoring in the Kelley School of Business; it requires a minimum of 9 credit hours from a field outside the student's major field. The minor requirements for fields outside of the Kelley School of Business are determined by the department in which the minor is offered. For a minor concentration in one of the business fields, an overall GPA of at least 3.4 in the minor courses is required.

#### **Methodology and Analysis (M & A) Requirement**

All doctoral candidates must demonstrate competency in the areas of research methodology and statistical analysis. The minimum standard for M&A requirements is 12 credit hours with a 3.3 grade point average or higher, with no grade less than B-. Students who have not attained this standard must have a fourth M&A course to meet the requirement in this area. This course work will help provide the foundation and special proficiency in research design and analysis necessary for candidates to conduct their research programs.

#### **Teaching Development Program**

In the belief that all students in the Doctoral Program will need to effectively communicate the results of their research, the Kelley School of Business has a required teaching development component in the Doctoral Program, X630, which is a 1.5 credit hour course. This course is required either before or during the semester in which the student assumes his or her Associate Instructor duties. Exemptions from this requirement are rare. The Chairperson of Doctoral Programs may exempt students who have substantially identical academic experiences as offered in this course.

#### **Dual Concentration**

Rather than follow the major, minor, and M&A sequence, a doctoral student may elect to have two areas of concentration. The dual concentration candidate has the option of (1) two concentrations, each with 18 credit hours, or (2) a first concentration with 21 credit hours plus a second concentration of at least 15 credit hours.

There are two issues that a student electing a dual concentration should consider. First, the student must pass the qualifying examination in both concentrations. Second, it is highly unlikely that any dual concentration would be approved unless it can be demonstrated that a portion of the overall course work provides competency in M&A. No doctoral student may not unilaterally elect to pursue a dual concentration; the student's petition for a dual concentration must be approved by both departments as well as by the Chairperson of Doctoral Programs.

### **Grades**

Course grades below C+ (2.3) are not counted toward degree requirements but will be included in the computation of the student's grade point average. An overall GPA of at least 3.5 in the major courses is required. At least a 3.4 grade point average with no grade below B- (2.7) is required in those courses taken as part of the minor field. Students must achieve an overall grade point average of at least 3.3 and earn no less than a B- (2.7) in those courses taken as part of the methodology area.

### **Qualifying Examinations**

Evidence of the student's competence in all major fields must be demonstrated by examination. This may be a formal exam and/or the completion of research paper(s). Examinations may also be required in some minor fields. The qualifying examinations are designed as exercises in creative and critical thinking, not merely in recollecting facts and familiar analyses.

### **Admission to Candidacy**

Upon successful completion of all Phase II requirements (including all qualifying examinations), the student may be nominated into Ph.D. candidacy.

### **Awarding of the Masters in Business Degree**

Upon successful completion of all qualifying exams, students become eligible for the Masters in Business degree from the Kelley School of Business. The student's declared major field will determine the major field for the Masters in Business.

### **Dissertation Proposal**

Students are required to successfully defend a dissertation proposal within the first 10 semesters, following entry to the doctoral program (that is, by the end of the summer term of the fifth year). Students who do not do so will be required to leave the program. In addition to the research dissertation committee, an examination committee is appointed to supervise each candidate's proposal examination. A formal oral examination, to which other doctoral students and faculty members are invited, is held on the proposal. Upon passing the examination, the candidate moves into the third phase of the program.

### **Phase III**

#### **Dissertation**

Integrated with an important early part of the dissertation experience is the advanced course work through the research seminars. A minimum of 24 credit hours of dissertation credit is required, but 3 hours of credit in research seminars within the major area may count toward

this requirement. Since the dissertation represents a major research project, a year or more of full-time work in close cooperation with the candidate's committee is normally required to complete Phase III. We strongly urge candidates in the business doctoral program to remain in residence until all degree requirements have been met.

### **Defense of the Dissertation**

Phase III concludes with the defense of the dissertation. The objective of the defense is to provide students with a forum for formal presentation of the results of their dissertation research. The purpose of the presentation, questioning, and discussion is to enable students to demonstrate that they have successfully completed what they set out to do, as stated at the time of the proposal defense. The dissertation defense gives the research committee a final opportunity to bring the candidate's research methods, findings, and conclusions under critical review. Candidates are expected to defend all aspects of the inquiry satisfactorily.

### **Ph.D. in Business with an emphasis in Accounting**

For each doctoral student in this academic program, a faculty advisory committee individually prescribes a minimum of 18 credit hours of coursework that the student must complete in the Accounting major. Additionally, students are required to take a minimum of 9-12 credit hours in an approved minor/supporting field. Finally, each student must have a minimum of 9 credit hours of Methodology and Analysis courses. For students with an emphasis in Accounting, this prescribed coursework covers studies that address research questions in financial accounting, auditing, managerial accounting, and tax. The accounting curriculum offers tracks based primarily on archival or experimental research methods. Accounting doctoral students pursuing the archival track normally establish a minor in finance, and students pursuing the experimental track normally establish a minor in psychology. The faculty advisory committee helps the student select appropriate coursework for a minor area and a research methods area. Selection of the prescribed course plan is to prepare the student to design and conduct research and prepare a dissertation yielding advancements in the field of Accounting.

### **Ph.D. in Business with an emphasis in Business Economics and Public Policy**

For each doctoral student in this academic program, a faculty advisory committee individually prescribes a minimum of 18 credit hours of coursework that the student must complete in the Business Economics and Public Policy major. Additionally, students are required to take a minimum of 9-12 credit hours in an approved minor/supporting field. Finally, each student must have a minimum of 9 credit hours of Methodology and Analysis courses. For students with an emphasis in Business Economics and Public Policy, prescribed coursework is focused on economic modeling, game theory, agency theory, information economics, and econometrics. In addition, the faculty advisory committee helps the student select appropriate coursework for a minor area and a research methods area. Selection of the prescribed course plan is to prepare the student to design and conduct research and prepare a dissertation yielding

advancements in the field of Business Economics and Public Policy.

### **Ph.D. in Business with an emphasis in Decision Sciences**

For each doctoral student in this academic program, a faculty advisory committee individually prescribes a minimum of 18 credit hours of coursework that the student must complete in the Decision Sciences major. Additionally, students are required to take a minimum of 9-12 credit hours in an approved minor/supporting field. Finally, each student must have a minimum of 9 credit hours of Methodology and Analysis courses. For students with an emphasis in Decision Sciences, this prescribed coursework is focused on preparing students for research careers in management science and/or operations management. Emphasizing the use of mathematical models and analytical reasoning, students analyze problems in such areas as operations management, information technology, marketing, finance, management, and economics. The mathematical problem-solving techniques used include mathematical (linear, integer, nonlinear) programming, computer simulation, decision analysis, statistics, applied probability, game theory, artificial intelligence and machine learning. In addition, the faculty advisory committee helps the student select appropriate coursework for a minor area and a research methods area. Selection of the prescribed course plan is to prepare the student to design and conduct research and prepare a dissertation yielding advancements in the field of Decision Sciences.

### **Ph.D. in Business with an emphasis in Entrepreneurship**

For each doctoral student in this academic program, a faculty advisory committee individually prescribes a minimum of 18 credit hours of coursework that the student must complete in the Entrepreneurship major. Additionally, students are required to take a minimum of 9-12 credit hours in an approved minor/supporting field. Finally, each student must have a minimum of 9 credit hours of Methodology and Analysis courses. For students with an emphasis in Entrepreneurship, this prescribed coursework is focused on the discovery and recognition of opportunities to bring into existence future products and services. In addition, the faculty advisory committee helps the student select appropriate coursework for a minor area and a research methods area. Selection of the prescribed course plan is to prepare the student to design and conduct research and prepare a dissertation yielding advancements in the field of Entrepreneurship.

### **Ph.D. in Business with an emphasis in Finance**

For each doctoral student in this academic program, a faculty advisory committee individually prescribes a minimum of 18 credit hours of coursework that the student must complete in the Finance major. Additionally, students are required to take a minimum of 9-12 credit hours in an approved minor/supporting field. Finally, each student must have a minimum of 9 credit hours of Methodology and Analysis courses. For students with an emphasis in Finance, this prescribed coursework is focused on fundamental research in major areas of finance and analytical methodologies. In addition, the faculty advisory committee helps the student select appropriate coursework for a minor area and a research

methods area. Selection of the prescribed course plan is to prepare the student to design and conduct research and prepare a dissertation yielding advancements in the field of Finance.

### **Ph.D. in Business with an emphasis in Management Information Systems**

For each doctoral student in this academic program, a faculty advisory committee individually prescribes a minimum of 18 credit hours of coursework that the student must complete in the Management Information Systems major. Additionally, students are required to take a minimum of 9-12 credit hours in an approved minor/supporting field. Finally, each student must have a minimum of 9 credit hours of Methodology and Analysis courses. For students with an emphasis in Management Information Systems, this prescribed coursework is focused on topics that include: Foundations of IS, Team Collaboration, IS Theory Building, and Systems Analysis and Design. These courses are augmented with tools courses such as Statistics and Structural Equation Modeling. In addition, the faculty advisory committee helps the student select appropriate coursework for a minor area and a research methods area. Selection of the prescribed course plan is to prepare the student to design and conduct research and prepare a dissertation yielding advancements in the field of Management Information Systems.

### **Ph.D. in Business with an emphasis in Marketing**

For each doctoral student in this academic program, a faculty advisory committee individually prescribes a minimum of 18 credit hours of coursework that the student must complete in the Marketing major. Additionally, students are required to take a minimum of 9-12 credit hours in an approved minor/supporting field. Finally, each student must have a minimum of 9 credit hours of Methodology and Analysis courses. For students with an emphasis in Marketing, this prescribed coursework is focused around the three central domains within the marketing field: consumer behavior, marketing strategy, and marketing models. In addition, the faculty advisory committee helps the student select appropriate coursework for a minor area and a research methods area. Selection of the prescribed course plan is to prepare the student to design and conduct research and prepare a dissertation yielding advancements in the field of Marketing.

### **Ph.D. in Business with an emphasis in Operations and Supply Chain Management**

For each doctoral student in this academic program, a faculty advisory committee individually prescribes a minimum of 18 credit hours of coursework that the student must complete in the Operations and Supply Chain Management major. Additionally, students are required to take a minimum of 9-12 credit hours in an approved minor/supporting field. Finally, each student must have a minimum of 9 credit hours of Methodology and Analysis courses. For students with an emphasis in Operations and Supply Chain Management, this prescribed coursework is focused on ways to address the strategic and tactical problems faced by practicing managers overseeing the systems that transform resources (labor, capital, energy, and materials) into goods and services, from originating locations to their

destination in the marketplace. Good operations and supply chain management creates value through the development and implementation of effective operating systems to aid the design, planning, and control of productive activities for both goods and services (such as healthcare). In addition, the faculty advisory committee helps the student select appropriate coursework for a minor area and a research methods area. Selection of the prescribed course plan is to prepare the student to design and conduct research and prepare a dissertation yielding advancements in the field of Operations and Supply Chain Management.

#### **Ph.D. in Business with an emphasis in Organizational Behavior and Human Resource Management**

For each doctoral student in this academic program, a faculty advisory committee individually prescribes a minimum of 18 credit hours of coursework that the student must complete in the Organizational Behavior major. Additionally, students are required to take a minimum of 9-12 credit hours in an approved minor/supporting field. Finally, each student must have a minimum of 9 credit hours of Methodology and Analysis courses. For students with an emphasis in Organizational Behavior, this prescribed coursework is focused on human behavior in work settings, human capital acquisition, development, and deployment with an emphasis on explaining, predicting and influencing behavior in organizations. In addition, the faculty advisory committee helps the student select appropriate coursework for a minor area and a research methods area. Selection of the prescribed course plan is to prepare the student to design and conduct research and prepare a dissertation yielding advancements in the field of Organizational Behavior.

#### **Ph.D. in Business with an emphasis in Strategic Management and Organization Theory**

For each doctoral student in this academic program, a faculty advisory committee individually prescribes a minimum of 18 credit hours of coursework that the student must complete in the Strategic Management major. Additionally, students are required to take a minimum of 9-12 credit hours in an approved minor/supporting field. Finally, each student must have a minimum of 9 credit hours of Methodology and Analysis courses. For students with an emphasis in Strategic Management, this prescribed coursework is focused on the management of the total enterprise at the strategic level, alignment of its unique characteristics and competencies with its external environment, and contextual variables that influence an organization's choice of structure. In addition, the faculty advisory committee helps the student select appropriate coursework for a minor area and a research methods area. Selection of the prescribed course plan is to prepare the student to design and conduct research and prepare a dissertation yielding advancements in the field of Strategic Management.

#### **Minor in Accounting**

Doctoral students who wish to minor in Accounting will need an appropriate background in Accounting and will be required to take a minimum of 9 credit hours of coursework from the courses listed below. The objective of the Accounting minor course plan is to support and add to the student's major field of study.

#### **Prerequisites**

Phase I requirements and an appropriate background in Accounting.

#### **Coursework**

##### **A601A / A601B – Capital Markets-Based Research in Financial Accounting – 3 credit hours each**

Introduction to archival research in accounting. Both seminars focus on research that examines the role of accounting information in capital markets. Specific topics include the assessment of the information content of accounting earnings, earnings components, and nonrecurring disclosures; voluntary disclosure; information processing by analysts and investors; and financial reporting policy.

##### **A602A / A602B – Experimental Research in Accounting – 3 credit hours each**

Introduction to experimental research in accounting. A602A focuses on financial accounting issues, while A602B focuses on managerial accounting issues.

##### **A603A / A603B – Special Research Topics in Accounting– 3 credit hours each**

These seminars cover special topics in accounting research.

#### **Qualifying Exams**

Qualifying exams are waived for students who achieve a minimum GPA of 3.4 in minor coursework, with no grade below B-. Students who fail to meet the grade requirement are required to include an examination of the minor as the qualifying exam.

#### **Minor in Business Economics and Public Policy**

The Department of Business Economics and Public Policy trains doctoral students in the anticipation of microeconomic and econometric analysis to business strategy and economic and public policy issues.

#### **Prerequisites**

The objective of the Business Economics and Public Policy minor is typically to support and complement the candidate's major field of study. Accordingly, students pursuing a minor in Business Economics and Public Policy should first consult with their major advisor and the Business Economics minor advisor.

#### **Coursework**

Doctoral students who minor in Business Economics and Public Policy are required to complete a minimum of 9 credit hours of coursework. These 9 credit hours are to be selected in consultation with the student's major advisor and the Business Economics minor advisor. Students select from G651, G652, G750, G751 and G752.

##### **G651 – Econometrics I – 3 credit hours**

Multiple regression models, generalized least squares, and distributed lag models. Discusses various models, estimations, and inference problems. Use of a computer and application to economics and business problems.

##### **G652 – Economics II – 3 credit hours**



The goal of this course is to teach students how to process, critique, communicate and execute econometric methods in the context of economic applications with causal implications. Throughout the term, students will read, assess, and discuss a wide range of leading empirical papers in the industrial organization (IO) literature, spanning across major IO subgroups. In addition, students will execute data analyses that are comparable to some of the highlighted papers, and provide a full critique of one paper. The econometric methods we will emphasize include: OLS, 2SLS, GMM, ML, RD, Diff-in-diff, and matching. We will conclude with a brief discussion placing these methods in context of other analytical methods, including Bayesian statistics and machine learning.

### **G750 – Economic Modeling – 3 credit hours**

This course introduces researchers in business-related disciplines to the basic toolkit and modeling techniques of modern economics. We begin with an introduction to optimization methods followed by the economic theory of the consumer and the competitive firm. We then cover imperfectly competitive markets. Appropriate game theoretic concepts are developed, as needed.

### **G751 – Game Theory – 1.5 credit hours**

Game Theory is the study of multi-person decision problems in which players consider that their actions affect each other. This course provides an introduction to graduate level game theory. Throughout the course, we use applications from different business fields.

### **G752 - Information Economics – 1.5 credit hours**

Asymmetric information is a fundamental problem in almost all business transactions, from uncertainty over the quality of a product or the value of a firm, to doubts over the intentions or capabilities of a business partner. This course uses game theory to analyze how individuals and firms credibly convey information.

### **Qualifying Exams**

Qualifying exams are waived for students who achieve a minimum GPA of 3.4 in minor coursework, with no grade below B-. Students who fail to meet the grade requirement are required to include an examination of the minor as the qualifying exam.

### **Minor in Decision Science**

Business students who minor in Decision Science (DS) are required to complete 9 credit hours of coursework with the approval of the DS Department advisor. The objective of the minor area course plan in DS is to supplement the student's major course plan. The needs and goals of the student are a major consideration when designing the minor area coursework. As a result, the typical course load for the DS minor consists of courses which fit into a single area or which show some logical correlation.

### **Prerequisites**

All entering Decision Sciences doctoral students are expected to have an acceptable background in mathematics. If they are lacking this knowledge, they will be required to take the appropriate course(s) from the Mathematics Department.

### **Coursework**

#### **K601 – Linear Optimization – 1.5 credit hours**

This course covers linear optimization. In particular, it focuses on theory, solution methods, and formulations for linear optimization problems. Topics include linear programming, including the simplex and interior point methods, duality, and network flow problems.

#### **K602 – Integer and Nonlinear Optimization – 1.5 credit hours**

This course covers integer and nonlinear optimization. It focuses on theory, solution methods, and formulations for these problems. Topics include integer programming, non-linear programming (unconstrained and constrained), and stochastic programming.

#### **K603 – Probability Models for Operations Research – 1.5 credit hours**

The course focuses on establishing a solid understanding on probability and on how to use it to build applied models. It includes topics such as conditional probability and expectation, transforms, stochastic orders, counting processes, renewal theory, regenerative processes, and semi-Markov processes. Students will apply these models to inspection and reward problems, open and closed queueing networks, and optimization problems.

This course will also cover the basics of discrete-event simulation.

#### **K604 – Stochastic Process for Operations Research – 1.5 credit hours**

The course introduces the fundamental knowledge in stochastic processes. Topics include the Poisson processes, discrete- and continuous-time Markov chains, birth-and-death processes. Applications include phase-type distributions and Markovian queues. Students will represent Markov chains in matrix form and solve for transient and steady-state distributions using MATLAB, Python, or similar software. This course will also cover the basics of random variate generation and Monte Carlo simulation.

#### **K605 – Dynamic Programming – 1.5 credit hours**

This course provides an introduction to the formulation and analysis of dynamic optimization problems. Topics include, formulation of real-world multi-stage decision problems facing uncertainties that unfold over time, theory of Markov decision processes properties of the optimal value functions, structures of the optimal policies, and solution methods for both finite-horizon and infinite-horizon problems.

#### **K635 – Special Topics in Decision Science – 1.5 credit hours**

The topics included in this course varies at the time of the offering. Usually, a sub-field such as applications of decision sciences to humanitarian logistics, health care OM, contracts in supply chain management, sustainable operations and so forth, is explored in depth.

### **Qualifying Exams**

Qualifying exams are waived for students who achieve a minimum GPA of 3.4 in minor coursework, with no grade below B-. Students who fail to meet the grade requirement

are required to include an examination of the minor as the qualifying exam.

### **Minor in Entrepreneurship**

Doctoral students who wish to minor in Entrepreneurship are required to take 9 credit hours of coursework. Required courses are W610 and J602. The additional 3 credit hours may be fulfilled by taking D620, J601, W601, Z601 or Z798. Authorization is required to register for doctoral seminars, and you may wish to contact the professor in advance to learn more about the course and obtain a copy of the syllabus prior to requesting instructor enrollment permission. The objective of the Entrepreneurship minor course plan is to support and add to the student's major field of study.

### **Prerequisites**

See Phase I requirements. This requirement is usually met by graduating from an AACSB-accredited MBA program. Students entering without an MBA, exposure to Economics, Finance, and General Management or in cases where the faculty advisor and the student jointly identify a Phase I-type deficiency, a course of action to remedy it will be agreed upon between the faculty advisor and the student.

### **Coursework**

#### **W610 – Theoretical Foundations of Entrepreneurship – 3 credit hours**

This course is designed as a broad survey of major topics in the field of entrepreneurship. Its objective is to familiarize the students with some of the primary theoretical underpinnings of the field as well as some of the common and/or promising methodological approaches to the study of entrepreneurial phenomena. Topics covered in the course include: a theoretical overview of entrepreneurship and research agendas, entrepreneurship motivation and opportunity, entrepreneurial attention and information processing, learning and knowledge related to opportunity, entrepreneurial decision making and biases, entrepreneurs' human and social capital, strategic orientation and corporate entrepreneurship, new ventures (strategy, growth and performance), entrepreneurial failure, and international entrepreneurship. Indirectly the course will also cover a dissertation in entrepreneurship, the journal review process, research methods, and presenting research papers. Class sessions will be devoted to reviewing and critiquing the readings associated with each of the aforementioned topics and generating research opportunities.

#### **J602 – Theoretical Foundations of Strategy II – 3 credit hours**

This course is designed as a survey of recent topics in the field of strategic management. Its objective is to familiarize the students with some of the primary theoretical underpinnings of the field as well as some of the common and/or promising methodological approaches to the study of strategy phenomena. Topics covered in the course include: the resource-based view of strategy, perspectives on firm growth, the knowledge and attentions based views of the firm, the role of the environment in strategic decisions, new venture and entry strategies, dynamic capabilities, slack, network and strategy at the population level of analysis. Class sessions will

be devoted to reviewing and critiquing the readings associated with each of the aforementioned topics and generating research opportunities.

#### **D620 – Doctoral Seminar in International Business – 3 credit hours**

Not only for specialists in International Business. Its orientation is basically to review both the classic literature in the field of international business especially the theory of multinational enterprises (MNEs) and business networks, as well as some of the more recent problems and issues that are at the forefront of academic research in the IB area. A "multiple perspectives" approach is followed, using insights from relevant functional fields and cognate disciplines, to throw light on the management issues affecting MNE and networks. Required critical readings and detailed seminar paper.

#### **J601 -Seminar in Strategic Management I – 3 credit hours**

This course is designed as a broad survey of major and foundational topics in the field of strategic management. Its objectives are (1) to familiarize students with some of the primary theoretical underpinnings and core concepts of the strategic management field, (2) to review decision areas and challenges involving research methods within the domain of strategic management, and (3) to provide a forum in which students can further develop the writing skills they will need as strategic management scholars. Topics covered in the course include: an historical and theoretical overview of strategic management, core concepts in strategic management, selected theoretical lenses of strategic management, the drivers and consequences of firm performance, corporate governance and general management, strategy content, strategic processes, industry and environmental considerations in strategic management, and organizational considerations in strategic management. Class sessions are devoted to (1) reviewing and critiquing readings associated with the aforementioned topics, (2) developing, refining, and presenting research ideas, and (3) explaining the research and publication processes.

#### **W601 –Organization Theory - 3 credit hours**

W601 is a survey course intended to introduce basic concepts of organization theory (OT). OT focuses on organization structure, as both a dependent variable—predicted by a number of independent variables—and as a predictor of organization effectiveness. We will begin with classic readings so that you will gain an appreciation for the roots of current research in OT and strategic management, and then discuss more recent theoretical and empirical work building on this earlier foundation.

#### **Z601 – Doctoral Seminar in Organizational Behavior – 3 credit hours**

This seminar examines current paradigms of theory and research in the field of organizational behavior and organizational psychology. The materials we shall examine provide a sort of "operational definition" of the field; in other words, what one reads in the journals and hears at the professional meetings in recent years. Focus is on the kinds of problems posed, issues addressed, conflicts joined, prototypical research strategies and tactics employed (although here we do not emphasize

"methods" and analytic techniques as such), and the individuals who are being read and listened to. Major topics include: The historical roots of OB, models of satisfaction and performance, modes of attachment of individuals to organizations, comparative effects of dispositions and work environments, leadership, and the role of culture in shaping behavior in organizations.

### **Z798 – Seminar in Research Methods – 3 credit hours**

The primary purpose of this seminar is to prepare doctoral candidates to conduct research in the organizational and behavioral sciences. The emphasis of this course is on exploring: (a) the logic of research designs, (b) different types of research methodologies, and (c) the advantages and disadvantages of using different research methods. Special attention will be paid to the topics of construct development and validation, how to control for method biases, and the identification of the necessary conditions for establishing causal relationships. Although the discussion of various analytical procedures will be unavoidable, the major focus of the seminar will be on methodological (as opposed) to analytical issues.

### **Qualifying Exams**

Qualifying exams are waived for students who achieve a minimum GPA of 3.4 in minor coursework, with no grade below B-. Students who fail to meet the grade requirement are required to include an examination of the minor as the qualifying exam.

### **Minor in Finance**

Doctoral students who minor in Finance will need to fulfill certain pre-requisites and a minimum of 9 credit hours of coursework. The objective of the coursework for the Finance minor is to provide the student with a basic understanding of financial theory.

### **Prerequisites**

G651, G604 and M413 or an equivalent background in probability/statistics, microeconomics and mathematics.

### **Coursework**

Students who minor in Finance are required to complete a minimum of 9 credit hours of coursework with the approval of the Finance Department advisor. All Finance minors must take F600. Finance minor coursework may be completed by taking any two of the four remaining doctoral-level seminars offered by the Finance Department (i.e., F605, F625, F635, F644, and F798 if offered).

### **F600 – Asset Pricing Theory – 3 credit hours**

This course introduces theories of asset pricing and covers topics that are either basic or widely useful in academic research. Class discussions and assignments prepare students for understanding academic papers that deal with theoretical issues in security prices and financial markets. The course focuses on dynamic equilibrium models of asset prices, but static models are included to help students develop intuitions. The goal of the course is to build a coherent foundation for intuitive economic ideas and rigorous analytical skills in asset pricing theory.

These ideas and skills are necessary for pursuing theoretical or empirical research in financial economics.

### **F605 – Corporate Finance – 3 credit hours**

The course introduces basic issues and models concerning selected topics in corporate finance, with an emphasis on theoretical papers and applied-theory work.

It covers three main fields: corporate financing policy; corporate control; and corporate governance. The course aims to familiarize students with the modern theories in each field that have motivated many important studies.

Students will also learn how theoretical models can be applied to data through structural estimation and / or calibration approaches.

### **F620 Game Theory and Financial Institutions- 3 credit hours**

This course covers theoretical and empirical research in the field of banking, with a focus on commercial banks and credit markets. The course first covers the classic theories of banking, which describe the fundamental role of commercial banks in the economy and the financial sector, and relates these theories to the empirical evidence on their relevance. It also address the modern regulation of commercial banks, including recent important issues affecting banks, and the competition they face from other participants in the markets in which they operate. The course then covers research connecting banks to a range of broader economic and financial issues such as credit cycles, economic growth and aggregate productivity, monetary policy, and financial integration.

### **F625 – Empirical Asset Pricing – 3 credit hours**

This course is an introduction to the field of empirical asset pricing, beginning with an overview of some of the main challenges in asset pricing. It next turns to a review of some of the econometric methods often used in asset pricing research. Finally, the course covers key issues in the literature, including predictability of returns, consumption based asset pricing models, the cross-section of returns, the term structure of interest rates, and foreign exchange markets.

### **F635 – Market Microstructure – 3 credit hours**

Theory and empirical analysis of trading and market making on security exchanges. Examines both trader strategy and market maker strategy. Provides basic theoretical and empirical building blocks. Analyzes a wide variety of applications including trading mechanisms, security design, and market design. Compares security exchange liquidity, informativeness, transparency, and volatility.

### **F644 –Topics In Finance – 1.5 to 3 credit hours**

The first topic will cover theoretical and empirical issues related to financial intermediation. Class sessions in this topic will be a combination of lecture presentations and student presentations of selected papers. The second topic will be empirical corporate finance. Class sessions in this topic will consist of reading, presenting, and discussing articles. The students will have to present and turn in an original empirical corporate finance paper.

### **Qualifying Exams**

Qualifying exams are waived for students who achieve a minimum GPA of 3.4 in minor coursework, with no grade below B-. Students who fail to meet the grade requirement



are required to include an examination of the minor as the qualifying exam.

### **Minor in International Business**

Doctoral students who wish to minor in International Business are required to take 9 credit hours of coursework. A required course is D620. The additional 6 credit hours may be fulfilled by taking J601, J602, D669, W601, W610, Z601, Z615 or Z798. Authorization is required to register for doctoral seminars, and you may wish to contact the professor in advance to learn more about the course and obtain a copy of the syllabus prior to requesting instructor enrollment permission. The objective of the International Business minor course plan is to support and add to the student's major field of study.

### **Prerequisites**

Phase I requirements for Strategic Management & Organization Theory majors.

### **Coursework**

#### **D620 – Doctoral Seminar in International Business – 3 credit hours**

Not only for specialists in International Business. Its orientation is basically to review both the classic literature in the field of international business especially the theory of multinational enterprises (MNEs) and business networks, as well as some of the more recent problems and issues that are at the forefront of academic research in the IB area. A "multiple perspectives" approach is followed, using insights from relevant functional fields and cognate disciplines, to throw light on the management issues affecting MNE and networks. Required critical readings and detailed seminar paper.

#### **J601 - Seminar in Strategic Management – 3 credit hours**

This course is designed as a broad survey of major and foundational topics in the field of strategic management. Its objectives are (1) to familiarize students with some of the primary theoretical underpinnings and core concepts of the strategic management field, (2) to review decision areas and challenges involving research methods within the domain of strategic management, and (3) to provide a forum in which students can further develop the writing skills they will need as strategic management scholars. Topics covered in the course include: an historical and theoretical overview of strategic management, core concepts in strategic management, selected theoretical lenses of strategic management, the drivers and consequences of firm performance, corporate governance and general management, strategy content, strategic processes, industry and environmental considerations in strategic management, and organizational considerations in strategic management. Class sessions are devoted to (1) reviewing and critiquing readings associated with the aforementioned topics, (2) developing, refining, and presenting research ideas, and (3) explaining the research and publication processes.

#### **J602 – Theoretical Foundations of Strategy II – 3 credit hours**

This course is designed as a survey of recent topics in the field of strategic management. Its objective is to familiarize the students with some of the primary

theoretical underpinnings of the field as well as some of the common and/or promising methodological approaches to the study of strategy phenomena. Topics covered in the course include: the resource-based view of strategy, perspectives on firm growth, the knowledge and attentions based views of the firm, the role of the environment in strategic decisions, new venture and entry strategies, dynamic capabilities, slack, network and strategy at the population level of analysis. Class sessions will be devoted to reviewing and critiquing the readings associated with each of the aforementioned topics and generating research opportunities.

#### **D669 – Economic Development, Globalization and Entrepreneurship - 3 credit hours**

The seminar examines the link between globalization, entrepreneurship, and regional economic development.

It utilizes state-of-the art methodologies and theories to focus advanced graduate students on research topics in economic development policies.

#### **W601 –Organization Theory - 3 credit hours**

W601 is a survey course intended to introduce basic concepts of organization theory (OT). OT focuses on organization structure, as both a dependent variable—predicted by a number of independent variables—and as a predictor of organization effectiveness. We will begin with classic readings so that you will gain an appreciation for the roots of current research in OT and strategic management, and then discuss more recent theoretical and empirical work building on this earlier foundation.

#### **W610 – Theoretical Foundations of Entrepreneurship – 3 credit hours**

This course is designed as a broad survey of major topics in the field of entrepreneurship. Its objective is to familiarize the students with some of the primary theoretical underpinnings of the field as well as some of the common and/or promising methodological approaches to the study of entrepreneurial phenomena. Topics covered in the course include: a theoretical overview of entrepreneurship and research agendas, entrepreneurship motivation and opportunity, entrepreneurial attention and information processing, learning and knowledge related to opportunity, entrepreneurial decision making and biases, entrepreneurs' human and social capital, strategic orientation and corporate entrepreneurship, new ventures (strategy, growth and performance), entrepreneurial failure, and international entrepreneurship. Indirectly the course will also cover a dissertation in entrepreneurship, the journal review process, research methods, and presenting research papers. Class sessions will be devoted to reviewing and critiquing the readings associated with each of the aforementioned topics and generating research opportunities.

#### **Z601 – Doctoral Seminar in Organizational Behavior – 3 credit hours**

This seminar examines current paradigms of theory and research in the field of organizational behavior and organizational psychology. The materials we shall examine provide a sort of "operational definition" of the field; in other words, what one reads in the journals and hears at the professional meetings in recent years. Focus is on the kinds of problems posed, issues addressed,



conflicts joined, prototypical research strategies and tactics employed (although here we do not emphasize "methods" and analytic techniques as such), and the individuals who are being read and listened to. Major topics include: The historical roots of OB, models of satisfaction and performance, modes of attachment of individuals to organizations, comparative effects of dispositions and work environments, leadership, and the role of culture in shaping behavior in organizations.

### **Z615 - Seminar in Human Resource (HR) Management – 3 credit hours**

This seminar addresses the research domains associated with both Strategic Human Resource Management (SHRM) and Functional Human Resource Management (FHRM). SHRM is concerned with the emerging literature on aligning business and HR strategy, while FHRM is more about the traditional functions of HR (staffing, reward, and development systems). Special attention will be paid to the similarities and distinctions between SHRM and FHRM and the field of Organizational Behavior. The focus will be on reviewing (describing and critiquing) representative research studies as published in top academic journals and generating new research ideas in the form of original research proposals.

### **Z798 – Seminar in Research Methods – 3 credit hours**

The primary purpose of this seminar is to prepare doctoral candidates to conduct research in the organizational and behavioral sciences. The emphasis of this course is on exploring: (a) the logic of research designs, (b) different types of research methodologies, and (c) the advantages and disadvantages of using different research methods. Special attention will be paid to the topics of construct development and validation, how to control for method biases, and the identification of the necessary conditions for establishing causal relationships. Although the discussion of various analytical procedures will be unavoidable, the major focus of the seminar will be on methodological (as opposed) to analytical issues.

### **Qualifying Exams**

Qualifying exams are waived for students who achieve a minimum GPA of 3.4 in minor coursework, with no grade below B-. Students who fail to meet the grade requirement are required to include an examination of the minor as the qualifying exam.

### **Minor in Management Information Systems**

Doctoral students who minor in Information Systems (IS) are required to complete a minimum of 9 credit hours of course work. The program requires that the student take S6xx courses or alternate courses approved by the IS doctoral student advisor. The minor field in IS is intended to provide students majoring in other fields with some research experience in the IS field as well as to provide the student with a background sufficient to allow the student to teach introductory IS courses.

### **Prerequisites**

S500 or an equivalent background in MIS.

### **Coursework**

### **S601 – Technical Issues in Information Systems – 1.5 credit hours**

The science of design is fundamental to analysis, design, and development of blueprints and creation of information systems artifacts. This seminar examines current research issues in information systems analysis and design as well as those in design science.

### **S602 – Individual Issues in Information Systems Research – 1.5 credit hours**

The goal of this course is to provide an introduction to the individual-level research in information systems. This seminar covers different research streams, such as roles of individuals in systems development and implementation, technology adoption and use, impacts of technology on individual outcomes, and emerging topics related to individual issues.

### **S605 – Collaboration Technology Research – 1.5 credit hours**

Collaboration technologies enable groups to work together and collaborate more effectively, whether they work in the same room at the same time or in different places at different times. This course will examine our current state of knowledge of collaboration tools and research on the effects of their use.

### **S606 – Information Systems Strategy and Management Research – 1.5 credit hours**

The focus of this course is organizational-level research in information systems with a particular emphasis on strategic and management issues related to the role of information technology (IT) in organizations. Topics include IT strategy; business value of IT; interorganizational systems and processes; IT adoption, assimilation and impacts; IT service management and governance; and emerging issues in organizational use of IT.

### **S635 – Special Topics in Information Systems – 1.5 credit hours**

The topics included in this course varies at the time of the offering. Usually, a topic of interest, such as social media data mining, personalization, and advanced methodological/analytical issues, is explored in depth.

### **S798 – Theory Development – 1.5 credit hours**

Theory development is the essence of research. Students will bring a research idea to the course and will develop the idea into a research proposal or the front end of an empirical paper as they go through the course.

### **Qualifying Exams**

Qualifying exams are waived for students who achieve a minimum GPA of 3.4 in minor coursework, with no grade below B-. Students who fail to meet the grade requirement are required to include an examination of the minor as the qualifying exam.

### **Minor in Marketing**

Doctoral student who wish to minor in Marketing are required to complete 9 credit hours of coursework with the approval of the Marketing Department advisor. The objective of the Marketing minor area course plan is to provide the student with a basic understanding of marketing theory and research, and to strengthen and support the student's major field of study.

## Prerequisites

All students must have at least an elementary understanding of the business enterprise as viewed by senior management (especially in the areas of accounting, finance, and marketing management), and basic statistics. Since all accredited MBA programs provide this training, students entering the doctoral program with an MBA degree from an accredited program are assumed to have satisfied all Phase I requirements. Students entering without an MBA degree may be required to take coursework in these areas as part of their Phase I program. The academic records of these students will be reviewed by program advisors to determine which, if any, Phase I courses are required to provide the fundamental understanding of the business enterprise and basic statistics required by Phase II of the program

## Coursework

Of the 9 required credit hours, six of these credit hours must consist of two of the three Marketing research seminars: M650, M651, and M653. The last three credit hours can be another of the above research seminars, M652, M798, an X680 readings course focusing on some aspect of Marketing, or possibly a 500 level Marketing course which appears particularly relevant to the candidate's program (for all 500 level Marketing courses, it is required that the doctoral candidate do work beyond that normally expected of MBAs for the course to count toward his or her minor).

### M650 – Research Methods in Marketing – 3 credit hours

The general objective of this course is to provide a basic understanding of the research process (i.e., philosophy of science) and the tools needed to design and execute scientific research on behavioral and organizational issues in business, and particularly applied to marketing problems and questions.

### M651 – Consumer Behavior – 3 credit hours

The course purpose is to provide a strong foundation for critical thinking in consumer behavior and decision-making using concepts from cognitive and social psychology, behavioral theory, and sociology. Students will develop skills allowing them to critically evaluate various perspectives, theories, and methodologies that form the field.

### M652 – Marketing Models – 3 credit hours

This course examines useful quantitative models and methods applied in marketing areas. Topics include measurement of multi-attribute preference structures, choice models, dynamic structural models, consideration set, brand and customer equity, hierarchical Bayesian models, market structuring and new product diffusion.

### M653 – Managerial Research in Marketing – 3 credit hours

The purpose of this course is to provide a survey of the various areas of marketing strategy research, concentrating on theories, concepts, models and paradigms that collectively form the foundation of marketing strategy research – from classic articles to

current literature. Typically offered as two distinct 7-week sessions, each worth 1.5 credit hours.

### M798 – Special Topics in Marketing – 1.5-3 credit hours

This course focuses on current topics of relevance to research in the field of marketing. The emphasis of the M798 course is on covering a relatively narrow research area in depth, rather than on surveying a broad research area. Topics will vary from year to year. Typically offered as two distinct 7-week sessions, each worth 1.5 credit hours.

### X680 – Supervised Readings in Business – variable 1-3 credit hours

## Qualifying Exams

Qualifying exams are waived for students who achieve a minimum GPA of 3.4 in minor coursework, with no grade below B-. Students who fail to meet the grade requirement are required to include an examination of the minor as the qualifying exam.

## Minor in Operations/Supply Chain Management

Doctoral students who minor in Operations/Supply Chain Management are required to complete a minimum of 9 credit hours of course work. These nine hours consist of P601, P602, P603, P604, and other P- and K-courses at the doctoral level (600-level) chosen by the student with the approval of the Departmental Advisor. The objective of the Operations Management minor program is to broaden student's research background as well as to provide the background to enable the student to teach in the Operations and Supply Chain Management field.

## Prerequisites

All entering Operations/Supply Chain Management doctoral students are expected to have an acceptable background in business and its operations. If they are lacking this knowledge, they will be required to take appropriate course(s) recommended by the departmental advisor.

## Coursework

### P601 – Supply Chain Management and Distribution– 1.5 credit hours

This course provides a survey of key research themes in the area of supply chain management and distribution.

Topics include multi-echelon inventory (stochastic and guaranteed service level models), risk pooling, postponement, transshipments, supply chain disruption, yield uncertainty, process flexibility, the bullwhip effect, and supply chain contracts.

### P602 – Inventory Theory – 1.5 credit hours

This course provides an overview of quantitative models and techniques of inventory management that support the management of production and distribution. Topics include forecasting, the EOQ model and its variations (quantity discounts, power-of-two policies, planned backorders), the Wagner-Within algorithm, and stochastic inventory models (continuous review (r,Q) policies, periodic review base-stock policies, and (s,S) policies).

### **P603 – Seminar on Operations & Supply Chain Topics– 1.5 credit hours**

This course provides a survey of operations planning & scheduling topics drawn from the current literature.

### **P604 - Service Operations and Process Design – 1.5 credit hours**

This course focuses on service management and process design, emphasizing operations management issues and decision-making methods. Topics include service management frameworks, service design and process selection, service quality, service operations and the behavioral sciences, labor scheduling and flexibility, capacity planning, and revenue management.

### **P635 - Special Topic in Operations Management – 1.5 credit hour**

The topics included in this course varies at the time of the offering. Usually, a sub-field such as humanitarian logistics, health care OM, contracts in supply chain management, sustainable operations, and so forth, is explored in depth.

### **K601 – Linear Optimization – 1.5 credit hours**

This course covers linear optimization. In particular, it focuses on theory, solution methods, and formulations for linear optimization problems. Topics include linear programming, including the simplex and interior point methods, duality, and network flow problems.

### **K602 – Integer and Nonlinear Optimization – 1.5 credit hours**

This course covers integer and nonlinear optimization. It focuses on theory, solution methods, and formulations for these problems. Topics include integer programming, non-linear programming (unconstrained and constrained), and stochastic programming.

### **K603 – Probability Models for Operations Research – 1.5 credit hours**

The course focuses on establishing a solid understanding on probability and on how to use it to build applied models. It includes topics such as conditional probability and expectation, transforms, stochastic orders, counting processes, renewal theory, regenerative processes (including the M/G/1 queue), and semi-Markov processes. Students will apply these models to inspection and reward problems, open and closed queueing networks, and optimization problems. This course will also cover the basics of discrete-event simulation.

### **K604 – Stochastic Process for Operations Research – 1.5 credit hours**

The course introduces the fundamental knowledge in stochastic processes. It includes topics such as Poisson processes, discrete- and continuous-time Markov chains, and birth-and-death processes. Applications include phase-type distributions and Markovian queues. Students will represent Markov chains in matrix form and solve for transient and steady-state distributions using MATLAB, Python, or similar software. This course will also cover the basics of random variate generation and Monte Carlo simulation.

### **K605 – Dynamic Programming – 1.5 credit hours**

This course provides an introduction to the formulation and analysis of dynamic optimization problems. Topics include, formulation of real-world multi-stage decision problems facing uncertainties that unfold over time, theory of Markov decision processes, properties of the optimal value functions, structures of the optimal policies, and solution methods for both finite-horizon and infinite-horizon problems.

### **K635 – Special Topic in Decision Science – 1.5 credit hours**

The topics included in this course varies at the time of the offering. Usually, a sub-field such as applications of decision sciences to humanitarian logistics, health care OM, contracts in supply chain management, sustainable operations, and so forth, is explored in depth.

### **Qualifying Exams**

Qualifying exams are waived for students who achieve a minimum GPA of 3.4 in minor coursework, with no grade below B-. Students who fail to meet the grade requirement are required to include an examination of the minor as the qualifying exam.

### **Minor in Organizational Behavior and Human Resource Management**

Doctoral students who minor in Organizational Behavior and Human Resource Management are required to take 9 credit hours of coursework. Z601 and Z615 are required courses. The additional 3 credit hours may be fulfilled by taking D620, J601, J602, W601, or Z798. Authorization is required to register for doctoral seminars, and you may wish to contact the professor in advance to learn more about the course and obtain a copy of the syllabus prior to requesting instructor enrollment permission. The objective of the Organizational Behavior & Human Resources Management minor course plan is to support and add to the student's major field of study.

### **Prerequisites**

See Phase I requirements. This requirement is usually met by graduating from an AACSB-accredited MBA program. For students entering without an MBA, exposure to Economics and General Management, or in cases where the faculty advisor and the student jointly identify a Phase I-type deficiency, a course of action to remedy it will be agreed to between the faculty advisor and the student.

### **Coursework**

#### **Z601 – Seminar in Organizational Behavior- 3 credit hours**

This seminar examines current paradigms of theory and research in the field of organizational behavior and organizational psychology. The materials we shall examine provide a sort of "operational definition" of the field; in other words, what one reads in the journals and hears at the professional meetings in recent years. Focus is on the kinds of problems posed, issues addressed, conflicts joined, prototypical research strategies and tactics employed (although here we do not emphasize "methods" and analytic techniques as such), and the individuals who are being read and listened to. Major topics include: The historical roots of OB, models of

satisfaction and performance, modes of attachment of individuals to organizations, comparative effects of dispositions and work environments, leadership, and the role of culture in shaping behavior in organizations.

### **Z615 – Seminar in Human Resource Management – 3 credit hours**

This seminar addresses the research domains associated with both Strategic Human Resource Management (SHRM) and Functional Human Resource Management (FHRM). SHRM is concerned with the emerging literature on aligning business and HR strategy, while FHRM is more about the traditional functions of HR (staffing, reward, and development systems). Special attention will be paid to the similarities and distinctions between SHRM and FHRM and the field of Organizational Behavior. The focus will be on reviewing (describing and critiquing) representative research studies as published in top academic journals and generating new research ideas in the form of original research proposals.

### **D620 – Doctoral Seminar in International Business – 3 credit hours**

Not only for specialists in International Business. Its orientation is basically to review both the classic literature in the field of international business especially the theory of multinational enterprises (MNEs) and business networks, as well as some of the more recent problems and issues that are at the forefront of academic research in the IB area. A “multiple perspectives” approach is followed, using insights from relevant functional fields and cognate disciplines, to throw light on the management issues affecting MNE and networks. Required critical readings and detailed seminar paper.

### **J601 – Seminar in Strategic Management I – 3 credit hours**

This course is designed as a broad survey of major and foundational topics in the field of strategic management. Its objectives are (1) to familiarize students with some of the primary theoretical underpinnings and core concepts of the strategic management field, (2) to review decision areas and challenges involving research methods within the domain of strategic management, and (3) to provide a forum in which students can further develop the writing skills they will need as strategic management scholars. Topics covered in the course include: an historical and theoretical overview of strategic management, core concepts in strategic management, selected theoretical lenses of strategic management, the drivers and consequences of firm performance, corporate governance and general management, strategy content, strategic processes, industry and environmental considerations in strategic management, and organizational considerations in strategic management. Class sessions are devoted to (1) reviewing and critiquing readings associated with the aforementioned topics, (2) developing, refining, and presenting research ideas, and (3) explaining the research and publication processes.

### **J602 – Theoretical Foundations of Strategy II – 3 credit hours**

This course is designed as a survey of recent topics in the field of strategic management. Its objective is to familiarize the students with some of the primary

theoretical underpinnings of the field as well as some of the common and/or promising methodological approaches to the study of strategy phenomena. Topics covered in the course include: the resource-based view of strategy, perspectives on firm growth, the knowledge and attentions based views of the firm, the role of the environment in strategic decisions, new venture and entry strategies, dynamic capabilities, slack, network and strategy at the population level of analysis. Class sessions will be devoted to reviewing and critiquing the readings associated with each of the aforementioned topics and generating research opportunities.

### **W601 –Organization Theory – 3 credit hours**

W601 is a survey course intended to introduce basic concepts of organization theory (OT). OT focuses on organization structure, as both a dependent variable—predicted by a number of independent variables—and as a predictor of organization effectiveness. We'll begin with classic readings so that you will gain an appreciation for the roots of current research in OT and strategic management, and then discuss more recent theoretical and empirical work building on this earlier foundation. Z798 – Seminar in Research Methods – 3 credit hours

The primary purpose of this seminar is to prepare doctoral candidates to conduct research in the organizational and behavioral sciences. The emphasis of this course is on exploring: (a) the logic of research designs, (b) different types of research methodologies, and (c) the advantages and disadvantages of using different research methods. Special attention will be paid to the topics of construct development and validation, how to control for method biases, and the identification of the necessary conditions for establishing causal relationships. Although the discussion of various analytical procedures will be unavoidable, the major focus of the seminar will be on methodological (as opposed) to analytical issues.

### **Qualifying Exams**

Qualifying exams are waived for students who achieve a minimum GPA of 3.4 in minor coursework, with no grade below B-. Students who fail to meet the grade requirement are required to include an examination of the minor as the qualifying exam.

### **Minor in Strategic Management and Organization Theory (Management)**

Doctoral students who minor in Strategic Management and Organization Theory are required to take 9 credit hours of coursework. J601 and J602 are required courses. The additional 3 credit hours may be fulfilled by taking D620, W601, or W610. Authorization is required to register for doctoral seminars, and you may wish to contact the professor in advance to learn more about the course and obtain a copy of the syllabus prior to requesting instructor enrollment permission. The objective of the Strategic Management and Organization Theory minor course plan is to support and add to the student's major field of study.

### **Prerequisites**

See Phase I requirements. This requirement is usually met by graduating from an AACSB-accredited MBA program. For students entering without an MBA, exposure to Economics, Finance, and General Management or in



cases where the faculty advisor and the student jointly identify a Phase I-type deficiency, a course of action to remedy it will be agreed to between the faculty advisor and the student.

### Coursework

#### **J601 – Seminar in Strategic Management I – 3 credit hours**

This course is designed as a broad survey of major and foundational topics in the field of strategic management. Its objectives are (1) to familiarize students with some of the primary theoretical underpinnings and core concepts of the strategic management field, (2) to review decision areas and challenges involving research methods within the domain of strategic management, and (3) to provide a forum in which students can further develop the writing skills they will need as strategic management scholars.

Topics covered in the course include: an historical and theoretical overview of strategic management, core concepts in strategic management, selected theoretical lenses of strategic management, the drivers and consequences of firm performance, corporate governance and general management, strategy content, strategic processes, industry and environmental considerations in strategic management, and organizational considerations in strategic management. Class sessions are devoted to (1) reviewing and critiquing readings associated with the aforementioned topics, (2) developing, refining, and presenting research ideas, and (3) explaining the research and publication processes.

#### **J602 – Theoretical Foundations of Strategy II – 3 credit hours**

This course is designed as a survey of recent topics in the field of strategic management. Its objective is to familiarize the students with some of the primary theoretical underpinnings of the field as well as some of the common and/or promising methodological approaches to the study of strategy phenomena. Topics covered in the course include: the resource-based view of strategy, perspectives on firm growth, the knowledge and attentions based views of the firm, the role of the environment in strategic decisions, new venture and entry strategies, dynamic capabilities, slack, network and strategy at the population level of analysis. Class sessions will be devoted to reviewing and critiquing the readings associated with each of the aforementioned topics and generating research opportunities.

#### **D620 – Seminar in International Business – 3 credit hours**

Not only for specialists in International Business. Its orientation is basically to review both the classic literature in the field of international business especially the theory of multinational enterprises (MNEs) and business networks, as well as some of the more recent problems and issues that are at the forefront of academic research in the IB area. A “multiple perspectives” approach is followed, using insights from relevant functional fields and cognate disciplines, to throw light on the management issues affecting MNE and networks. Required critical readings and detailed seminar paper.

#### **W601 – Organization Theory – 3 credit hours**

W601 is a survey course intended to introduce basic concepts of organization theory (OT). OT focuses on organization structure, as both a dependent variable—predicted by a number of independent variables—and as a predictor of organization effectiveness. We'll begin with classic readings so that you will gain an appreciation for the roots of current research in OT and strategic management, and then discuss more recent theoretical and empirical work building on this earlier foundation.

#### **W610 – Theoretical Foundations of Entrepreneurship – 3 credit hours**

This course is designed as a broad survey of major topics in the field of entrepreneurship. Its objective is to familiarize the students with some of the primary theoretical underpinnings of the field as well as some of the common and/or promising methodological approaches to the study of entrepreneurial phenomena. Topics covered in the course include: a theoretical overview of entrepreneurship and research agendas, entrepreneurship motivation and opportunity, entrepreneurial attention and information processing, learning and knowledge related to opportunity, entrepreneurial decision making and biases, entrepreneurs' human and social capital, strategic orientation and corporate entrepreneurship, new ventures (strategy, growth and performance), entrepreneurial failure, and international entrepreneurship.

Indirectly the course will also cover a dissertation in entrepreneurship, the journal review process, research methods, and presenting research papers. Class sessions will be devoted to reviewing and critiquing the readings associated with each of the aforementioned topics and generating research opportunities.

### Qualifying Exams

Qualifying exams are waived for students who achieve a minimum GPA of 3.4 in minor coursework, with no grade below B-. Students who fail to meet the grade requirement are required to include an examination of the minor as the qualifying exam.

### Faculty

#### Dean

Idalene F. Kesner, Frank P. Popoff Chair of Strategic Management

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Professors

Franklin Acito\*, S. Christian Albright\* (Emeritus), Timothy T. Baldwin\*, Michael R. Baye\*, Messod-Daniel Beneish\*, Christopher Berry\*, Matthew Billett\*, Douglas Blocher\*, John A. Boquist\* (Emeritus), Kurt Bretthauer\*, Raymond R. Burke\*, Kyle Cattani\*, Philip L. Cochran\* (Emeritus), Jeffrey G. Covin\*, Anthony D. Cox\*, Dan R. Dalton\* (Emeritus), Lawrence S. Davidson\* (Emeritus), Alan R. Dennis\*, George F. Dreher\* (Emeritus), Terry M. Dworkin\* (Emerita), Andrew Ellul, Jeffrey D. Fisher\* (Emeritus), Joseph G. Fisher\*, Timothy Fort, S. Michael Groomer\* (Emeritus), John Hassell\*, Stephen L. Hayford, W. Harvey Hegarty\* (Emeritus), John W. Hill\* (Emeritus), Leslie D. Hodder\*, Craig Holden\*, Patrick Hopkins\*,

Thomas P. Hustad\* (Emeritus), F. Robert Jacobs\* (Emeritus), Bruce L. Jaffee\* (Emeritus), Heejoon Kang\* (Emeritus), Idalene Kesner\*, Vijay Khatri\*, H. Shanker Krishnan\*, Donald F. Kuratko\*, Arlen W. Langvardt, Glen A. Larsen\*, R. Thomas Lenz\* (Emeritus), Dan Li\*, Shibo Li\*, David B. MacKay\* (Emeritus, Geography), Scott Bradley MacKenzie\*, Laureen Ann Maines\*, Jane P. Mallor\* (Emerita), John W. Maxwell\*, Patricia P. McDougall\* (Emeritus), Jeff McMullen\*, Michael B. Metzger\* (Emeritus), Neil Morgan\*, Janet Near\* (Emerita), Dennis W. Organ\* (Emeritus), Robert W. Parry, Jr.\* (Emeritus), Philip M. Podsakoff\* (Emeritus), James H. Pratt\*, Jeff Prince\*, Eric B. Rasmusen\*, Sonja Rego\*, Eric L. Richards, Roger W. Schmenner\* (Emeritus), Rebecca J. Slotegraaf\*, Daniel C. Smith\*, J. Reed Smith\*, Ashok Kumar Soni\*, Gilvan Souza\*, Rosann Lee Spiro\* (Emerita), Geoffrey B. Sprinkle\*, Jerrold J. Stern\*, Charles Trzcinka\*, Gregory F. Udell\*, Ramesh Venkataraman\*, M. A. Venkataramanan\*, James M. Wahlen\*, Rockney Walters\*, Zhenyu Wang, Bradley Charles Wheeler\*, James C. Wimbush\*, Wayne L. Winston\* (Emeritus), Teri Yohn\*, Xiaoyun Yu\*

### Associate Professors

Hillol Bala\*, J. Cathy Bonser-Neal, Jason Brown\*, Andrew Ellul, Gregory Fisher, Eitan Goldman\*, Nandini Gupta, Rick Harbaugh\*, Jonathan Helm, Eric N. Johnson\*, Steven L. Jones\*, Sreenivas Kamma\*, William Kulsrud\*, Ashok Lalwani\*, Haizhen Lin\*, Richard Magjuka\*, Girish Mallapragada, Martin Arthur McCrory, Brian P. Miller\*, , Robert Neal\*, Ernest O'Boyle, Rodney Parker\*, Alfonso Pedraza Martinez\*, Joshua Perry, Veronika Pool\*, Michael Rauh\*, Lopo Rego\*, Richard Rogers, Todd Saxton, Joe Schroeder\*, Casey Schwab, Merih Sevilir, Scott Shackelford\*, Marcy Shepardson\*, Richard L. Shockley Jr.\*, Noah Stoffman\*, Bridget Stromberg\*, Mohan Tatikonda\*, Mikel G. Tiller\*, Wenyu Wang\*, Matthijs Wildenbeest\*, Owen Wu\*, Lucy Yan, Jun Yang\*, Xiaoyun Yu\*, Jingjing Zhang\*, Eric Zhao\*

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, Amrou Awaysheh, Geroge Ball\*, Ruth Beer\*, R. Andrew Butters\*, Jason Brown, Daniel Carvalho, M.K. Chin, Ruomeng Cui, Beth Fossen, Fei Gao, Ruoran (Janet) Gao, Erik Gonzalez-Mule, Shyam Gopinath, Cristiano Guarana, Isaac Hacamo, Todd Haugh, Niklas Huether, Fujie Jin, Niket Jindal, Matt Josefy, Preetesh Kantak, Kristoph Kleiner, Antino Kim, Aaron Kolb\*, Krista Li, David Major, Jeff McMullin, Jorge Mejia\*, Brian P. Miller, Jenny Olson Joseph Pacelli, Asa Palley\*, Marilyn Pease, Xiaoshan Peng, Marc Peter Picconi, Alessandro Previtero, Angie Raymond, Rafael Lopes Rogo, Dan Sacks\*, Batchimeg Sambalaibat, Jan Schneemeir, Lori Shefchik, Boyoung Seo\*, Abbey Stemler, Regan Stevenson, Xue Jane Tan, Ayung Tseng, Sheri Walter, Stephanie Wang, Steven Whiting, Brian Williams, Trent Williams\*, , Donald Young, ,

### Chairperson of the Doctoral Program

Professor Rebecca Slotegraaf\*, Kelley School of Business, BU HH-7302, (812) 855-8189

## Central Eurasian Studies

**Hamilton Lugar School of Global and International Studies**

**College of Arts and Sciences**

**Departmental E-mail:** [ceus@indiana.edu](mailto:ceus@indiana.edu)

**Departmental URL:** [www.indiana.edu/~ceus](http://www.indiana.edu/~ceus)

The department offers a comprehensive program on the study of Central Eurasia, the vast heartland of Europe and Asia. Students are introduced to the area as a whole and specialize in one of the major regions within Central Eurasia. The degree program consists of two interconnected elements: a language of specialization, which gives a student access to the culture of a given region through the voices of its people; and a region of specialization, which includes courses on various aspects of the region's culture. The language of specialization may be any language offered regularly in the department, including Estonian, Finnish, Hungarian, Mongolian, Persian, Tibetan, Turkish, Uyghur, Uzbek, and other two-year department languages permitted by the student's Graduate Advisory Committee.

Some regions and languages such as the Siberian region (including the Buryat, Evenki, Yakut, and other languages) and the Volga-Kama region (including the Mari, Mordvin, and other languages) are also available only as individualized specializations at the Ph.D. level.

The Department of Central Eurasian Studies (CEUS) is affiliated with the Hamilton Lugar School of Global and International Studies (HLS) of the College of Arts and Sciences, dedicated to providing Indiana University graduate students with the intellectual tools they will need to live, work, and thrive in the globalized world of the twenty-first century. Degree programs associated with HLS emphasize language proficiency, cultural competency, and in-depth training in qualitative and quantitative methodologies. HLS students enjoy unparalleled access to a stellar faculty and professional development opportunities. For further information regarding the mission, structure, and resources of the Hamilton Lugar School of Global and International Studies, see <http://hls.indiana.edu>.

### Curriculum

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Degrees Offered

Master of Arts and Doctor of Philosophy in CEUS. CEUS also offers a dual M.A./M.P.A. degree with the O'Neill School of Public and Environmental Affairs, a dual M.A./M.B.A. degree with the Kelley School of Business and dual M.A./M.I.S. and M.A./M.L.S. degrees with the Department of Information and Library Science.

### Special Departmental Requirements

(See also general University Graduate School requirements.)

## Master of Arts Degree

The degree requirements are subdivided into fields based on the region of specialization: the Baltic-Finnish region (with primarily Estonian or Finnish as language of specialization), the Central Asian region (including Xinjiang, with primarily Uyghur and Uzbek, but also Kazakh, as language of specialization), the Hungarian region (with Hungarian as language of specialization), the Iranian region (with Persian as language of specialization), the Mongolian region (with Mongolian as language of specialization), Post-Communism and Nationalism (with a language of specialization chosen in consultation with the student's Graduate Advisory Committee; Russian may be an option), the Tibetan region (with Tibetan as language of specialization), and the Turkish region (with Turkish as language of specialization).

## Admission Requirements

All M.A. applicants must have achieved a minimum of a 3.0 (B) grade point average (GPA) for the B.A. course work. The undergraduate record should show two years of any single foreign language at the college level or the equivalent. Three letters of recommendation and a statement of purpose are required. GRE scores of at least 148 quantitative or 160 verbal taken within the last 5 years. In addition to the GRE exam, International applicants must have a score of 79 or higher for the iBT (internet-based exam). TOEFL scores must be no more than 2 years old. Please note that the paper-based TOEFL ITP exam – sometimes called the institutional TOEFL – offered by the Intensive English Program on the Bloomington campus, cannot be used in place of the TOEFL iBT. Admission to the MA and Ph.D programs are at the discretion of the Department.

## Course Requirements

A total of 30 credit hours: 3 credit hours of a professional research methodology course (course may be outside CEUS with prior approval from the Director of Graduate Studies); 6 credit hours of intermediate (second-year) level of a language of specialization (LOS) taught in the department; 12 credit hours of courses in the region of specialization (ROS); 6 credit hours of electives, at least 3 of which must be taken in the department unless approved by the Director of Graduate Studies; and 3 credit hours of CEUS-R691, the M.A. thesis course. Students passing a CEUS administered placement or proficiency exam testing beyond the intermediate level of the LOS may fill the 6 LOS credit hours with additional CEUS elective courses. Those with a previous MA with a thesis in a related field may not be required to write a thesis for the CEUS MA (see "Thesis" below). In such cases CEUS-R691 is replaced with an additional CEUS elective. The exact program for each student, based on departmental offerings, is established by the student's Graduate Advisory Committee.

## Research Language Requirement

Reading proficiency in one of the following: Chinese, French, German, or Russian. Substitutions, when justified by the student's field of specialization, may be permitted by the Director of Graduate Studies.

## Thesis

Required. M.A. thesis should be no fewer than 50 double-spaced pages (text and notes) and reflect the use of materials in the student's language of specialization or in at least one research language other than English. Thesis requirement can be waived if an M.A. thesis of at least 50 pages was written for an earlier M.A. degree in a related field.

## Dual Master of Arts in Central Eurasian Studies and Master of Public Affairs (M.A./M.P.A.) Degree

The Department of Central Eurasian Studies and the O'Neill School of Public and Environmental Affairs jointly offer a three-year program that qualifies students for a dual master's degree. The first semester of course work toward the dual degree may be completed in the O'Neill School of Public and Environmental Affairs to complete prerequisite courses that are only offered in the fall semester. Under this program, the degrees must be awarded simultaneously.

## Admission Requirements

Same as for the Master of Arts degree except that application must also be made to the O'Neill School of Public and Environmental Affairs for study toward the Master of Public Affairs degree. Students must be accepted by both units to be admitted to the dual degree program. Students may apply for admission to both programs simultaneously. Alternatively, students may apply first for the M.A. in Central Eurasian Studies and apply for the O'Neill School of Public and Environmental Affairs M.P.A. program during their first year of study; they can then enter the dual degree program in their second year of study.

## CEUS Requirements; Course Work, Thesis, and Research Language

A total of 24 credit hours: 6 credit hours of intermediate (second-year) level of a language of specialization (LOS) taught in the department; 9 credit hours of courses in the region of specialization (ROS); 6 credit hours of electives, at least 3 of which must be taken in the department; 3 credit hours of R691, CEUS's M.A. thesis course; and demonstration of reading proficiency (no credit hours) in a modern research language such as Chinese, French, German, or Russian. Substitutions, when justified by the student's field of specialization, may be permitted by the Director of Graduate Studies. Students passing a CEUS administered placement or proficiency exam testing beyond the intermediate level of the LOS may fill the 6 LOS credit hours with additional CEUS elective courses. The 3 credit hour professional research methodology course requirement of a CEUS M.A. shall be satisfied by the methodology course required for the School of Public and Environmental Affairs' M.P.A. The exact program for each student, based on departmental offerings, is established by the student's Graduate Advisory Committee. An M.A. thesis of not fewer than 50 double-spaced pages (text and notes) that reflects the use of materials in the student's language of specialization (LOS) or in at least one research language other than English.

## Public and Environmental Affairs Course Requirements

Dual degree students must complete the core requirements for the M.P.A. and a specialized SPEA concentration (36 credit hours) to include: SPEA-



F 560 Public Finance and Budgeting, SPEA-V 502 Public Management, SPEA-V 506 Statistical Analysis for Effective Decision Making, SPEA-V 517 Public Management Economics, SPEA-V 540 Law and Public Affairs, SPEA-V 600 Capstone in Public and Environmental Affairs. For more information see: [https://bulletins.iu.edu/iu/spea/2018-2019/programs/bloomington/mpa\\_dual/other.shtml](https://bulletins.iu.edu/iu/spea/2018-2019/programs/bloomington/mpa_dual/other.shtml).

### Note on Tuition Costs

Students in this dual-degree program may find variance in their tuition charges. There is no standardized method of coding students in dual-degree programs. The O'Neill School of Public and Environmental Affairs and the College of Arts and Sciences charge different graduate tuition rates per credit hour. The school in which you register each semester may depend on your funding. It is the student's responsibility to consult with both units to determine in which school they should register each semester.

### Dual Masters of Arts in Central Eurasian Studies and Master of Business Administration (M.A./M.B.A.) Degree

The Department of Central Eurasian Studies, in cooperation with the Kelley School of Business, offers a three-year program that qualifies students for two Master's degrees. Study in the dual degree program allows students to complete the M.A. and M.B.A. with a total of 66 credit hours rather than the 84 hours that would be required to take the two degrees separately. Under this program, the degrees must be awarded simultaneously.

### Admission

Students must apply separately for admission to the M.A. program in Central Eurasian Studies and the M.B.A. program in the School of Business and must be accepted by both units in order to be admitted to the dual degree program. Students may apply for admission to both programs simultaneously. Alternatively, students may apply first for the M.A. in Central Eurasian Studies and apply for the M.B.A. program during their first year of study; they can then enter the dual degree program in their second year of study, provided that they have completed no more than 24 hours of M.A. credit before starting work on the M.B.A. Either way, students will spend one year in the College of Arts and Sciences and one year at the School of Business and the final year completing the final requirements (including the thesis) of both programs.

### CEUS Requirements: Course Work, Thesis, and Research Language

A total of 24 credit hours: 6 credit hours of intermediate (second-year) level of a language of specialization (LOS) taught in the department; 9 credit hours of courses in the region of specialization (ROS); 6 credit hours of electives, at least 3 of which must be taken in the department; 3 credit hours of R691, CEUS's M.A. thesis course; and demonstration of reading proficiency (no credit hours) in a modern research language such as Chinese, French, German, or Russian. Substitutions, when justified by the student's field of specialization, may be permitted by the Director of Graduate Studies. Students passing a CEUS administered placement or proficiency exam testing beyond the intermediate level of the LOS may fill the 6

LOS credit hours with additional CEUS elective courses. The 3 credit hour professional research methodology course requirement for a CEUS M.A. shall be satisfied by the methodology course required for the Kelley School of Business' M.B.A. The exact program for each student, based on departmental offerings, is established by the student's Graduate Advisory Committee. An M.A. thesis of not fewer than 50 double-spaced pages (text and notes) that reflects the use of materials in the student's language of specialization (LOS) and/or in at least one research language other than English.

### Business Course Requirements

Required and elective courses for a total of 42 credit hours. The possibilities of course combinations are many and will depend on your specific career goals. All students in the dual degree program are strongly urged to arrange a course of study that includes courses in international business. For full details, contact the M.B.A. program office at 812-855-8006.

### Note on Tuition Costs

Students in this dual-degree program may find variance in their tuition charges. There is no standardized method of coding students in dual-degree programs. The Kelley School of Business and the College of Arts and Sciences charge different graduate tuition rates per credit hour. The school in which you register each semester may depend on your funding. It is the student's responsibility to consult with both units to determine in which school they should register each semester.

### Dual Master of Arts in Central Eurasian Studies and Master of Information Science (M.A./M.I.S.) Degree

The Department of Central Eurasian Studies offers a dual degree program in cooperation with the Department of Information and Library Science that prepares students for a wide range of careers requiring a combination of technical skills in information science, foreign language proficiency, and area expertise. Study in the dual degree program allows students to complete the M.A. and M.I.S. with a total of 60 credit hours rather than the 72 hours that would be required to take the two degrees separately. Students take at least 24 credit hours in CEUS and at least 36 graduate credit hours in Information and Library Science. Under this program, the two degrees must be awarded simultaneously.

### Admission

Students must apply separately for admission to the M.A. program in Central Eurasian Studies and the M.I.S. program in the Department of Information and Library Science and must be accepted by both units in order to be admitted to the dual degree program. Students may apply for admission to both programs simultaneously. Alternatively, students enrolled in one program may apply for admission to the other any time before the completion of their degree.

### CEUS Requirements: Course Work, Thesis, and Research Language

A total of 24 credit hours: 6 credit hours of intermediate (second-year) level of a language of specialization (LOS) taught in the department; 9 credit hours of courses in the region of specialization (ROS); 6 credit hours of electives, at least 3 of which must be taken in the



department; 3 credit hours of R691, CEUS's M.A. thesis course; and demonstration of reading proficiency (no credit hours) in a modern research language such as Chinese, French, German, or Russian. Substitutions, when justified by the student's field of specialization, may be permitted by the Director of Graduate Studies. Students passing a CEUS administered placement or proficiency exam testing beyond the intermediate level of the LOS may fill the 6 LOS credit hours with additional CEUS elective courses. The 3 credit hour professional research methodology course requirement for a CEUS M.A. shall be satisfied by the methodology course required for the Department of Information and Library Sciences' M.I.S. The exact program for each student, based on departmental offerings, is established by the student's Graduate Advisory Committee. An M.A. thesis of not fewer than 50 double-spaced pages (text and notes) that reflects the use of materials in the student's language of specialization (LOS) and/or in at least one research language other than English.

### **Department of Information and Library Science Requirements**

All dual degrees with the MIS must complete the M.I.S. Foundation Requirement (18 cr.) plus at least 18 credit hours of ILS elective courses (3 credit hours).

#### **Note on Tuition Costs**

Students in this dual-degree program may find variance in their tuition charges. There is no standardized method of coding students in dual-degree programs. The Department of Information and Library Science in the School of Informatics and Computing and the College of Arts and Sciences charge different graduate tuition rates per credit hour. The school in which you register each semester may depend on your funding. It is the student's responsibility to consult with both units to determine in which school they should register each semester.

### **Dual Master of Arts in Central Eurasian Studies and Master of Library Science (M.A./M.L.S.) Degree**

The Department of Central Eurasian Studies offers a dual degree program in cooperation with the Department of Information and Library Science. Study in the dual degree program allows students to complete the M.A. and M.L.S. with a total of 54 credit hours rather than the 66 hours that would be required to take the two degrees separately. Students take at least 24 credit hours in CEUS and at least 30 graduate credit hours in Information and Library Science. Under this program, the two degrees must be awarded simultaneously.

#### **Admission**

Students must apply separately for admission to the M.A. program in Central Eurasian Studies and the M.L.S. program in the Department of Information and Library Science and must be accepted by both units in order to be admitted to the dual degree program. Students may apply for admission to both programs simultaneously. Alternatively, students enrolled in one program may apply for admission to the other any time before the completion of their degree.

### **CEUS Requirements: Course Work, Thesis, and Research Language**

A total of 24 credit hours: 6 credit hours of intermediate (second-year) level of a language of specialization (LOS) taught in the department; 9 credit hours of courses in the region of specialization (ROS); 6 credit hours of electives, at least 3 of which must be taken in the department; 3 credit hours of R691, CEUS's M.A. thesis course; and demonstration of reading proficiency (no credit hours) in a modern research language such as Chinese, French, German, or Russian. Substitutions, when justified by the student's field of specialization, may be permitted by the Director of Graduate Studies. Students passing a CEUS administered placement or proficiency exam testing beyond the intermediate level of the LOS may fill the 6 LOS credit hours with additional CEUS elective courses. The 3 credit hour professional research methodology course requirement for a CEUS M.A. shall be satisfied by the methodology course required for the Department of Information and Library Sciences' M.L.S. The exact program for each student, based on departmental offerings, is established by the student's Graduate Advisory Committee. An M.A. thesis of not fewer than 50 double-spaced pages (text and notes) that reflects the use of materials in the student's language of specialization (LOS) and/or in at least one research language other than English.

### **Department of Information and Library Science Requirements**

In addition to the MLS Foundation Requirement of 18 credit students at least 12 credit hours of ILS elective courses appropriate to the student's background and interests.

#### **Note on Tuition Costs**

Students in this dual-degree program may find variance in their tuition charges. There is no standardized method of coding students in dual-degree programs. The Department of Information and Library Science in the School of Informatics and Computing and the College of Arts and Sciences charge different graduate tuition rates per credit hour. You will initially be coded in one unit or the other. As you near the half-way point in your dual-degree program, you should contact either Information and Library Science or the College, so arrangements can be made to change your coding and the second half of your degree can be charged at the other unit's tuition rate. Check with the Recorder of either school if you have questions.

### **Doctor of Philosophy Degree Admission Requirements**

Qualified applicants with an MA degree in a related field and the necessary language skills can apply for direct admission to the Ph.D program. For those admitted to the Ph.D program without a previous MA, an MA will be awarded during progress to the Ph.D once relevant requirements are met including an MA thesis.

#### **Course Requirements**

A minimum of 78 credit hours of graduate course work (including those earned for the CEUS M.A.), Ph.D. course work shall be distributed as follows: four departmental courses relevant to the student's region of specialization (ROS) (12 credit hours); three courses in the language of specialization (LOS) and linguistics (9 credit hours); one 600 or 700-level seminar taught in the department

(3 credit hours). Director of Graduate Studies approval needed for any 600 or 700-level seminar course outside of CEUS if a relevant course is not offered in the department; outside minor (a minimum of 12 credit hours); elective courses (12 credit hours). Students complete the remainder of the 90 credit hours required by the College of Arts and Sciences by enrolling in R890 or in courses selected in consultation with their department advisor.

### **Outside Minor**

Students must fulfill the requirements for a minor in an outside department or program. The minor should support the student's disciplinary specialization within the department and be chosen in consultation with the student's Graduate Advisory Committee.

### **Minors by Students from Other Departments**

Ph.D. students majoring in other departments may take a minor in the Department of Central Eurasian Studies. This shall consist of 12 credit hours of courses taught in the department of which no more than 6 credits are language credit hours. The specific courses used to complete the minor in Central Eurasian Studies shall be approved in writing by the department faculty member who is selected by the student to serve on the student's Ph.D. qualifying committee as an outside minor representative. Students pursuing a minor are encouraged to identify a faculty advisor in the department as early as possible so that a well-integrated program of study can be established.

### **Research Language Requirement**

Requires one research language in addition to the research language required for the M.A. requirement.

### **Qualifying Examination**

Written and oral.

The student will be examined in two fields with a separate faculty examiner for each field. The written portion of the qualifying examination will be two hours long for each of the two fields in which the student is to be examined. Prior to the exam, the student, in consultation with the faculty examiners, will prepare an examination reading list for each field. These reading lists must include works in both the language of specialization and the research languages. These reading lists will be kept on file with the examinations. Each of the faculty examiners will prepare three or four questions, of which the student will answer two, allowing approximately one hour for each question.

Marks of "outstanding," "excellent," "good," "fair," and "failure" will be assigned to each field in the written and oral examinations. Unsatisfactory performance in one field of the written examination will require repetition of the examination in that field before the orals may be taken. Failing marks received in two fields of the written examination will constitute failure in the written part, and the student will not be allowed to retake the written examination during the same semester. If the student fails the written examination twice, consent to continue work in the department will be withdrawn.

Unsatisfactory performance in one field of the oral examination will require repetition of the examination in that field. Failing marks received in two fields of the oral examination will constitute failure in the oral part, and the student will not be allowed to retake the oral examination

during the same semester. If the student fails the oral examination twice, permission to continue work in the department will be withdrawn.

### **Dissertation**

Required.

### **Final Examination**

Defense of dissertation.

### **Faculty**

#### **Chairperson**

Professor Jamsheed K. Choksy\*

#### **Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### **Distinguished Professor**

Christopher I. Beckwith\*

Jamsheed K. Choksy\*

#### **Ottoman and Modern Turkish Studies Professor**

Professor Kemal Silay\*

#### **Peter A Kadas Chair Professor**

László Borhi\*

#### **Professors**

Ilhan Basgöz\* (Emeritus), Christopher I. Beckwith\*, Jamsheed Choksy\*, Devin A. DeWeese (Emeritus)\*, William Fierman\* (Emeritus), György Kara\*, Paul Losensky\*, Anne Pyburn\* (Adjunct, Anthropology), Toivo Raun\*, M. Nazif Shahrani\*, Kemal Silay\*,

#### **Associate Professors**

Laszlo Borhi\*, Gardner Bovingdon\*, George Fowler\* (Adjunct, Slavic Languages & Literatures), Marianne Kamp\*, Jason Mokhtarian\* (Adjunct, Religious Studies), Richard Nance\* (Adjunct, Religious Studies), Öner Özcelik\*, Kaya Sahin\* (Adjunct, History), Ron Sela\*, Jonathan Schlesinger\* (Adjunct, History),

#### **Assistant Professors**

Kathryn Graber\*, Stacey Van Vleet\*

#### **John D. Soper Senior Lecturers**

Malik Hodjaev, Gulnisa Nazarova

#### **Senior Lecturers**

Sibel Crum, Shahyar Daneshgar, Piibi-Kai Kivik, Tserenchunt Legden, Gedun Rabsal, Valeria Varga, Roman Zlotin (Adjunct, Geography)

#### **Lecturers**

Elisa Räsänen

#### **Academic Specialists**

Michael Brose

#### **Director of Graduate Studies**

Associate Professor Gardner Bovingdon , GISB 3025, (812) 856-0230.

All official advising beginning with the second semester of enrollment is done by the student's Graduate Advisory Committee.

## Courses

### History, Civilization, or Other Culture Courses

#### Baltic-Finnish

- CEUS-R 501 The Baltic States Since 1918 (3 cr.) This course introduces the Baltic states at the graduate level. We cover independence during the Russian Revolution and three eras: interwar, Soviet rule, and the re-establishment of independence and aftermath. Socio-economic change and culture also receive attention. The approach is comparative. Weekly meetings are centered on discussion of common readings.
- CEUS-R 502 Modern Finland (3 cr.) This course studies modern Finnish history in depth. The course stresses the following: Russification; 1905 Revolution; independence; interwar period, the Winter War and the Continuation War; "Finlandization," economic miracle, and welfare state; changing role of women; Finland as part of Scandinavia; literature, art, and music; and membership in the EU.
- CEUS-R 504 Contemporary Finnish Literature (3 cr.) An introduction to contemporary Finnish literature which leads students through its major developments over the last 30 years. Focuses on the major themes and trends of Finnish literature through selected representative works. Finnish texts will be read in translation, analyzed and discussed.
- CEUS-R 508 Estonian Culture and Civilization (3 cr.) This course explores Estonian cultural development, including folklore and oral tradition, religion, language and literature, literacy and education, high culture (music, art, theatre, film), and the rise of an Estonian press and printing in general. Some comparison will be made to neighboring and other European traditions. Media presentations illustrate these developments.
- CEUS-R 509 Topics in Baltic-Finnish Studies (3 cr.) Topics in Baltic-Finnish Studies is used for new classes in Baltic-Finnish studies, aimed at M.A. and early Ph.D. students and/or upper division undergraduates. Such classes are typically taught by a mix of lecture and discussion.
- CEUS-R 600 Advanced Readings in Baltic-Finnish Studies (1-6 cr.) This course number is for tutorials in advanced topics in Baltic-Finnish studies. Readings may include work on demanding classical texts or a survey of the secondary literature on a topic or some combination thereof.
- CEUS-R 700 Seminar in Baltic-Finnish Studies (3 cr.) Seminar in Baltic-Finnish Studies introduces doctoral students to current areas of research in Baltic-Finnish studies, using primary sources, full review of secondary literature, sound philological methodology, and/or theoretically sophisticated

research designs. Classes will address particular areas and issues of interest to faculty and advanced graduate students.

#### Central Asian

- CEUS-R 510 Introduction to Central Asian History (3 cr.) The breakup of the Soviet Union has dramatically increased global interest in Central Asia. This course offers students opportunity to explore Central Asia's role in world history, in Islam, and as linking East Asia, South Asia, the Middle East, and Eastern Europe. Readings include Central Asian sources in English translation.
- CEUS-R 511 Travelers and Explorers in Central Asia (3 cr.) This course charts the exploration of Central Asia (from China to Iran) in the eighth through nineteenth centuries as a gateway to this fascinating but under-studied region. Using primary sources in English translation, we will evaluate these travelogues as sources, comparing and contrasting medieval and modern, insider and outsider, perspectives.
- CEUS-R 512 Shrine and Pilgrimage in Central Asian Islam (3 cr.) This course surveys religious beliefs and activities involving shrines and pilgrimage to holy places in Muslim Central Asia, from beginnings to today. Our aim will be to understand both how shrines served the religious needs of Central Asian Muslims and the relationship between shrine-centered religious life and "normative" religious practices.
- CEUS-R 513 Islam in the Former Soviet Union (3 cr.) This course surveys Islam and Muslim communities in areas of the former USSR. After basic coverage of Islam, Russian expansion, and their interaction, we focus on the pressures experienced and exerted by Islam, as religion and socio-cultural system, with attention to religious life's adaptations to the Soviet and post-Soviet context.
- CEUS-R 514 Islamization in Inner Asia (3 cr.) This course seeks to understand the distinctive character of Islam in Inner Asia. Introductory lectures treat religious change and "conversion," and geographic, ethnic, and political contexts. Later lectures explore cases of Islamization, emphasizing indigenous accounts and their significance in Islamic and Inner Asian patterns of religious meaning and ritual.
- CEUS-R 515 Politics & Society in Central Asia (3 cr.) This course introduces Central Asia, esp. of the former Soviet Union, focusing on the 1980s and beyond. Main topics are politics, society, and economy; others include demography, Islam, women, and foreign policy. The format is primarily lecture, with three essay exams, graduate students complete a paper or project.
- CEUS-R 516 Peoples and Cultures of Central Asia (3 cr.) Anthropology of former Soviet Central Asia and adjacent areas of Iran and Afghanistan. Topics: ecology; ethno-history; subsistence traditions; kinship, gender, and identities; religion; transformations under Russia, Iran, Afghanistan, and the war on terrorism. No previous knowledge

presumed; background in anthropology helpful. Course consists of lectures, readings, films, slides, and discussion.

- CEUS-R 518 Labor and Migration in Central Asia (3 cr.) This course focuses on changes from formal to informal labor regimes and traces migration flows in contemporary Central Eurasia, asking questions about labor economics, gender, culture and ethnicity, and geopolitics.
- CEUS-R 520 Central Asia in Soviet Times (3 cr.) Was the Soviet Union the inventor or prison of the nations of Kazakhstan, Uzbekistan, Tajikistan, Turkmenistan and Kyrgyzstan? Lecture and discussion course examines the Soviet experiment and its legacy in Central Asia through topics such as economic planning, nuclear testing, language policies, repression and revival of Islam.
- CEUS-R 527 Post-Soviet Central Asia Politics, Economy and Foreign Policy (3 cr.) P: Student should have some familiarity with Central Asia and/or political, economic, and social issues in other post-Soviet countries. This course will focus on political, economic, and foreign issues since 1991 in the five former Soviet republics that emerged as independent countries in Central Asia. Our main focus will be the similarities and differences among the newly independent states of Central Asia.
- CEUS-R 528 Post-Soviet Central Asia; Identity, Language, and Social Issues (3 cr.) P: Some familiarity with Central Asia and/or political, economic, and social issues in other post-Soviet countries. This course focuses on the development in a variety of policy areas since 1991 in the five former Soviet republics that emerged as independent countries in Central Asia. Each class will be a different topic although we will concentrate on similarities and differences among newly independent states of Central Asia.
- CEUS-R 529 Topics in Central Asian Studies (3 cr.) Topics in Central Asian Studies is used for new classes in Central Asian studies, aimed at M.A. and early Ph.D. students and/or upper division undergraduates. Such classes are typically taught by a mix of lecture and discussion.
- CEUS-R 610 Advanced Readings in Central Asian Studies (1-6 cr.) This course number is for tutorials in advanced topics in Central Asian studies. Readings may include work on demanding classical texts or a survey of the secondary literature on a topic or some combination thereof.
- CEUS-R 611 Ethnic History of Central Asia (3 cr.) This course surveys Central Asia's ethnic history from ancient times to today. Part of the Islamic world, Central Asia has been a crossroads of cultures. Nomadic migrations, Russia and China's imperial policies, and Central Asian nationalism further affected interethnic relations. The course provides background to understand interethnic relations there today.
- CEUS-R 612 Central Asia Under Russian Rule (3 cr.) This course surveys Russia and Central Asia's complex relations, covering Russian expansion in the 16th century, Russian conquest in the 19th century, socio-political developments, and emergence of modern nations in the 1920s. Themes addressed include: mechanisms of Empire, dynamics between Conqueror and Conquered, and colonial administration of Islamic peoples.
- CEUS-R 613 Islamic Central Asia, Sixteenth-Nineteenth Centuries (3 cr.) This course surveys Islamic Central Asia from the 16th century to the Russian conquest: especially Chinggisid Uzbek states and the 'tribal' dynasties, but also East Turkestan to 1755, and nomadic Qazaqs, Kirghiz, and Turkmens. Themes include political institutions, legitimation, nomads and sedentaries, ethnic developments, religion and culture; sources and historiography.
- CEUS-R 614 Yasavi Sufis and Central Asian Islam (3 cr.) This course surveys the Yasavi Sufi tradition, a major religious current in Islamic Central Asia since the 13th century. We explore its historical and religious background, the life of its founder, Khoja Ahmad Yasavi, transmission lineages, the coalescence of the Yasavi Sufi "order," and its legacy in contemporary Central Asia.
- CEUS-R 615 The Naqshbandi Sufi Tradition in Central Asia (3 cr.) Familiar in India and the Ottoman Middle East, the Naqshbandi order is less well known in its Central Asian homeland. This course covers Sufism in Central Asia, challenges under Mongol rule, early founding figures, doctrinal profile and practices, and the subsequent history of the Naqshbandi communities to the 20th century.
- CEUS-R 616 Religion and Power in Islamic Central Asia (3 cr.) Course explores the role of religious figures and institutions in sanctioning, exercising, and/or undermining political authority in Islamic Central Asia. The course focuses on the political influence wielded by the local representatives of Islam's spiritual ideal, especially Sufi shaykhs and how they used their extraordinary socio-economical, and political power.
- CEUS-R 627 Islam and Modernity in Central Eurasia, 1850-present (3 cr.) Understanding the background to headlines about Islam today demands serious reading of sources, appreciation of Islam's diversity, and awareness of internal controversies. In recent centuries, Muslims, like other religious believers, have been challenged by modernity. How Muslims of Central Eurasia have responded to modernity is this course's primary theme.
- CEUS-R 628 Russia's Orient 1552-1924 (3 cr.) This graduate course examines the relationship between Russia and the Turkic peoples in the Black Sea, Caucasus, and Volga-Ural regions, as well as nomadic and sedentary Central and Inner Asia. Themes include: Russian expansion, efforts to situate the "oriental" Other within the Empire, imperial management, and indigenous resistance and accommodation.
- CEUS-R 629 Islamic Hagiography of Central Asia (3 cr.) P: Reading knowledge of Persian or



Chaghatay or Turkic. This course familiarizes students with Central Asia's Islamic hagiographical from the 12th-19th centuries, introduces them to problems in interpreting it, and provides experience in reading examples. After introductory lectures, the course is devoted to guided readings in Persian and/or Chaghatay Turkic hagiographies, mostly drawn from unpublished manuscripts.

- CEUS-R 710 Seminar in Central Asian Studies (3 cr.) Seminar in Central Asian Studies introduces doctoral students to current areas of research in Central Asian studies, using primary sources, full review of secondary literature, sound philological methodology, and/or theoretically sophisticated research designs. Classes will address particular areas and issues of interest to faculty and advanced graduate students.
- CEUS-R 711 Seminar on Comparative Study of Central Asia and Middle East (3 cr.) This seminar explores various issues in Central Asian and the Middle Eastern society from an anthropological perspective. Past topics include "Islam and Politics," "Representations of Islam and Muslims," and "Family, Gender, and the Crisis of Masculinity."
- CEUS-R 713 Sources for the Study of Central Asian History (3 cr.) This seminar is fundamental training for graduate students in the field of Central Asian history. Lectures cover thoroughly all types of sources used for the study of Central Asian history during the Islamic period (8th-19th c.), with special emphasis on written sources, both in indigenous and European languages.

#### Central Asian-Xinjiang

- CEUS-R 530 Politics in Modern Xinjiang (3 cr.) Xinjiang has been a colony of the Manchu empire, a warlord fiefdom, an independent republic, and an "autonomous region" in China. This course covers Xinjiang's politics from 1900 to the present, focusing on Islam, identity politics, immigration, language battles, cultural resistance, the Production and Construction Corps, political economy, and oil.
- CEUS-R 531 Grave Robbers, Missionaries, and Spies: Foreign Adventurers in Chinese Turkistan (3 cr.) From the 19th century to the mid-20th, the mysteries of Xinjiang (Chinese Turkistan) lured outsiders: missionaries, archeologists, treasure hunters, adventurers, scouts, officials, and outright spies. Fortunately, many left readable accounts of their discoveries. Through them we explore both the region's attraction to outsiders and their influence on the region.
- CEUS-R 532 From Kingdom to Colony to Province: History of Xinjiang to 1911 (3 cr.) This course introduces the tumultuous history of Xinjiang, geographically part of Central Asia, but now under China. We will cover cultural, ethnic, religious, and geopolitical changes up to 1911. Topics include ecology and economy, Uyghur, Chinese, Mongol, and Manchu empires, Islamization, the Jadidist movement, and stirrings of nationalism.
- CEUS-R 533 Cultures and Civilization of Xinjiang (3 cr.) This course surveys Xinjiang (Chinese Turkistan) from prehistory to today: material life, languages, literature, arts, and religion. With texts and audiovisuals, we will consider the "mummy controversy," Xinjiang on the so-called Silk Road, Islamization, and cultural diversity today. Themes include cultural borrowing, "clash of civilizations," and the politics of multiculturalism.

#### Hungarian

- CEUS-R 540 Introduction to Hungarian Studies (3 cr.) What makes Hungary special? How have Hungarians drawn on surrounding cultures? This course introduces major issues in Hungarian Studies, from the migration to the present. After a geographic survey, we explore issues of Hungarian identity, with particular reference to issues of ethnicity, religion, and culture, both high and low.
- CEUS-R 542 Roma Gypsy History & Culture (3 cr.) Europe's largest minority, the so-called "Gypsies," more properly the Roma, have been killed, hunted, and reviled; yet the exotic flavoring of "Gypsiness" has fascinated writers, artists, and composers. This course surveys Roma history and representations. No background in East European studies, music, or film is required; readings are in English.
- CEUS-R 547 East Central European Cities in Comparative Perspective (3 cr.) This course is currently not offered. This course explores East-Central European cities through history, sociology, literature, film and the arts: under Austrian or Russian rule until WWI, newly independent between the wars, under Soviet hegemony from WWII to 1989, and facing challenges of development and European integration since then. Main focus on Budapest, Warsaw, and Prague.
- CEUS-R 549 Topics in Hungarian Studies (1-4 cr.) Topics in Hungarian Studies is used for new classes in Hungarian studies, aimed at M.A. and early Ph.D. students and/or upper division undergraduates. Such classes are typically taught by a mix of lecture and discussion.
- CEUS-R 640 Advanced Readings in Hungarian Studies (1-6 cr.) This course number is for tutorials in advanced topics in Hungarian studies. Readings may include work on demanding classical texts or a survey of the secondary literature on a topic or some combination thereof.
- CEUS-R 641 Art & Music of 19th & 20th Century Hungary (3 cr.) The 19th and 20th centuries saw the birth of Hungary's greatest artists and musicians, the development of national institutions in the arts, and debates over tradition vs. innovation, Hungarian folk elements vs. integration into Europe's artistic mainstream. This course surveys these major developments in Hungarian visual art and music.
- CEUS-R 642 Bela Bartok: Composer in Context (3 cr.) This course surveys Bela Bartok's major compositions and writings, exploring how his eclectic and contradictory works responded to changing artistic and political climates of east-central Europe

in the twentieth century's first half. Finally we will explore Bartok's legacy on both sides of the Iron Curtain, and since 1989.

- CEUS-R 649 The Roma Through History, Music, and Film (3 cr.) Writers, artists, filmmakers, and composers have long exploited the exotic image of "Gypsies," or Roma. Roma musicians are also indispensable to folk and popular music practices around Europe. This course will examine both how this "mysterious" group has been represented and how its members have responded creatively to these representations.
- CEUS-R 740 Seminar in Hungarian Studies (3 cr.) Seminar in Hungarian Studies introduces doctoral students to current areas of research in Hungarian studies, using primary sources, full review of secondary literature, sound philological methodology, and/or theoretically sophisticated research designs. Classes will address particular areas and issues of interest to faculty and advanced graduate students.

### Iranian

- CEUS-R 551 Prophets, Poets, and Kings: Iranian Civilization (3 cr.) This course traces the history of Iranians from ancient times through the Arab conquest to today. It focuses on institutions, religions, secular and ecclesiastic hierarchies, minorities, devotional and communal change, and Iranian influences on Islam. No previous knowledge or course work required.
- CEUS-R 552 Peoples & Cultures of the Middle East (3 cr.) This ethnographic survey examines the social institutions and cultural forms in contemporary Middle Eastern societies-i.e., the Arab world, Israel, Turkey, Iran and Afghanistan. Topics include: ecology; Islam; pastoral nomadism, agriculture, and cities; colonialism and nation states; tribalism, ethnicity, and gender; and modernization, oil wealth, labor migration, and social unrest.
- CEUS-R 554 Persian Literature in Translation (3 cr.) Study and analysis of selected readings from Persian literature in English translation. May concentrate on a particular theme, period, or author. Special attention paid to the historical and cultural contexts of the works, as well as problems in translation, critical analysis, and interpretation. Repeatable w/different topic for 6 credits.
- CEUS-R 559 Topics in Iranian Studies (3 cr.) Topics in Iranian Studies is used for new classes in Iranian studies, aimed at M.A. and early Ph.D. students and/or upper division undergraduates. Such classes are typically taught by a mix of lecture and discussion.
- CEUS-R 650 Advanced Readings in Iranian Studies (1-6 cr.) This course number is for tutorials in advanced topics in Iranian studies. Readings may include work on demanding classical texts or a survey of the secondary literature on a topic or some combination thereof.
- CEUS-R 750 Seminar in Iranian Studies (3 cr.) Seminar in Iranian Studies introduces doctoral students to current areas of research in Iranian

studies, using primary sources, full review of secondary literature, sound philological methodology, and/or theoretically sophisticated research designs. Classes will address particular areas and issues of interest to faculty and advanced graduate students.

### Mongolian

- CEUS-R 560 Modern Mongolia (3 cr.) In 1900 Mongolia was run by descendants of Genghis Khan and Buddhist lamas under China's last dynasty. In 1950 it was Soviet Russia's most loyal satellite, under the dictator Choibalsang. By 2000, Mongolia had become a democracy, with a struggling free-market economy. This course explores Mongolia's wrenching changes since 1900.
- CEUS-R 561 Mongolia's Middle Ages (3 cr.) This class covers the Mongolia's "middle ages" between the Mongol world empire and the modern era: 1350 to 1850. Topics include the nobility, Oirats, Buddhist conversion, Manchu-Chinese rule, and Buriats and Kalmyks in Russia. Readings include modern histories and sources in translation studied in a format combining lecture and discussion.
- CEUS-R 562 Mongolian Civilization and Folk Culture (3 cr.) Introduction to Mongolian traditional civilization: material culture (dwelling, clothing, food, warfare, hunting, animal husbandry, crafts, agriculture, etc.), social and spiritual life (kinship, wedding, birth, names, childhood, races, medicine, death, folk religion, Buddhism, shamanism, values and taboos, omens), folk arts (music, oral literature, dance, etc.). No knowledge of Mongolian is required.
- CEUS-R 563 Mongolian Historical Writings (3 cr.) P: Intermediate Mongolian or Classical Mongolian. Overview of traditional Mongolian historiography and other Mongolian historical sources: secular and religious chronicles, genealogies, biographies, works, inscriptions, edicts, letters, etc. from Chinggis Khan's time to the early twentieth century. A selection of sources of various genres are read, translated and analyzed, and their interpretation discussed.
- CEUS-R 564 Shamanism and Folk Religion of the Mongols (3 cr.) What is shamanism? What is its role in Mongol communities? Is it a religion? What is its relation to folk beliefs and world religions? Who becomes a shaman or shamaness? What skills, tools, and techniques are necessary? These questions will be discussed in this class; knowledge of Mongolian not required.
- CEUS-R 569 Topics in Mongolian Studies (3 cr.) Topics in Mongolian Studies is used for new classes in Mongolian studies, aimed at M.A. and early Ph.D. students and/or upper division undergraduates. Such classes are typically taught by a mix of lecture and discussion.
- CEUS-R 660 Advanced Readings in Mongolian Studies (1-6 cr.) This course number is for tutorials in advanced topics in Mongolian studies. Readings may include work on demanding classical texts or a

survey of the secondary literature on a topic or some combination thereof.

- CEUS-R 661 Mongolian Literature and Folklore (3 cr.) Interaction of orality and writing. History of Mongol literary studies. Internal and external sources. Broad and narrow concepts of literature. Periods and areas. Connections with other arts and the sacred. Authorship and anonymity. Original and translated works. Indo-Tibetan, Chinese, Turkic and Western influences. Prose and verse. Narrative and lyric genres.
- CEUS-R 662 Modern Inner Mongolia (3 cr.) This course explores Inner Mongolia's history from 1850 to today. Themes include Inner Mongolia as a bi-ethnic borderland, demography, the "New Schools Movement," pan-Mongolism, land reform, development and the environment. Students will think through issues of ethnicity, state-building, and globalization in both Inner Asian and Chinese contexts.
- CEUS-R 666 Mongolian Languages and Dialects (3 cr.) The course investigates the following topics in all attested Mongolic languages: language and dialects; periods, sources, and scripts; vowels & vowel harmony; consonants; historical morphology; personal pronouns; the n-stems; changes in verb systems; plurals; fusion, contraction; syntax change; negation & interrogation; word order; lexicon and loan words.
- CEUS-R 667 Mongolic Writing Systems (3 cr.) The course discusses the writing systems used by medieval and modern Mongolic peoples, the origins, functions, and classifications of scripts, their relation to religion and statehood. Introduction is given to the Kitan, Uyghur, 'Phags-pa, Galik, Oirat, etc. scripts, and to Mongolic in Manchu, Tibetan, Latin, Cyrillic and Arabic alphabets.
- CEUS-R 760 Seminar in Mongolian Studies (3 cr.) Seminar in Mongolian Studies introduces doctoral students to current areas of research in Mongolian studies, using primary sources, full review of secondary literature, sound philological methodology, and/or theoretically sophisticated research designs. Classes will address particular areas and issues of interest to faculty and advanced graduate students.
- CEUS-R 761 Ordos Documents (3 cr.) This course introduces (in original Mongolian with English translation) documents collected in the early twentieth century in southern Ordos (Inner Mongolia), which illustrate both Mongolian life and Mongolian studies methodology. The course's aim is to understand pre-revolutionary Mongolian society through the use of native documentary material.

## Tibetan

- CEUS-R 570 Introduction to the History of Tibet (3 cr.) This course surveys Tibet's history from beginning to today. Students study facets of Tibet's history that include: the Tibetan empire of the 7th-9th centuries, the impact of Buddhism, Tibet's relations

with neighboring peoples, the rise of the Dalai Lama, and the current issue of Tibet.

- CEUS-R 571 Tibet and the West (3 cr.) This course examines Western perceptions of Tibet during the past 700 years, comparing Tibetan civilization with popular conceptions that prevailed in the West during corresponding periods. Tibet as "Shangrila," reflected in such novels and films as *Lost Horizon*, will be examined along with Tibetan perceptions of Westerners and Western civilization.
- CEUS-R 572 Sino-Tibetan Relations (3 cr.) This course surveys interaction between Tibet and China from beginnings to today, touching on political, cultural, economic, and religious links. Areas explored include the rise of Tibet as a dynamic empire competing with Tang China, religious links between Tibetan hierarchs and Chinese rulers, and conflict over Tibet's incorporation into China.
- CEUS-R 573 The Religions of Tibet (3 cr.) This course surveys the history of Tibetan religions, and their impact on Tibetan society and culture. It will consider interactions between religions and politics and how they shaped public lifestyles, inspire movements, and molded identity through the centuries. Coverage will be both chronological and thematic.
- CEUS-R 579 Topics in Tibetan Studies (3 cr.) Topics in Tibetan Studies is used for new classes in Tibetan studies, aimed at M.A. and early Ph.D. students and/or upper division undergraduates. Such classes are typically taught by a mix of lecture and discussion.
- CEUS-R 670 Advanced Readings in Tibetan Studies (1-6 cr.) This course number is for tutorials in advanced topics in Tibetan studies. Readings may include work on demanding classical texts or a survey of the secondary literature on a topic or some combination thereof.
- CEUS-R 770 Seminar in Tibetan Studies (3 cr.) Seminar in Tibetan Studies introduces doctoral students to current areas of research in Tibetan studies, using primary sources, full review of secondary literature, sound philological methodology, and/or theoretically sophisticated research designs. Classes will address particular areas and issues of interest to faculty and advanced graduate students.
- CEUS-R 771 Introduction to Chinese Sources for Tibetan Studies (3 cr.) This course introduces the voluminous corpus of Chinese-language sources on Tibet: standard histories, unofficial histories, geographies, literary compositions, collectanea, etc. They will learn how to locate, handle, and navigate these materials. Students will also learn the major modern works of Chinese Tibetology, including journals and Chinese-language translations of Tibetan writings.

## Turkish

- CEUS-R 580 Literature of the Ottoman Court in Translation (3 cr.) The course involves reading and analyzing representative literary texts of the Ottoman court, both poetry and prose. It introduces

various literary forms of Ottoman authors: gazel, kaside, mesnevi, tezkire, etc. We will use both the classical Ottoman canon, as well as modern and contemporary theoretical approaches for interpretation.

- CEUS-R 582 Cultural History of the Ottoman Empire & Modern Turkey (3 cr.) This course introduces the rich and varied cultures of Turkey, from Ottoman times to today. It covers issues such as: literary and vernacular languages, women, Kemal Atatürk, Turkish Islams; education; Kurdish nationalism; and Turkey and Europe. Along with readings, Turkish films and other visual materials will be used.
- CEUS-R 583 Ten Sultans, One Empire: Ottoman Classical Age 1300-1600 (3 cr.) This course traces the Ottoman Empire from its beginnings to its height under Suleyman the Magnificent. Themes include: Turks before the empire; Asia Minor before the Turks; rival principalities; centralization; Ottomans as European and Middle Eastern; economy, society, religion, law, learning; ethnic/cultural diversity; and the "classical age" as a concept.
- CEUS-R 585 Structure of Turkish (3 cr.) Introduces the linguistic features of Turkish (phonetics, phonology, morphology, syntax, semantics) within the framework of recent linguistic models. Focuses on phonology and syntax. Also examines topics in morphology and semantics, and some language acquisition data within the context of linguistic typology and language universals. No prior knowledge of Turkish required.
- CEUS-R 586 Islam, Islamism, and Modernity in Turkey (3 cr.) Explores complex relationship between Islam and politics, and Islamism's predicament with modernity and democracy. Although it concentrates on Turkey and its Ottoman past, a comparative approach examines developments throughout Muslim Middle East and other parts of the world affected by the phenomena of political Islam and jihadist discourses and activities.
- CEUS-R 587 Contemporary Turkey (3 cr.) This course will introduce the political, social, and cultural history of modern Turkey. The goal of this course is to gain familiarity with the Turkish society and culture.
- CEUS-R 589 Topics in Turkish Studies (3-4 cr.) Topics in Turkish Studies is used for new classes in Turkish studies, aimed at M.A. and early Ph.D. students and/or upper division undergraduates. Such classes are typically taught by a mix of lecture and discussion.
- CEUS-R 680 Advanced Readings in Turkish Studies (1-6 cr.) This course number is for tutorials in advanced topics in Turkish studies. Readings may include work on demanding classical texts or a survey of the secondary literature on a topic or some combination thereof.
- CEUS-R 780 Seminar in Turkish Studies (3 cr.) Seminar in Turkish Studies introduces doctoral students to current areas of research

in Turkish studies, using primary sources, full review of secondary literature, sound philological methodology, and/or theoretically sophisticated research designs. Classes will address particular areas and issues of interest to faculty and advanced graduate students.

### General

- CEUS-R 592 Uralic Peoples & Cultures (3 cr.) This course surveys the Uralic (Finno-Ugric and Samoyed) peoples of northern Europe and Siberia. Topics include their origins and history, traditional and modern cultures, ethnic and national identity, development and modernization, and political independence and Russian rule. We will also cover inter-relations among Uralic peoples in the modern era.
- CEUS-R 593 The Mongol Century (3 cr.) This course explores in depth Chinggis Khan's Mongol empire from its origins in the 13th century to the continent-wide break down of the 1330-1370s. Format alternates lectures and discussion of primary sources (Mongolian, Chinese, Middle Eastern, and European) in translation, including many of the medieval era's greatest histories and travelogues.
- CEUS-R 594 Environmental Problems and Social Constraints in Northern and Central Eurasia (3 cr.) This course analyzes for undergraduate and graduate students environmental and social conditions in the immense region of Northern and Central Eurasia (former Soviet Union). The course covers; 1) general environment and political situation; 2) environmental transformation under Soviet rule; 3) environmental and public health problems; 4) conclusions on current trends.
- CEUS-R 595 Politics of Identity in China and Inner Asia (3 cr.) This course challenges the assumption that terms like "Chinese," "Taiwanese," or "Kazakh" represent straightforward concepts. Via theories of identity, and careful attention to the history of China and Inner Asia, we will explore - and explode - the association of identity and descent, language and ethnicity, citizenship and nationality.
- CEUS-R 596 The Rus, Khazars, and Bulgars (3 cr.) Three kaganates—Rus' (the precursor of Russia), Khazar, and Bulgar—vied for power in the early medieval Eurasian steppe. These states, one Slavic and two Turkic-speaking, created the first cities in the region; Christian, Judaic, and Islamic conversions followed. Course examines all three kaganates equally in their aspects and interrelations.
- CEUS-R 597 Empires of the Silk Road: History of Central Eurasia (3 cr.) This course introduces the history of the Central Eurasian heartland of the Old World, which dominated Eurasia until modern times. It focuses on the unique socio-political-religious-economic structure of the major nations and their achievements in intellectual and artistic fields, from the Proto-Indo-Europeans to the present. CEUS-R 599 Topics in Central Eurasian Studies (3 cr.) Topics in Central Eurasian Studies is used for new classes in Central Eurasian studies, aimed at M.A.



and early Ph.D. students and/or upper division undergraduates. Such classes are typically taught by a mix of lecture and discussion.

- CEUS-R 690 Advanced Readings in Central Eurasian Studies (1-6 cr.) This course number is for tutorials in advanced topics in Central Eurasian studies that cover multiple CEUS areas or do not fit comfortably in any specific area. Readings may include work on demanding classical texts or a survey of the secondary literature on a topic or some combination thereof.
- CEUS-R 691 CEUS M.A. Thesis Research (3 cr.) This course is required for all CEUS graduate students seeking a master's degree who have not written a thesis for a previous M.A. degree. It is normally taken during the fourth or fifth semester of a student's enrollment concurrently with writing a thesis. It is not repeatable.
- CEUS-R 692 Language & Society in Central Eurasia (3 cr.) This seminar explores how language is used to accomplish economic, political, and sociocultural ends in Central Eurasia. Topics covered include multilingualism; regional ethnolinguistic categories; the relationship between language policy and nationalities policy; gendered language; code choice in interactions; the politics of translation; poetics; standardization; and language shift, endangerment, and revitalization.
- CEUS-R 693 Theorizing Central Eurasia: The Problem of Nationalism (3 cr.) This course introduces students to nationalism's key works and questions. How are nations and nationalism related? Are nations imagined and invented or ancient and enduring? Are nationalism, communism, and religiosity necessarily opposed? Are indigenous nationalisms more authentic than "official nationalisms"? Is Central Eurasian nationalism a "derivative discourse," imported from elsewhere?
- CEUS-R 696 Manchu Historical Sources (3 cr.) Reading and analyzing materials in Standard (Classical) and in Pre-Classical Manchu script. Overview of Manchu historiography. Documents, decrees, annals, chronicles (the Veritable Records), biographies or genealogies (the Clear Registers), itineraries (e.g., Tulishen's Travels), imperial inscriptions, inscriptions on cannons, narratives (e.g., Song Yun's talks about Russo-Manchu trade relations).
- CEUS-R 697 Soviet & Post-Soviet Nationality Policies & Problems (3 cr.) Course devoted to nationality problems in the USSR, focusing on the Gorbachev period. Reviews theories of nationalism, history of Soviet nationality policy, and specifics of individual republics. Concludes with consideration of issues during glasnost, and their significance in various republics across USSR: environmental, history/culture, language, economic development, and migration.
- CEUS-R 698 Empire & Ethnicity in Modern Russia (3 cr.) Comparative study of the concept of empire and the rise of national movements among the major

nationalities in tsarist Russia and the USSR from the mid-19th century to the post-Soviet era. Focuses on imperialism, nationality policy, and factors shaping the evolution of national identity.

- CEUS-R 699 Central Eurasian Languages (3 cr.) This course examines the Central Eurasian languages and recent linguistic work on them. The Sprachbund ('linguistic area') theory is examined, as are major relationship theories, both divergent ('genetic') and convergent. Families covered include Finno-Ugric, Indo-European, Mongolic, Puyo-Koguryoic, Tibeto-Burman, Tungusic, and Turkic. No prior knowledge of Central Eurasian languages assumed.
- CEUS-R 790 Seminar in Central Eurasian Studies (3 cr.) Seminar in Central Eurasian Studies introduces doctoral students to current areas of research in Central Eurasian studies, using primary sources, full review of secondary literature, sound philological methodology, and/or theoretically sophisticated research designs. Classes will address particular areas and issues of interest to faculty and advanced graduate students.
- CEUS-R 890 Ph.D. Thesis (1-6 cr.) This course serves two purposes: 1) it may be used for credit for advanced readings related to doctoral research; 2) it maintains one's student status as Ph.D. candidate ("ABD") while researching and writing the Ph.D. dissertation. In either function, this class is repeatable.

## Languages

### Azerbaijani

- CEUS-T 583 Introductory Azerbaijani I (3 cr.) Introductory Azerbaijani I stresses a communicative/interactive approach. We learn to handle basic everyday situations, such as greetings, asking information, buying things, travel, phone calls, writing letters and so on. Every day at least a portion of class time will be devoted to the cultural aspects of the Azerbaijani society.
- CEUS-T 584 Introductory Azerbaijani II (3 cr.) P: Grade of "B" or higher in CEUS-T583 or equivalent. Introductory Azerbaijani II continues Introductory Azerbaijani I.
- CEUS-T 683 Intermediate Azerbaijani I (3 cr.) P: Grade of "B" or higher in CEUS-T 584 or equivalent. Intermediate Azerbaijani (Azeri) will use free discourse, prompted discussions, interviews, team activities, oral presentations, written exercises, video-based discussions, and grammar drills to expand first-year skills. Classes will be in Azerbaijani, with only some grammatical explanations or spot translations in English. Authentic Azerbaijani language materials are used throughout the course.
- CEUS-T 684 Intermediate Azerbaijani II (3 cr.) P: Grade of B or higher in CEUS T683 or equivalent. Introductory Azerbaijani II continues Intermediate Azerbaijani I.

### Chaghatay

- CEUS-T 623 Chaghatay (3 cr.) P: Knowledge of one modern Turkic language or consent of instructor required; acquaintance with Persian is desirable. This course gives a basic knowledge of Chaghatay, the classical version of Uzbek and the common literary language of all Central Asian Turks from the 15th to the early 20th century. The course surveys Chaghatay literature, grammar, and the writing system together with the reading of Chaghatay texts, chiefly historical.

## Estonian

- CEUS-T 503 Introductory Estonian I (3 cr.) Assuming no previous knowledge of Estonian, Introductory Estonian I emphasizes oral communications, with attention to reading, writing, speaking and listening. With basic vocabulary and structures, students can talk about themselves and immediate surroundings, interact in service encounters, read short texts and write notes. Students also learn about Estonian culture.
- CEUS-T 504 Introductory Estonian II (3 cr.) P: Grade of B or higher in T503 or equivalent. Introductory Estonian II uses a communicative approach to introduce Estonian pronunciation and basic grammar (morphology and syntax), and teach vocabulary and structures for everyday conversation. Up-to-date textbooks, audio- and videotapes, and authentic materials (newspapers, schedules, advertisements, the Internet etc.) will be employed to enhance language learning and provide cultural information.
- CEUS-T 603 Intermediate Estonian I (3 cr.) P: Grade of B or higher in T504 or equivalent. This course builds on skills acquired during Introductory Estonian. First-year topics are reviewed in more detail and new topics, such as seasons, holidays, traditions and customs added. Longer reading texts are introduced. Video materials train listening comprehension. Conversation skills are developed beyond the structured exchanges learned at the Intro level.
- CEUS-T 604 Intermediate Estonian II (3 cr.) P: Grade of B or higher in T603 or equivalent. Intermediate Estonian II finishes covering Estonian grammatical structures (morphology and syntax) and develops skills by reading, conversation, discussion, oral presentations, a weekly journal, short essays, and listening. Materials introduce Estonian culture, including current press sources (print and Internet), short fiction, poetry, documentaries, feature films, and new news programs.
- CEUS-T 703 Advanced Estonian I (3 cr.) P: Grade of B or higher in T604 or equivalent. This course builds students' confidence as language users via class discussion of newspaper articles, fiction and poetry, class presentations, journal entries, summaries of articles, films and news clips, short essays, TV broadcasts, and audio tape recordings. We focus on structures of formal written Estonian and different registers of oral production.
- CEUS-T 704 Advanced Estonian II (3 cr.) P: Grade of B or higher in T703 or equivalent. Advanced Estonian II consolidates students' knowledge

of Estonian structure, and adds to vocabulary, especially in students' areas of interest. While speaking, reading, listening and writing are developed, this course has more emphasis on reading and writing. Independent work and student contribution a must; class is tailored to individual interests.

- CEUS-T 803 ADLS-Estonian (3 cr.) P: Grade of B or higher in T704 or equivalent. In this class, students who have finished Advanced Estonian II may continue language learning in topic areas of interest. Students submit to the IAUNRC a proposal specifying instructor, materials to be studied, and a methodology for improving language skills. Enrollment is contingent upon receiving an ADLS grant from the IAUNRC.

## Finnish

- CEUS-T 501 Introductory Finnish I (3 cr.) This course introduces Finnish to students with no previous knowledge. We emphasize skills for everyday situations in Finland. You will also understand simple spoken Finnish for familiar topics and grasp the main points of brief messages. You will also learn the basic facts of Finnish culture and history.
- CEUS-T 502 Introductory Finnish II (3 cr.) P: Grade of B or higher in T501 or equivalent. Introductory Finnish II continues Introductory Finnish I.
- CEUS-T 601 Intermediate Finnish I (3 cr.) P: Grade of B or higher in T502 or equivalent. Intermediate Finnish I helps students who know the basics of Finnish to communicate in situations related to study, work and leisure, while learning specific issues of Finnish culture and history. Methods are learner centered, communicative and often problem-based, involving both instructor and peer learners.
- CEUS-T 602 Intermediate Finnish II (3 cr.) P: Grade of B or higher in T601 or equivalent. Intermediate Finnish II continues Intermediate Finnish I.
- CEUS-T 701 Advanced Finnish I (3 cr.) P: Grade of B or higher in T602 or equivalent. This course teaches advanced skills desirable for academic life and work. The goal is to communicate effectively in demanding oral and written situations, and to handle both writing and speech on demanding topics. You will also widen your knowledge on Finnish culture and history.
- CEUS-T 702 Advanced Finnish II (3 cr.) P: Grade of B or higher in T701 or equivalent. This course teaches advanced skills desirable for academic life and work. The goal is to communicate effectively in demanding oral and written situations, and to understand both writing and speech on demanding topics. You will also widen your knowledge on Finnish culture and history.
- CEUS-T 801 ADLS-Finnish (3 cr.) P: Grade of B or higher in T702 or equivalent. In this class, students who have finished Advanced Finnish II may continue language learning in topic areas of interest. Students submit to the IAUNRC a proposal specifying instructor, materials to be studied,

and a methodology for improving language skills. Enrollment is contingent upon receiving an ADLS grant from the IAUNRC.

### Hungarian

- CEUS-T 541 Introductory Hungarian I (3 cr.)  
Introductory Hungarian enables students to converse about basic topics, meet basic communicative needs, and read and write short texts with simple sentence patterns and everyday topics. Students learn to use fundamental Hungarian structures with comfort and confidence. Students also learn about Hungarian lifestyle, society and culture.
- CEUS-T 542 Introductory Hungarian II (3 cr.)  
P: Grade of B or higher in T541 or equivalent.  
In Introductory Hungarian II, daily classes focus: listening to and conducting conversations, intonation exercises, grammar exercises and writing simple dialogues and essays. Topics include: traveling, work, housing, shopping, post office and bank, family. Important possessive structures and sentences as well as indefinite and definite verb conjugations are introduced.
- CEUS-T 641 Intermediate Hungarian I (3 cr.)  
P: Grade of B or higher in T542 or equivalent.  
Intermediate Hungarian helps students converse more fluently about personal and simple academic topics, articulate their feelings and opinions, read short literary and scholarly texts, and write for basic personal, business, and academic purposes. Authentic texts and video teach about the life-style and social-historical facts of Hungary.
- CEUS-T 642 Intermediate Hungarian II (3 cr.)  
P: Grade of B or higher in T641. Intermediate Hungarian helps students converse more fluently about personal and simple academic topics, articulate their feelings and opinions, read short literary and scholarly texts, and write for basic personal, business, and academic purposes. Authentic texts and video teach about Hungary. Moderately complex grammatical forms are introduced.
- CEUS-T 741 Advanced Hungarian I (3 cr.) P: Grade of B or higher in T642 or equivalent. Assuming four semesters of Hungarian and substantial knowledge of grammar, syntax, and vocabulary, this course will enable students to converse about moderately complex personal, social, and academic topics, to read and understand a full range of literary genres, and to write and translate to meet most personal and academic needs.
- CEUS-T 742 Advanced Hungarian II (3 cr.) P: Grade of B or higher in T741 or equivalent. In this course, students continue to learn how to converse about moderately complex personal, social, and academic topics, read and understand a range of genres, and write and translate for personal and academic needs. Based on readings, students extend vocabulary and develop a more academic style for conversation and writing.
- CEUS-T 841 ADLS-Hungarian (3 cr.) P: Grade of B or higher in T742 or equivalent. In this class,

students who have finished Advanced Hungarian II may continue language learning in topic areas of interest. Students submit to the IAUNRC a proposal specifying instructor, materials to be studied, and a methodology for improving language skill. Enrollment is contingent upon receiving an ADLS grant from the IAUNRC.

### Iranian

- CEUS-T 656 Middle Iranian Languages (3 cr.)  
This variable title course introduces one or more of the following Iranian languages dating from the first to twelfth centuries: Middle Persian (Pahlavi); Middle Parthian and Manichaean Middle Persian; Sogdian; Bactrian and Saka. Documents are drawn from manuscripts, manuscript fragments, and/or inscriptions. Repeatable up to four times with different topic.
- CEUS-T 658 Old Iranian Languages (3 cr.) Course covers alphabets, grammar, vocabulary, reading, translation, and analysis of texts in two Old Iranian languages: Avestan and Old Persian. Religious and sociopolitical documents will be examined from eighteenth to first centuries BCE through manuscripts and inscriptions. Can be taken twice with different topics.

### Kazakh

- CEUS-T 513 Introductory Kazakh I (3 cr.) This class introduces basic communication skills in Kazakh. Students learn the sounds, alphabet, and basic grammar. Upon finishing, students will be able to use Kazakh in basic communicative contexts. Readings, class discussions, listening activities adapted from Kazakh language media programs. Films and extra-curricular cultural activities develop awareness of Kazakh culture.
- CEUS-T 514 Introductory Kazakh II (3 cr.) P: Grade of B or higher in T513 or equivalent. This class offers basic communication skills and basic grammar of Kazakh. You will master simple to moderately complex sentences. Listening to Kazakh language media programs, film viewing, and cultural activities will also develop awareness of Kazakh culture. As textbooks are lacking, teaching materials are distributed via handouts and copies.
- CEUS-T 613 Intermediate Kazakh I (3 cr.) P: Grade of B or higher in T514 or equivalent. Intermediate Kazakh builds on and extends the foundations established in Introductory Kazakh to improve basic language skills: speaking, reading, writing, listening. Its primary goal is to improve communicative competence and to enable learners to handle a variety of immediate everyday situations related to academic life.
- CEUS-T 614 Intermediate Kazakh II (3 cr.) P: Grade of B or higher in T613 or equivalent. Intermediate Kazakh's primary goal is to teach students to use Kazakh for everyday situations and purposes related to work and social life. Lessons are in Kazakh only, except some grammar analogues. Components include grammar structures, small texts, vocabulary, listening activities, and writing exercises.

- CEUS-T 713 Advanced Kazakh I (3 cr.) P: Grade of B or higher in CEUS T 614 or equivalent. Advanced Kazakh I familiarizes students with key parts of life in contemporary Kazakhstan. While improving speaking, listening, reading and writing, students will also do occasional translations. Building on previous levels with stimulating and challenging activities, including listening to narratives, radio interviews, etc., students will forge accurate and fluent communication skills.
- CEUS-T 714 Advanced Kazakh II (3 cr.) P: Grade of B or higher in T713 or equivalent. In Advanced Kazakh II we will keep introducing contemporary Kazakhstan, so students will have vocabulary to communicate according properly in different situations, purposes, and roles. Listening materials include narratives, radio interviews, "Cenasiynet" language programs, Kazakh fiction, and newspapers. Teaching materials will be distributed in hand outs and copies.
- CEUS-T 813 ADLS-Kazakh (3 cr.) P: Grade of B or higher in T714 or equivalent. In this class, students who have finished Advanced Kazakh II may continue language learning in topic areas of interest. Students submit to the IAUNRC a proposal specifying instructor, materials to be studied, and a methodology for improving language skills. Enrollment is contingent upon receiving an ADLS grant from the IAUNRC.

### Mongolian

- CEUS-T 561 Introductory Mongolian I (3 cr.) Introductory Mongolian I introduces students to modern Mongolian in the Cyrillic script, introducing basic Mongolian pronunciation and grammar, along with knowledge of Mongolian culture and traditions. By the end of the semester, students can conduct everyday conversations and use Mongolian's main cases and verb tenses in conversation and writing.
- CEUS-T 562 Introductory Mongolian II (3 cr.) P: Grade of B or higher in T561 or equivalent. In this course, we expand the competencies already mastered in Introductory Mongolian I. By the end of the semester students can use the main cases and finite verb tenses, as well as some modals (converbs) and simple compound sentences. Students also learn about Mongolian culture by reading simple folk tales.
- CEUS-T 661 Intermediate Mongolian I (3 cr.) P: Grade of B or higher in T562 or equivalent. This course expands the basic Mongolian conversation, grammar, reading and writing skills mastered in first year. The most useful kinds of compound and complex sentences of Mongolian are introduced and skills developed to use them in conversation and writing. Students also learn more about Mongolian culture and traditions.
- CEUS-T 662 Intermediate Mongolian II (3 cr.) P: Grade of B or higher in T661. This course expands the basic Mongolian conversation, grammar, reading and writing skills introduced in the first semester. Students master the most useful kinds of compound and complex sentences of

Mongolian and voice infixes in conversation and writing. Students also learn more about Mongolian culture and traditions.

- CEUS-T 663 Classical Mongolian I (3 cr.) Introduction to Classical Mongolian and its relation to the living spoken languages and dialects. Topics include the Mongolian vertical script, its origin, graphemes and allographs, vowel and consonantal graphemes, orthography, punctuation, numbers, a skeletal grammar, word formation, syntax. Format is reading, analyzing, and translating texts in transcription and original script.
- CEUS-T 664 Classical Mongolian II (3 cr.) P: Classical Mongolian I. Reading and interpreting various old and new Classical Mongolian texts in Uyghur script, grammatical analysis and translation into Modern Mongolian and English.
- CEUS-T 761 Advanced Mongolian I (3 cr.) P: Grade of B or higher in T662 or equivalent. Students first review compound and complex sentences and then develop a sense of Mongolian literary style through the reading of diverse materials. In-class oral presentations, discussions, and role-plays help students to increase their fluency. Students are introduced to translation, and their knowledge of Mongolian culture and history is enhanced.
- CEUS-T 762 Advanced Mongolian II (3 cr.) P: Grade of B or higher in T761 or equivalent. Class objectives are: 1) develop a sense of Mongolian literary style through reading diverse materials; 2) improve fluency by oral presentations, class discussions, and role-playing; 3) Practice formal translation using internet and newspaper materials; 4) develop knowledge of Mongolian culture and literary history.
- CEUS-T 861 ADLS-Mongolian (3 cr.) P: Grade of B or higher in T762 or equivalent. In this class, students who have finished Advanced Mongolian II may continue language learning in topic areas of interest. Students submit to the IAUNRC a proposal specifying instructor, materials to be studied, and a methodology for improving language skills. Enrollment is contingent upon receiving an ADLS grant from the IAUNRC.

### Pashto

- CEUS-T 553 Introductory Pashto I (3 cr.) Introduces the Pashto language of Afghanistan. By practicing listening, speaking, reading, and writing, students are familiarized with the alphabet and sound system, basic structures and ordinary usage. By the end of the semester, the student will have mastered simple sentences and can ask and answer simple questions on familiar topics.
- CEUS-T 554 Introductory Pashto II (3 cr.) P: Grade of B or higher in T553 or equivalent. Strengthens and improves skills gained in the previous semester. Students move into new topics such as personal information, daily activities, and expanded grammar structures. By the end of the course, the student will read simple prose texts, deal with everyday situations, and respond to requests on familiar topics.



- CEUS-T 653 Intermediate Pashto I (3 cr.) P: Grade of B or higher in CEUS T554 or equivalent. Improves communicative skills to meet ordinary social situations and express interests and personal needs such as inquiring about one's surroundings, getting directions, buying food, going out to eat, etc. By the end, the student should be able to communicate and ask of questions about familiar topics using learned grammatical structures.
- CEUS-T 654 Intermediate Pashto II (3 cr.) P: Grade of B or higher in T653 or equivalent. This class extends Pashto language skills, introducing materials on social interactions, current daily life, and culture. We build grammatical and lexical knowledge of learners with stimulating and challenging activities. By the end of the semester, students will converse confidently in routine tasks and social situations.
- CEUS-T 753 Advanced Pashto I (3 cr.) P: Grade of B or higher in T654 or equivalent. Course materials relate to the Pashtunwali, customs, commerce, news channels in Afghanistan and more. Students will be able to participate in exchanges about work and home, converse on many familiar topics, narrate and describe in all time frames (present, future, and past), and read texts of medium complexity.
- CEUS-T 754 Advanced Pashto II (3 cr.) P: Grade of B or higher in T753 or equivalent. Advanced Pashto II continues Advanced Pashto I. Students participate in exchanges about work and home, converse on many familiar topics, narrate and describe in all tenses (past, present, future), and read texts of medium complexity. Course materials related to the Pashtunwali; customs, commerce, news channels in Afghanistan and more.

### Persian

- CEUS-T 551 Introductory Persian I (3 cr.) This class introduces basic communication skills in Modern Standard Persian and familiarizes students with Persian's sounds, alphabet, and basic grammar. Students will learn to read, write, speak, and comprehend simple to moderately complex sentences. Readings, class conversations, media programs, film viewing, and cultural activities will also introduce Persian culture.
  - CEUS-T 552 Introductory Persian II (3 cr.) P: Grade of B or higher in T551 or equivalent. This course continues Introductory Persian I. While working further on basic sentence structure, we will develop greater fluency in pronunciation, reading, and writing. Our aim is a working vocabulary of 700 words; we will also begin studying compound verbs and other idiomatic expressions. Internet resources will be used extensively.
  - CEUS-T 651 Intermediate Persian I (3 cr.) P: Grade of B or higher in CEUS T552 or equivalent. Welcome to Intermediate Persian! After starting with a grammar review, we will cover a wide range of topics, and intermediate to advanced grammar.
  - CEUS-T 652 Intermediate Persian II (3 cr.) P: Grade of B or higher in CEUS T651 or equivalent.
- This course continues Intermediate Persian I, concentrating on complex grammatical structures and vocabulary acquisition. Emphasizing reading and writing skills, we will also work on fluency in modern colloquial pronunciation (Tehran dialect). We will study texts drawn from textbooks, modern Iranian publications and authentic materials, and Internet resources.
- CEUS-T 659 Research in Classical Persian Texts (3 cr.) P: T652, its equivalent, or special permission of the instructor. The classical Persian tradition holds a distinguished place in human thought and culture. This course introduces aspects of that rich legacy. Students will learn what distinguishes classical Persian from modern, and master research tools and reference works. Readings taken from textbooks to reflect the range of classical Persian texts.
  - CEUS-T 751 Advanced Persian I (3 cr.) P: Grade of B or higher in T652 or equivalent. In this course, students will examine the classical Persian tradition's rich legacy of historical, literary, and religious writings. Students will learn the grammatical and lexical differences distinguishing classical from modern Persian, and will be introduced to basic research tools and reference works. Readings cover the range of classical Persian texts.
  - CEUS-T 752 Advanced Persian II (3 cr.) P: Grade of B or higher in T751 or equivalent. Advanced Persian II continues Advanced Persian I.
  - CEUS-T 851 ADLS-Persian (3 cr.) P: Grade of B or higher in T752 or equivalent. In this class, students who have finished Advanced Persian II may continue language learning in topic areas of interest. Students submit to the IAUNRC a proposal specifying instructor, materials to be studied, and a methodology for improving language skills. Enrollment is contingent upon receiving an ADLS grant from the IAUNRC.

### Tajik

- CEUS-T 515 Introductory Tajik I (3 cr.) This course introduces the language and culture of the Tajiks of Tajikistan and Uzbekistan. You will learn enough Tajik to greet people, maintain simple conversations, handle basic survival needs, read signs, and short narratives, and fill out a form or take a message. You will also learn about Tajikistan.
- CEUS-T 516 Introductory Tajik II (3 cr.) P: Grade of B or higher in T515 or equivalent. Introductory Tajik II continues and expands what is learned in Introductory Tajik I.
- CEUS-T 615 Intermediate Tajik I (3 cr.) P: Grade of B or higher in T516 or equivalent. Intermediate Tajik follows the communicative approach, enabling learners to interact successfully in everyday and workplace situations. Authentic Tajik language materials used include videos and audio-taped materials, and printed texts. Focused drills present grammatical structures; explanations and paradigms are minimized. Materials also familiarize students about life for Tajiks.

- CEUS-T 616 Intermediate Tajik II (3 cr.) P: Grade of B or higher in CEUS T615 or equivalent. Intermediate Tajik II continues and expands what is learned in Intermediate Tajik I.

## Tibetan

- CEUS-T 571 Introductory Tibetan I (3 cr.) Introductory Tibetan I introduces Tibetan language basics to students with no previous background. We will begin speaking, listening, reading and writing. We cover the basic grammar, build vocabulary, and develop idiomatic usage needed in everyday communication. The course will also introduce learners to Tibetan culture and daily life.
- CEUS-T 572 Introductory Tibetan II (3 cr.) P: Grade of B or higher in T571 or equivalent. Introductory Tibetan II is a further introduction to the basics of Tibetan language. While expanding the competencies developed in the previous semester, students receive daily written, reading and audio home assignments. Conversation preparation is also required. We also have coffee hours to enable students to talk to Tibetan native speakers.
- CEUS-T 573 Practical Tibetan (3 cr.) P: Grade of B or higher in T572 or equivalent. This course offers continuing study in Tibetan classical and modern languages. Materials include instructor's handouts, audio-visual materials, books and online materials such as from the Tibetan and Himalayan Digital Library ([www.thdl.org](http://www.thdl.org)) will be used for language teaching purposes. Open to students who have completed Introductory to Advanced Tibetan language.
- CEUS-T 671 Intermediate Tibetan I (3 cr.) P: Grade of B or higher in T572 or equivalent. Intermediate Tibetan further develops the students' ability to use Tibetan language for meaningful communication. Speaking, listening, reading and writing skills are developed throughout the course with due attention to grammar. Special attention is devoted to classical Tibetan readings.
- CEUS-T 672 Intermediate Tibetan II (3 cr.) P: Grade of B or higher in T671 or equivalent. Intermediate Tibetan II is mainly aimed at the further development of the students' abilities with basic features of Tibetan language. In addition to the textbook, other materials such as short stories, articles etc., will be used for students' daily writing and reading assignments.
- CEUS-T 673 Imperial Old Tibetan: Introduction to the Language of the Tibetan Empire (3 cr.) Introduction to the language, including its grammatical structure, phonology, and alphabetic writing system. Students learn to read authentic material from the Tibetan Empire (C. 600-842 AD), including portions of the Old Tibetan Annals and major inscriptions.
- CEUS-T 674 Amdo Dialect Tibetan (3 cr.) This course introduces basic communication skills in the Tibetan Amdo Dialect, spoken in Tibet's Amdo region and parts of Kham. Course materials include instructor's handouts, audio-visual materials, books and online materials such as those from the Tibetan and Himalayan Digital Library ([www.thdl.org](http://www.thdl.org)).
- CEUS-T 676 Readings in Modern Tibetan Texts (3 cr.) This course allows students interested in the modern Tibetan language to improve their skills in handling literary Tibetan materials and documents produced in Tibetan areas of the PRC and in exile.
- CEUS-T 771 Advanced Tibetan I (3 cr.) P: Grade of B or higher in T672 or equivalent. Advanced Tibetan I helps students acquire advanced skills in an academic and professional manner. Students expand their knowledge of grammar with reading and composition exercises, and translate general texts from Tibetan into English. The course will focus on reading in modern and classical Tibetan.
- CEUS-T 772 Advanced Tibetan II (3 cr.) P: Grade of B or higher in T771 or equivalent. This course will further develop advanced skills desirable for academic and professional work. The materials are selected from writings and translations of classical and modern Tibetan. Daily writing and translation assignments. Knowledge of Tibetan culture and history also taught.
- CEUS-T 871 ADLS-Tibetan (3 cr.) P: Grade of B or higher in T772 or equivalent. In this class, students who have finished Advanced Tibetan II may continue language learning in topic areas of interest. Students submit to the IAUNRC a proposal specifying instructor, materials to be studied, and a methodology for improving language skills. Enrollment is contingent upon receiving an ADLS grant from the IAUNRC.

## Turkish

- CEUS-T 581 Introductory Turkish I (3 cr.) Introductory Turkish I introduces English-speaking students to Turkish. Students build basic proficiency in modern Turkish and communicate at beginner's level in everyday situations. Listening, speaking, reading, and writing are covered in classroom activities and at-home practice and a sound linguistic and cultural foundation is laid for future studies of Turkish.
- CEUS-T 582 Introductory Turkish II (3 cr.) P: Grade of B or higher in T581 or equivalent. Introductory Turkish II continues Introductory Turkish I, expanding at a higher level basic competencies previously mastered. Students develop communicative skills as they assimilate the basics of Turkish grammar. In addition to the textbook, we use other media such as short video clips from Turkish television, songs, and newspaper articles.
- CEUS-T 681 Intermediate Turkish I (3 cr.) P: Grade of B or higher in T582 or equivalent. Intermediate Turkish I expands the communicative skills, grammar and vocabulary skills mastered in Introductory Turkish. Class activities and homework involve listening, speaking, reading and writing. Special attention paid to building richer vocabulary, developing competence in the vernacular, and

improving reading. Recordings, films, handicrafts, and cartoons used in context.

- CEUS-T 682 Intermediate Turkish II (3 cr.) P: Grade of B or higher in T681 or equivalent. Intermediate Turkish II continues Intermediate Turkish I.
- CEUS-T 685 Classical Turkish: Ottoman I (3 cr.) The first semester focuses on the Arabic script as used in Ottoman. Relevant Arabic and Persian grammar will be incorporated into the lectures and exercises. We will read and analyze (morphology and syntax) twentieth-century printed Ottoman texts. Course structure adjusted according to students' level.
- CEUS-T 686 Introductory Ottoman Turkish II (3 cr.) Introductory Ottoman Turkish II continues Introductory Ottoman Turkish I, and prepares students for a smooth transition toward reading authentic printed Ottoman materials. Semester concludes with an introduction to manuscripts. The course emphasizes reading, but writing not neglected. Relevant Arabic and Persian grammar incorporated into lectures and exercises.
- CEUS-T 687 Advanced Ottoman Turkish I (3 cr.) The course is designed to train students in deciphering and understanding advanced level Ottoman literary sources. These include poetry collections, biographies of poets, travel literature, and hagiographic manuscripts and other Ottoman sources of Islam. Students will also be introduced to major scholarly figures, theories, secondary, and especially primary sources.
- CEUS-T 688 Advanced Ottoman Turkish II (3 cr.) In addition to deciphering texts, the course will focus on genealogies of the historical Turkish lexicon. Instructor will guide the students throughout the semester in developing these skills by providing them with hundreds of examples, and the scholarly tools and methodologies that are fundamental in historicizing Turkish words and suffixes.
- CEUS-T 781 Advanced Turkish I (3 cr.) P: Grade of B or higher in T682 or equivalent. Advanced Turkish is based on authentic materials such as watching Turkish TV news via Oncourse, and writing a report on it. All language skills (listening, speaking, reading, and writing) are improved in class activities. At coffee hours students can interact with native speakers in a friendly environment.
- CEUS-T 782 Advanced Turkish II (3 cr.) P: Grade of B or higher in T781 or equivalent. Advanced Turkish II is a fun way to learn Turkish, with new and improved materials and an interactive method. Instruction is based on authentic materials, such as Turkish TV via Oncourse. At coffee hours students can interact with native speakers in a friendly environment.
- CEUS-T 785 Media Turkish I (3 cr.) P: Advanced Turkish or permission of instructor. It addresses the needs of students of Turkish in coping with the linguistic and cognitive difficulties associated with media language. It improves students' linguistic skills for better comprehension of the contemporary language as manifested in the Turkish media. Up-

to-date socio-political issues associated with these texts will also be discussed.

- CEUS-T 786 Media Turkish II (3 cr.) P: Grade of B or better in T785 or equivalent. As opposed to "Media Turkish I" whose focus was reading comprehension, "Media Turkish II" centers around oral comprehension. Authentic materials from the Turkish media are incorporated into the teaching schedule in an effort to help students develop their listening comprehension skills. The instructor provides the current TV recordings via satellite.
- CEUS-T 881 ADLS-Turkish (3 cr.) P: Grade of B or higher in T782 or equivalent. In this class, students who have finished Advanced Turkish II may continue language learning in topic areas of interest. Students submit to the IAUNRC a proposal specifying instructor, materials to be studied, and a methodology for improving language skills. Enrollment is contingent upon receiving an ADLS grant from the IAUNRC.

### Turkmen

- CEUS-T 517 Introductory Turkmen I (3 cr.) Introductory Turkmen enables learners to interact successfully in everyday and workplace situations in the target language and culture at a proficiency level of 1 (ILR guidelines). Authentic Turkmen language materials - video- and audio-taped materials, printed texts - are used throughout. Grammatical structures are presented within focused drills.
- CEUS-T 518 Introductory Turkmen II (3 cr.) P: Grade of B or higher in CEUS T517 or equivalent. Introductory Turkmen II continues Introductory Turkmen I.
- CEUS-T 617 Intermediate Turkmen I (3 cr.) P: Grade of B or higher in CEUS T518 or equivalent. Intermediate Turkmen follows the communicative approach, enabling learners to interact successfully in everyday and workplace situations. Authentic Turkmen language materials used include videos and audio-taped materials, and printed texts. Focused drills present grammatical structures; explanations and paradigms are minimized. Newspaper materials update project materials on Turkmenistan's changing life.
- CEUS-T 618 Intermediate Turkmen II (3 cr.) P: Grade of B or higher in CEUS T617 or equivalent. Intermediate Turkmen II continues Intermediate Turkmen I.

### Uyghur

- CEUS-T 531 Introductory Uyghur I (3 cr.) Introductory Uyghur I introduces basic Uyghur language: the Uyghur script, phonetic rules, and basic grammar of the literary Uyghur language. Students also learn about Uyghur lifestyle, society and culture. Daily class activities involve: conversations; pronunciation, vocabulary, and grammar exercises; simple dialogues and texts. Considerable independent preparation outside of class required.

- CEUS-T 532 Introductory Uyghur II (3 cr.) P: Grade of B or higher in T531 or equivalent. Introductory Uyghur II continues Introductory Uyghur I. Students will develop their skills in listening, reading, speaking and writing, to begin mastering literary Uyghur language. Uyghur audio and video cassettes and visuals illustrate contemporary Uyghur cultural life. Opportunity for personal expression comes in partner and group work.
- CEUS-T 631 Intermediate Uyghur I (3 cr.) P: Grade of B or higher in T532. Intermediate Uyghur will expand the learner's grammatical, lexical, and functional skills. Listening activities involve narratives, interviews from RFA (Uyghur Erkin Asiya Radiosi), Uyghur TV, etc. Partner work and discussions are also used. Contemporary Eastern Turkestan's society will be introduced, so students can communicate properly in different situations, purposes, and roles.
- CEUS-T 632 Intermediate Uyghur II (3 cr.) P: Grade of B or higher in T631 or equivalent. Intermediate Uyghur II is much like Intermediate Uyghur I. While developing skills, we will introduce contemporary Eastern Turkestan, its culture and mentality, so students may communicate effectively. Also included: translation skills, partner work and discussions, authentic listening and video material. Independent work out of class is an essential part.
- CEUS-T 731 Advanced Uyghur I (3 cr.) P: Grade of B or higher in CEUS T632. In Advanced Uyghur I students will give oral, reading, and writing presentations, participate in class discussions, and practice translation. Excerpts from novels, movies, newspapers, etc., will develop knowledge of Uyghur culture. Students will need a strong drive to contribute to the whole class as well as individual meetings.
- CEUS-T 732 Advanced Uyghur II (3 cr.) P: Grade of B or higher in CEUS T731. In Advanced Uyghur II students will give oral, reading, and writing presentations, participate in class discussions, and practice translation. Excerpts from novels, movies, newspapers, etc., will develop knowledge of Uyghur culture. Students will need a strong drive to contribute to the whole class as well as individual meetings.
- CEUS-T 831 ADLS-Uyghur (3 cr.) P: Grade of B or higher in T732 or equivalent. In this class, students who have finished Advanced Uyghur II may continue language learning in topic areas of interest. Students submit to the IAUNRC a proposal specifying instructor, materials to be studied, and a methodology for improving language skills. Enrollment is contingent upon receiving an ADLS grant from the IAUNRC.

## Uzbek

- CEUS-T 511 Introductory Uzbek I (3 cr.) Introductory Uzbek I introduces Uzbekistan's literary language, using Latin and Cyrillic alphabets. Conversation, reading practice, journal writing, newspapers illustrating modern Uzbekistan, Uzbek videos, TV programs, and audio tapes will be used. Students

will use Oncourse and email to print out teaching materials and to turn in their assignments.

- CEUS-T 512 Introductory Uzbek II (3 cr.) P: Grade of B or higher in T511 or equivalent. Introductory Uzbek II continues Introductory Uzbek I.
- CEUS-T 611 Intermediate Uzbek I (3 cr.) P: Grade of B or higher in T512 or equivalent. Intermediate Uzbek increases students' fluency in speaking and develops listening and reading skills. With extensive conversation and reading practice, students extend their vocabulary and grammar fundamentals in the literary language of Uzbekistan. Journals, newspapers and authentic materials supplied via Internet, e-mail and Oncourse illustrate modern life and language in Uzbekistan.
- CEUS-T 612 Intermediate Uzbek II (3 cr.) P: Grade of B or higher in T611 or equivalent. Intermediate Uzbek II continues Intermediate Uzbek I.
- CEUS-T 711 Advanced Uzbek I (3 cr.) P: Grade of B or higher in T612 or equivalent. Advanced Uzbek I increases oral fluency, and develops listening, reading and writing, based on literary Uzbek, to enable students to do research in history, culture, politics, etc. We do extensive conversation and reading practice, using journals and newspapers illustrating modern Uzbekistan, Internet websites, Oncourse, videos, TV programs and audio tapes.
- CEUS-T 712 Advanced Uzbek II (3 cr.) P: Grade of B or higher in T711 or equivalent. Advanced Uzbek II increases oral fluency, and develops listening, reading and writing, to enable students to do research in history, literature, and culture. We do extensive conversation and reading practice, using newspapers and journals illustrating Uzbek history, literature, and modern life, plus Uzbek videos, TV programs, and audio tapes.
- CEUS-T 811 Advanced Directed Language Study-Uzbek (3 cr.) P: Grade of B or higher in T712 or equivalent. In this class, students who have finished Advanced Uzbek II may continue language learning in topic areas of interest. Students submit to the IAUNRC a proposal specifying instructor, materials to be studied, and a methodology for improving language skills. Enrollment is contingent upon receiving an ADLS grant from the IAUNRC.

## General

- CEUS-C 596 Intro Central Eurasian Language (0 cr.) This is a variable topic course limited to enrollment by off-campus participants in the ANU/IU less commonly taught language course exchange using distance learning technology. Currently not offered.
- CEUS-T 591 Introduction to Tokharian (Tokharian Language) (3 cr.) This course introduces the grammar and alphabetic writing system of Tokharian, the easternmost known branch of Indo-European. Students acquire a solid practical reading knowledge of Tokharian A by reading authentic texts. The famous Tokharian B love poem is read near the end of the semester.
- CEUS-T 598 Introductory Central Eurasian Languages I (3 cr.) This variable titles class is



used for fall semester of introductory-level modern language classes which do not yet have their own number. Such languages will be Uralic; Altaic; Iranian; or Tibeto-Burman languages of the Tibetan Plateau-Himalaya region. Students may not use more than one such language for departmental degree requirements.

- CEUS-T 599 Introductory Central Eurasian Languages II (3 cr.) This variable titles class is used for spring semester of introductory-level modern language classes which do not yet have their own number. Such languages will be Uralic; Altaic; Iranian; or Tibeto-Burman language of the Tibetan Plateau-Himalayas region. Students may not use more than one such language for departmental degree requirements.
- CEUS-T 690 Introduction to Manchu (3 cr.) The aim of this course is to provide a comprehensive, basic knowledge necessary for the understanding of Manchu texts. The course will be divided into two main parts: (1) study of Manchu phonology, morphology, and syntax; (2) translation of selected Manchu readings.
- CEUS-T 691 Old Turkic (3 cr.) This introduces Old Turkic texts (8th to 14th century) in nine scripts: 1) runiform; 2) Sogdian; 3) Uyghur; 4) Brahmi; 5) Syriac; 6) Manichean; 7) Chinese characters; 8) Square ('Phags-pa) Script; and 9) Tibetan script. The course also covers the Turkic language of the Karakhanid Empire (also called Middle Turkic).
- CEUS-T 692 Introduction to Evenki (3 cr.) This course introduces Evenki, a historically important but now endangered language of the Tungusic family, spoken in Siberia and northeastern inner Mongolia. The linguistic position of Evenki, the history of its study, phonetics, grammar, and writing systems are all introduced and students will learn how to translate brief texts.
- CEUS-T 693 Introduction to Sakha (Yakut) (3 cr.) Sakha (formerly called Yakut) is a northern Turkic language, with many ancient Mongolian loan words. It is one of Siberia's most vigorous indigenous languages. This course provides a comprehensive, basic knowledge necessary for the understanding of Yakut texts in the modern Cyrillic script and in earlier transcriptions.
- CEUS-T 694 Uralic Linguistics (3 cr.) Covers linguistics of the Uralic language family (Hungarian, Finnish, Estonian, and other languages in Russia). We begin with the proto-Uralic and relationships among Uralic languages. The main focus is on topics such as agglutination, vowel harmony, complex locative case systems. The final topic: sociolinguistics of Uralic languages in Russia. Currently not being offered.
- CEUS-T 695 Introduction to Aramaic (3 cr.) This course introduces the Aramaic language (a close relative of Arabic and Hebrew), which is used in Persian imperial literature and the Bible. Students acquire a knowledge of Aramaic grammatical structure and learn to read authentic texts from the

Bible, imperial Persian and Indian inscriptions, and letters from ancient Bactria.

- CEUS-T 698 Intermediate Central Eurasian Languages I (3 cr.) P: Grade of B or above in two semesters of introductory-level of the same language or equivalent. This variable titles class is used for fall semester of intermediate-level modern language classes which do not yet have their own number. Such languages will be Uralic; Altaic; Iranian; or Tibeto-Burman languages of the Tibetan Plateau-Himalayas region. Students may not use more than one such language for departmental degree requirements.
- CEUS-T 699 Intermediate Central Eurasian Languages II (3 cr.) P: Grade of B or above in one semester of intermediate-level of the same language or equivalent. This variable titles class is used for spring semester of intermediate-level modern language classes which do not yet have their own number. Such languages will be Uralic; Altaic; Iranian; or Tibeto-Burman languages of the Tibetan Plateau-Himalaya region. Students may not use more than one such language for departmental degree requirements.
- CEUS-T 798 Advanced Central Eurasian Languages I (3 cr.) P: Grade of B or above in two semesters of intermediate-level of the same language or equivalent. This variable titles class is used for fall semester of advanced-level modern language classes which do not yet have their own number. Such languages will be Uralic; Altaic; Iranian; or Tibeto-Burman languages of the Tibetan Plateau-Himalayas region. Students may not use more than one such language for departmental degree requirements.
- CEUS-T 799 Advanced Central Eurasian Languages II (3 cr.) P: Grade of B or above in one semester of advanced-level of the same language or equivalent. This variable titles class is used for spring semester of advanced-level modern language classes which do not yet have their own number. Such languages will be Uralic; Altaic; Iranian; or Tibeto-Burman languages of the Tibetan Plateau-Himalayas region. Students may not use more than one such language for departmental degree requirements.
- CEUS-T 891 ADLS-Central Eurasian Languages (3 cr.) P: Grade of B or above in highest regularly offered level of language or equivalent. (Currently this course is not offered.) For students who have finished the highest regularly offered level in a CEUS language (except when an ADLS class already exists) may continue language learning in topic areas of interest. Students submit to the IAUNRC a proposal. Enrollment is contingent upon receiving an ADLS grant from the IAUNRC.

## Chemical Physics

College of Arts and Sciences

Departmental E-mail: [gradphys@indiana.edu](mailto:gradphys@indiana.edu)

Departmental URL: [www.chemphys.indiana.edu](http://www.chemphys.indiana.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The

University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

## Curriculum

### Degree Offered

Doctor of Philosophy. A student may also qualify for the Master of Science degree in chemistry or physics.

### Special Program Requirements

(See also general University Graduate School requirements.)

### Doctor of Philosophy Degree

#### Admission Requirements

Undergraduate degree in chemistry, physics, or mathematics. Students who have interests in the physical sciences with undergraduate degrees in other fields, such as engineering, are also encouraged to apply; they will be considered on an individual basis. Admission to the program requires that the student first be admitted to the graduate program in chemistry or physics.

#### Grades

B (3.0) average or higher must be maintained.

#### Course Requirements

These requirements are flexible, and are planned and approved by the Chemical Physics Committee and the individual student. The guidelines in planning the curriculum are that the student in the program should acquire knowledge of condensed-matter physics, electricity and magnetism, molecular structure, kinetics, atomic and molecular spectroscopy, quantum mechanics, and statistical mechanics. The formal requirements are either those of a major in physical chemistry with a minor in physics or of a major in physics with a minor in chemistry.

#### Minor

For a minor in physics, 9 credit hours in physics courses at the P501 level or higher are required. For a minor in chemistry, 6 credit hours are required, chosen from the following: C561-C562, C566, C567-C568, C668. Occasionally, courses other than those listed here may be accepted, but such substitutions require approval of the Chemical Physics Committee.

#### Major

See Ph.D. program descriptions listed under chemistry or physics.

#### Qualifying Examination

See requirements of the major department, found elsewhere in this bulletin.

#### Dissertation

Under the direction of a graduate faculty member of the Department of Chemistry or the Department of Physics.

#### Final Examination

Usually oral, covering dissertation, major, and minor(s).

## Faculty

## Co-Directors

Professors David Baxter\* (Physics), Romualdo de Souza\* (Chemistry)

## Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

## Chancellor's Professor

George Ewing\* (Emeritus, Chemistry)

## Distinguished Professors

Gary Hieftje\* (Chemistry), Peter Ortoleva\* (Chemistry), Charles Parmenter\* (Chemistry), Victor Viola\* (Emeritus, Chemistry)

## Robert and Marjorie Mann Chairs

David Clemmer\* (Chemistry), Gary Hieftje\* (Chemistry), Martin Jarrold\* (Chemistry)

## Professors

Adam Allerhand\* (Emeritus, Chemistry), David Baxter\* (Physics), Russell Bonham\* (Emeritus, Chemistry), Romualdo de Souza\* (Chemistry), Herb Fertig\* (Physics), Stanley Hagstrom\* (Emeritus, Chemistry, Computer Science), Larry Kesmodel\* (Physics), Lawrence Montgomery\* (Emeritus, Chemistry), Gerardo Ortiz\* (Physics), Roger Pynn\* (Physics), Krishnan Raghavachari\* (Chemistry), James Reilly\* (Chemistry), William Schaich\* (Emeritus, Physics), Paul Sokol\* (Physics), Philip Stevens\* (Public and Environmental Affairs), James Swihart\* (Emeritus, Physics)

## Associate Professors

Mu-Hyun Baik\* (Chemistry), John Carini\* (Physics), Bogdan Dragnea\* (Chemistry), Srinivasan Iyengar\* (Chemistry), Stephen Jacobson\* (Chemistry), C. Chick Jarrold\* (Chemistry), Dongwhan Lee\* (Chemistry), Daniel Mindiola\* (Chemistry)

## Assistant Professors

Lane Baker\* (Chemistry), Dobrin Bossev\* (Physics), Amar Flood\* (Chemistry), Liang-Shi Li\* (Chemistry), Sara Skrabalak\* (Chemistry), Steven Tait\* (Chemistry)

## Graduate Advisors

Professor David Baxter\*, Swain West 128, (812) 855-8337; Professor Romualdo de Souza\*, Chemistry C230A, (812) 855-3767

# Chemistry

## College of Arts and Sciences

Departmental E-mail: [chemgrad@indiana.edu](mailto:chemgrad@indiana.edu)

Departmental URL: [www.chem.indiana.edu](http://www.chem.indiana.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

## Curriculum

**Degrees Offered**

Master of Science, Master of Arts in Teaching, and Doctor of Philosophy. The department also participates in the biochemistry, chemical physics, information science, library science, SPEA, and molecular and cellular biology programs.

**Fields of Study**

Analytical, chemical biology, inorganic, materials, organic, and physical chemistry.

**Special Department Requirements**

(See also general University Graduate School requirements.)

**Admission Requirements**

Undergraduate degree in chemistry, physics, mathematics, or the biological sciences. Students with undergraduate degrees in other areas of the physical sciences or engineering are also encouraged to apply. Students are admitted to the program only with the approval of the Chemistry Graduate Admissions Committee.

**Grades**

At least a B (3.0) average in work for the advanced degree. Grades below C (2.0) are not counted toward the completion of degree requirements, but will be counted in determining a student's grade point average.

**Master of Science Degree - Chemistry**

This degree may be conferred upon the holder of a bachelor's degree or master's degree in another discipline.

**Course Requirements**

These requirements are flexible and are planned and approved by the graduate committee. A minimum of 30 credit hours in chemistry are required. At least 9 credit hours of course work in the major field offered in fulfillment of the M.S. degree must be in courses numbered 500 or above (excluding thesis work).

**Thesis**

Required.

**Master of Science in Chemistry/Master of Science in Environmental Science (SPEA)**

This dual degree may be conferred upon the holder of a bachelor's degree or master's degree in another discipline.

**Admission Requirements**

The Department of Chemistry and the School of Public and Environmental Affairs (SPEA) offer a two-year, 51 credit hour program that qualifies students for two master's degrees. A student must apply to and be accepted by both the Chemistry Department and by SPEA for study toward an M.S. degree in Chemistry and an M.S. in Environmental Science. The student will receive graduate advising in both the Chemistry Department and SPEA.

Both degrees can be conferred upon the holder of a bachelor's degree or master's degree in another discipline.

**Course Requirements**

A minimum of 51 total credit hours with a minimum of 21 credits required in both Chemistry and SPEA, to be

distributed among the following six areas of chemistry and environmental science: (1) chemistry core (9 cr.); (2) environmental science core (9 cr.); (3) economics, policy, and law competencies (6-9 cr.); (4) tool skills (3-5 cr.); (5) environmental chemistry concentration (15-18 cr.); and (6) an experiential requirement (3 cr.). One of the 3-credit hour courses must involve team participation in an integrative project that addresses a multidisciplinary problem. This course may be in either of the concentrations or in the tool skill courses.

**Experiential Requirement**

A minimum of three credits associated with an approved experiential assignment, such as an internship or prior employment, is required.

**Thesis**

The thesis requirement is waived for the dual M.S. Chemistry/M.S.E.S. degrees.

**Master of Arts for Teachers Degree**

The Master of Arts for Teachers (MAT) program is a two-year, non-thesis masters and certification program that prepares secondary education teachers. The program consists of graduate coursework in chemistry in combination with education coursework toward certification in the School of Education. Returning teachers with certification usually take only one year to complete graduate chemistry coursework. Students with B.A. or B.S. degrees in chemistry, but with no education background, may complete requirements for a secondary Indiana teaching certificate and strengthen their background in chemistry.

**Admission Requirements**

Eighteen (18) credit hours of chemistry, including one semester each of general, quantitative, and organic chemistry. Deficiencies must be removed without graduate credit. Continuance in the program will depend upon the performance in coursework taken during the first semester in the program, and continued good standing in the program; alternatively, a qualifying examination may be administered after either one semester or one summer in the program.

**General Requirements**

A total of 36 credit hours, of which a minimum of 20 credit hours must be in courses in chemistry that carry graduate credit. For students without prior education coursework, the remaining 16 credits are to be fulfilled through School of Education courses. Consult School of Education, Graduate Studies Office (Wright Education Building 4210, [812] 856-8504) for Education coursework requirements.

A maximum of 6 credit hours of undergraduate courses may be applied toward the M.A.T. degree. For a student having an unusually strong undergraduate background in chemistry or biochemistry (e.g., a B.S. degree), some of the required 20 credit hours in advanced chemistry courses may be in other areas of science and mathematics, if approved in advance by the graduate advisor.

**Lecture-Course Requirements**

Students are advised to select an area of specialization within chemistry, while developing a broad base of

knowledge in several areas. To that end, students will take twelve (12) credit hours in lecture courses, distributed as follows: 6 credit hours in one of the following six areas: analytical, chemical biology, inorganic, materials, organic, or physical chemistry; and 3 credit hours in each of two of the remaining six fields.

Lecture courses may be selected from those at the 500-level or above, or with departmental approval from any of the following undergraduate courses: analytical, A314, C317, C318; biological, C481, C483, C484, C485, B486; inorganic, C430; organic, C342, S342, C443; physical, C360, C361, C362, C460.

### Laboratory-Course Requirements

Students are required to have had experience in upper level laboratories in three of the six areas of chemistry. If this requirement was not fulfilled prior to admission into the MAT program, graduate level laboratory courses may be taken to augment students' laboratory experience. Additionally, the following, and comparable courses taken elsewhere, will qualify with departmental approval: A316, C315, C344, P364, C437, P464, C487.

### Electives

Additional courses in chemistry may count with departmental approval at the 400-level or above to give a total of at least 20 credit hours (including course work in the preceding two categories). Up to 16 credit hours in courses may count with departmental approval at the 300 level or above in mathematics, biological sciences, physical sciences, or education carrying graduate credit.

### Final Examination

Either oral or written, or both.

### Master of Library Science/Master of Information Science Degree Information Specialist (Chemistry)

Offered by the Department of Information and Library Science (ILS). Students in this joint program receive the Master of Library Science degree or the Master of Information Science degree, and a Chemical Information Specialization.

### Admission Requirements

Bachelor's degree in chemistry or the equivalent.

### Course Requirements: M.I.S.

Foundation course requirements (21 credit hours); and Specialization courses (9 credit hours: Z523, Z533, and INFO I571) and additional courses to be chosen in consultation with advisors in Information and Library Science and the Department of Chemistry to bring the total graduate credit hours to 42.

### Course Requirements: M.L.S.

Foundation courses (18 credit hours); and Specialization courses (9 credit hours: Z523, Z533, and INFO I571) and additional Information and Library Science courses to be chosen in consultation with advisors in Information and Library Science and the Department of Chemistry to bring the total graduate credit hours to 36.

### Doctor of Philosophy Degree

The program leading to the Ph.D. degree emphasizes the attainment of a high level of competency in a specialized

area of chemistry, but also requires the development of broad knowledge and experience. By the time the degree is earned, the student should show promise of becoming a capable and independent investigator in chemistry. The major emphasis for the Ph.D. is on research while in residence on the Bloomington campus. Research should be the student's greatest challenge and the focus of the major portion of his or her energy. The student's attitude toward and progress in research is a most important factor in graduate committee decisions.

### Course Requirements

A total of 90 credit hours, of which at least 24 credit hours must be in course work. Students may major in analytical, chemical biology, inorganic, materials, organic, or physical chemistry. Doctoral students majoring in a field of chemistry are required to complete a minimum of 12 credit hours of course work in that field, following a sequence of courses approved by their advisory committee.

A doctoral student in chemistry can choose to minor within the Chemistry Department or can elect to minor in some other department. In the latter case, the requirements are specified by the minor department. Students electing to minor within the department must complete a minimum of 6 credit hours in areas of chemistry other than the major area by following the subplans/tracks., otherwise you must create an Individualized Minor which provides additional breadth and depth to the individualized degree. The course work comprising an inside minor must be approved by the advisory committee.

All doctoral students in chemistry are required to enroll in 6 credits of C500 Introduction to Research during their first year of study.

### Foreign-Language/Tool-Skill Requirement

The department has no formal foreign language or tool-skill requirement, but Ph.D. advisory committees may consider such courses essential for individual students.

### Qualifying Examinations

To remain in good standing, each student must successfully complete the chemistry seminar course in the chosen major (A800, B800/C689\*, M800, N800, R800, or P800) during the third and fourth semester. \*Chemical biology majors will take one semester of B800 (third semester) and one semester of C689 (fourth semester) to fulfill their second year chemistry seminar course requirement.

In the fifth semester, students meet with their advisory committees to review past performance in both the major and minor areas and to evaluate plans for completing the Ph.D. This review includes a seminar, written document, and oral examination. Current information concerning probation, termination, and reinstatement policies may be obtained from the departmental graduate office.

### Final Examination

Usually oral, covering dissertation, major, and minors, and also a seminar describing the dissertation.

### Subplans/Tracks

**Analytical:** CHEM C501 Chemical Instrumentation; CHEM C611 Electroanalytical Chemistry; CHEM



C612 Spectrochemical Methods of Analysis; CHEM C613 Mass Spectrometry and Stable Isotopes; CHEM C614 Chromatography; CHEM C615 Bioanalytical Chemistry; CHEM C620 Measurement Science

**Chemical Biology:** CHEM C588 Fundamentals of Biochemical Catalysis; CHEM C589 Enzyme Mechanisms; CHEM C681 Introduction to Chemical Biology I; CHEM C682 Introduction to Chemical Biology II; plus an additional 6 hours to include CHEM C540 Advanced Organic Chemistry; CHEM C581 Macromolecular Structure and Function; CHEM C582 Biomolecular Analysis and Interaction; CHEM C585 Structure and Function of Biological Membranes; CHEM C680 Introduction to Quantitative Biology and Measurement; CHEM C687 Seminar Advanced Topics in Chemical Biology; or other courses approved by research advisor.

**Inorganic:** CHEM C502 Inorganic Spectroscopy; CHEM C630 Structure and Bonding; CHEM C631 Chemical Crystallography; CHEM C632 Structure, Function, and Spectroscopy of Metal Ions in Biological Systems; CHEM C633 Inorganic Chemistry of Main Group Elements; CHEM C634 Transition Metal Chemistry; CHEM C635 Mechanisms of Inorganic Chemistry; CHEM C636 Organometallic Chemistry and Catalysis; CHEM C637 Physical Methods in Structural Chemistry; CHEM C639 Characterization of Paramagnetic Molecules

**Materials:** CHEM M501 Fundamentals of Materials I: Making, Measuring, and Modeling; CHEM M502 Fundamentals of Materials II: Molecular and Nanoscale Materials; plus an additional 6 hours which can include CHEM M503 Supramolecular Chemistry; CHEM M608 Seminar Materials Chemistry, or 6 hours from other courses approved by research advisor.

**Organic:** CHEM C503 Spectrometric Methods of Structure; CHEM C540 Advanced Organic Chemistry; CHEM C543 Organic Reactions; CHEM C643 Organic Natural Products; CHEM C648 Seminar Organic Chemistry

**Physical:** CHEM C561 Atomic & Molecular Quantum Theory; CHEM C562 Computational Quantum Chemistry; CHEM C565 Nuclear Chemistry; CHEM C566 Molecular Optical Spectroscopy; CHEM C567 Chemical Statistical Mechanics; CHEM C616 Surface Analysis and Surface Chemistry; CHEM C668 Seminar Physical Chemistry

### Minors

A doctoral student in chemistry can choose to minor within the Chemistry department or can elect to minor in some other department. In the latter case, the requirements are specified by the minor department. Students electing to minor within the department must complete a minimum of 6 credit hours in areas of chemistry other than the major area. The course work comprising an inside minor must be approved by the advisory committee.

### Ph.D. Minor in Chemistry

Students from other departments who wish to minor in chemistry must complete at least 6 credit hours of graduate course work in one area of chemistry with an average of B (3.0) or above.

### Ph.D. Minor in Sustainable Energy Science

Students in Chemistry who wish to minor in Sustainable Energy Science must complete 12 credit hours of study, 9

of which are in coursework that includes (1) GEOG-G542, (2) a course on a specific energy type, and (3) one course on implications of energy use. Contact the departmental Graduate Office for appropriate courses.

### Ph.D. Minor in Chemical and Physical Biology (CPB)

Students choosing to minor in Chemical and Physical Biology (CPB), previously known as Quantitative Biology, are required to complete CHEM-C 680 and CHEM-C 681. An additional 3 credits from electives offered in Chemistry, Biology, Biochemistry, Physics and Medical Sciences, are also required, as appropriate to their major area. The Chemistry Graduate Office reviews and maintains a list of approved electives available in these areas for students to select from to complete the minor.

Electives should be approved by the minor advisor in advance.

### Faculty

#### Chairperson & Class of 1948 Herman B. Wells Endowed Professor

Professor Caroline Chick Jarrold\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Harry G. Day Chair & Distinguished Professor

Professor David R. Williams\*

#### James F. Jackson Professor of Chemistry

Professor Lane A. Baker\*

#### James F. Jackson Professor of Chemistry

Professor Amar H. Flood\*

#### Robert and Marjorie Mann Chair & Distinguished Professor

Professor David E. Clemmer\*

#### Robert and Marjorie Mann Chair & Distinguished Professor

Professor Martin F. Jarrold\*

#### Joan and Marvin Carmack Chair & Associate Dean of Natural and Mathematical Science

Professor Nicola L. Pohl\*

#### Earl Blough Professor of Chemistry

Professor Trevor Douglas\*

#### Dorothy & Edward Bair Chair

Professor Stephen C. Jacobson\*

#### Lilly Chemistry Alumni Chair & Distinguished Professor

Professor David P. Giedroc\*

#### Provost Professor

Professor Romualdo T. deSouza\*, Professor Bogdan Dragnea\*, Professor Jeff Zaleski\*

#### James H. Rudy Professor



Professor Sara E. Skrabalak\*

### Distinguished Professors

Professor Kenneth G. Caulton\*, Professor Ronald A. Hites\* (Public and Environmental Affairs), Professor Peter J. Ortoleva\*, Professor Krishnan Raghavachari\*

### Standiford H. Cox Professor

Professor Michael VanNieuwenhze\*

### Linda & Jack Gill Chair & Distinguished Professor

Professor Richard Di Marchi\*

### Professors

Professor Michael Kevin Brown\*, Professor Silas Cook\*, Professor Srinivasan S. Iyengar\*, Professor Liang-shi Li\*, Professor Martha Gray Oakley\*, Professor James P. Reilly\*, Professor Jeremy Smith\*, Professor Philip S. Stevens\* (Public and Environmental Affairs), Professor Steven L. Tait\*, Professor Theodore S. Widlanski\*

### Associate Professors

Professor Charles Dann III\*, Professor Jared Lewis\*, Professor Jonathan Raff\* (Public and Environmental Affairs), Professor Thomas Snaddon\*, Professor Megan Thielges\*, Professor Yan Yu \*

### Senior Scientists

Sylvie Hudan, John Huffman\* (Emeritus), Jonathan Karty, Maren Pink, Jonathan Trinidad

### Assistant Professors

Professor J.P. Gerdt\*, Professor Jonathan Schleich\*, Professor Xingchen Ye\*

### Director of Graduate Studies

Professor Sara E. Skrabalak, Chemistry Building C021, (812) 855-2069

### Courses

- **CHEM-C 500 Introduction to Research (required 2 credits in the fall semester and 4 credits in the spring semester)** Objectives and techniques of chemical research. Assignment to research problem to be completed during two semesters.
- **CHEM-C 501 Chemical Instrumentation (4 cr.)** Electronics as applied to chemical instrumentation; design and construction of instruments used in chemical research, analysis, recording, and control; maintenance and practice in modification to meet special needs.
- **CHEM-C 502 Spectroscopic Methods in Inorganic Chemistry (3 cr.)** P: C361. Chemical applications of group theory and the elucidation of structure and bonding in inorganic molecules and complexes by vibrational, nuclear magnetic resonance, Mossbauer and electronic absorption spectroscopy.
- **CHEM-C 503 Spectrometric Methods of Structure Determination (3 cr.)** P: Graduate standing. Elucidation of molecular structure utilizing IR, UV, and NMR spectroscopy, mass spectrometry, and other methods.
- **CHEM-C 505 Graduate Professional Development Seminar (1 cr.)** Incoming graduate students will

be exposed to three core areas: teaching skills, research skills and professional skills. Topics include classroom management for discussion/labs, grading, effective research habits and time management, CVs, ethics, library skills, grant writing, and making the most out of your PhD.

- **CHEM-C 506 Biogeochemistry (3 cr.)** The formation and processing of organic material in natural environments. Microbiology of sediments. The global biogeochemical cycles of carbon, nitrogen, and sulfur. Geochemistry of organic materials. Organic geochemical evidence of evolutionary events.
- **CHEM-C 509 Special Laboratory Problems (1-5 cr.)** P: 8 credit hours of chemistry toward graduate degree, consent of instructor. P or C: 500-level lecture course in research field. Non-majors only. Participation in scientific research to gain understanding of its philosophy and techniques.
- **CHEM-C 511 Advanced Analytical Methods I (4 cr.)** Theory and practice of analytical separation techniques and analytical spectroscopy; chromatographic methods of separation, fundamentals of gas and liquid chromatography, overview of spectroscopic instrumentation, atomic and molecular spectroscopy for analysis.
- **CHEM-C 512 Advanced Analytical Methods II (4 cr.)** Theory and practice of electrochemical (potentiometric and voltammetric) methods of analysis; introduction to analytical chemistry of the elements and statistics for analytical chemistry.
- **CHEM-C 540 Advanced Organic Chemistry (3 cr.)** P: C362 and C342. Valence and molecule structure, electronic interpretation of organic reactions, stereochemistry.
- **CHEM-C 543 Organic Reactions (3 cr.)** Synthesis of organic compounds, degradation reactions, selected topics in organic reactions.
- **CHEM-C 561 Atomic and Molecular Quantum Theory (3 cr.)** P: Graduate standing or consent of instructor. Elements of quantum theory, solution of elementary problems with chemical applications, approximate methods, atomic structure, molecular symmetry and normal vibrations, the molecular orbital description of molecules.
- **CHEM-C 562 Computational Quantum Chemistry (3 cr.)** P: C561 or consent of instructor. Electronic structure theory at the Hartree-Fock and semiempirical levels, computer calculations on elementary systems, elements of group theory and linear vector spaces, electron correlation, structure of potential surfaces.
- **CHEM-C 565 Nuclear Chemistry (3 cr.)** P: C360 or C361. Introduction to nuclear science covering the properties, structure, and reactions of nuclei. The energetics and kinetics of radioactivity are studied. Models presented include the liquid drop (macroscopic properties) and the shell (microscopic properties) models. Topics covered include: origin of the elements, nuclear power, biological effects of radiation, and radiocarbon dating.
- **CHEM-C 566 Molecular Optical Spectroscopy (3 cr.)** P: C561 or consent of instructor. Interaction of radiation with matter. Spectroscopic probes of

the rotational, vibrational, and electronic structure of molecules. Advanced laser methods.

- **CHEM-C 567 Chemical Statistical Mechanics (3 cr.)** P: Graduate standing or consent of instructor. Introduction to equilibrium and nonequilibrium many-body systems using ensemble techniques. Emphasis on molecular systems and systems undergoing chemical transformation or transport. Both qualitative and rigorous approaches.
- **CHEM-C 568 Advanced Statistical Mechanics (3 cr.)** P: C567 or consent of instructor. Selected topics such as pair correlation functions in classical liquids, laser and reaction-transport, nonequilibrium phenomena, critical phenomena, reaction rates, condensed media, NMR, precipitation and polymer kinetics, Green's function methods, and computational methods.
- **CHEM-C 572 Computational Chemistry and Molecular Modeling (3 cr.)** P: C571 or consent of instructor. Molecular modeling: computer models of molecules and their behavior in gas and condensed phases; implicit and explicit solvation models; quantum and molecular mechanics; search strategies for conformational analysis, geometry optimization methods; information content from Monte Carlo and molecular dynamics simulations. Statistics and chemometrics: multivariate statistics and experimental design, numerical methods, calibration and chemical analysis, optimization methods, artificial intelligence. Molecular design: de novo design techniques; quantitative structure activity relationships (QSAR); comparative molecular field analysis (CoMFA); docking; molecular diversity and combinatorial libraries.
- **CHEM-C 581 Macromolecular Structure and Function (1.5 cr.)** P: BIOC-B501 or consent of instructor. Molecular Biology and Physical Chemistry Review; Recombinant DNA Techniques; Heterologous Protein Expression Systems; Description and Measurement of Stabilizing Forces in Macromolecular Structure; Protein Secondary, Tertiary and Quaternary Structures: Circular Dichroism and Analytical Ultracentrifugation; Nucleic Acid Structure and Probing; Protein Structure Determination by Nuclear Magnetic Resonance (NMR); Protein Structure Determination by X-ray Crystallography; building and refinement of a Protein Structure from Crystallographic Data. Credit given for only one of the following: C581, B530.
- **CHEM-C 582 Biomolecular Analysis and Interaction (1.5 cr.)** P: BIOC-B501 or consent of instructor. Ligand Binding Models; Single Site Binding and Multiple and Competitive Site Binding; and Determination and Measurement of Binding Interactions and Antibody-based Interaction Methods. Credit given for only one of the following: C582, B531.
- **CHEM-C 585 Structure and Function of Biological Membranes (3 cr.)** Biochemistry and biophysics of lipids, membranes, and membrane proteins; fundamentals of membrane transport; interfacial catalysis; transmembrane signal transduction. Credit given for only one of the following: C585, B605.
- **CHEM-C 588 Fundamentals of Biochemical Catalysis (1.5 cr.)** General properties of enzymes and basic principles of enzymatic reactions are discussed. Enzyme kinetics; inhibitor types, their importance and their effects on enzymatic reaction rates; and specificity of enzymes will be covered. Students will gain facility with thermodynamics, catalytic mechanisms, kinetics and binding equilibria as they apply to proteins. Credit given for only one of the following: C588, B540.
- **CHEM-C 589 Enzyme Mechanisms (1.5 cr.)** P: CHEM-C588 Enzyme mechanisms demonstrate how chemical principles are employed by living organisms. The course will cover several classes of enzymes, for example, hydrolases, phosphorylases, kinases, carboxylases, and transferases. Focus will also be placed on the roles of cofactors in catalysis. Credit given for only one of the following: C589, B541.
- **CHEM-C 611 Electroanalytical Chemistry (1.5-3 cr.)** Theory and practice of electrochemical techniques (such as cyclic voltammetry, chronocoulometry, stripping analysis, thin-layer electrochemistry, and spectroelectrochemistry) used for analysis and for the characterization of inorganic and organic systems. (May be offered in alternate years.)
- **CHEM-C 612 Spectrochemical Methods of Analysis (1.5-3 cr.)** New instrumentation and techniques employed in spectrochemistry; in-depth treatment of commonly used spectrochemical methods. (May be offered in alternate years.)
- **CHEM-C 613 Mass Spectrometry and Stable Isotopes (1.5-3 cr.)** Topics in mass spectroscopic instrumentation and applications and in the natural chemistry of the stable isotopes of C, H, N, O, S, and rare gases. (May be offered in alternate years.)
- **CHEM-C 614 Chromatography (1.5-3 cr.)** Theoretical and practical aspects of chromatographic methods of separation; fundamentals of gas and liquid chromatography, related instrumentation, and selected applications. (May be offered in alternate years.)
- **CHEM-C 615 Bioanalytical Chemistry (1.5-3 cr.)** Survey of modern analytical techniques, including spectrochemical, electrochemical, and separation methods used in biochemical analysis and their applications. (May be offered in alternate years.)
- **CHEM-C 616 Surface Analysis and Surface Chemistry (1.5 cr.)** An overview of the modern instrumental techniques of surface analysis will be presented, together with a survey of their applications to solve surface chemical problems. Topics include electron and ion spectroscopies, SIMS, LEED, thermal desorption spectroscopy, surface electron and ion microscopies, catalysis, microelectronics fabrication, and corrosion.
- **CHEM-C 619 Seminar: Analytical Chemistry (1 cr.)** P: Consent of instructor. Individual student seminars covering new methods or applications of chemical analysis or characterization. Required of all analytical chemistry majors.
- **CHEM-C 620 Measurement Science (1-3 cr.)** Topics related to measurement in the chemical

sciences and interdisciplinary fields of science and engineering. Special attention to perspectives on advanced instrumentation and application of new hybrid techniques to areas such as biomedical, environmental, energy, or other areas of interest.

- **CHEM-C 630 Structure and Bonding (3 cr.)** P: C502 and C561. Applications of quantum mechanics to the electronic and geometric structure of inorganic molecules. Advanced ligand field and molecular orbital theories. The Jahn-Teller effects and orbital symmetry studies of stereochemistry. Inorganic photochemistry. (May be offered in alternate years.)
  - **CHEM-C 631 Chemical Crystallography (3 cr.)** General understanding and hands-on laboratory experience in crystallography as analytical method. Topics include the physical and mathematical concepts applied in crystallography, the relation of physical and chemical properties to structural data, common crystallographic databases, refinement and visualization software, and publication-ready data reporting. Special topics include absolute structure determination, disordered structures, twinned structures, and powder diffraction.
  - **CHEM-C 632 Structure, Function, and Spectroscopy of Metal Ions in Biological Systems (3 cr.)** Introduction to the field of bio-inorganic chemistry and spectroscopic methods for determining structure/function relationship of metal ions in biology. Emphasis on oxygen carriers, metal ion transport and storage, as well as oxidoreductases involved in oxygen, hydrogen, and nitrogen metabolism. A discussion of electron transfer proteins, photosystems, and the role of metals in medicine will also be included.
  - **CHEM-C 633 Inorganic Chemistry of Main Group Elements (3 cr.)** The syntheses, structure, and industrial application of compounds and materials in which main group elements play a major role. All elements except the d-block transition metals are included as main group elements. This includes the f-block lanthanides and actinides as well.
  - **CHEM-C 634 Transition Metal Chemistry (3 cr.)** Survey of the properties of the transition metals with emphasis on common oxidation levels, coordination geometries, and compounds with "classical" ligands; "hard" and "soft" acids and bases; d-orbitals and their energies in different geometries; formation constants and the Chelate Effect; the Jahn-Teller theorem; low-, intermediate-, and high-spin systems; mixed valency; metal-ligand multiple bonding, metal-metal bonds; coordination clusters and their biological relevance.
  - **CHEM-C 635 Mechanisms of Inorganic Reactions (3 cr.)** Analysis of the experimental and theoretical basis for our understanding of the reactions associated with main group and transition metal ions and inorganic reagents in solution. Classes of reactions include ligand substitutions, redox reactions, electron transfer reactions, reactions within the coordination sphere of metal ions including catalysis by photochemical and electrochemical activation.
  - **CHEM-C 636 Organometallic Chemistry and Catalysis (3 cr.)** Synthesis and reactivity of organo-
- main group and transition metal compounds, including application to organic synthesis. Predictive principles and generic C-C and C-H bond-forming reactions, including hydrogenation, coupling, addition to olefins or alkynes, and metatheses. These reactions are also extended to reactions on surfaces and solid-state processes.
- **CHEM-C 637 Physical Methods in Structural Chemistry (3 cr.)** Application of X-ray diffraction, dynamic NMR, and mass spectroscopy to structural and mechanistic problems throughout the periodic table, with emphasis on which techniques are optimal for particular questions, as well as the potential weaknesses of each.
  - **CHEM-C 638 Seminar: Inorganic Chemistry (1-3 cr.)** P: Consent of instructor. Topics not ordinarily covered by regularly scheduled courses, such as boron hydrides, X-ray diffraction, metal-metal bonds, bioinorganic chemistry, platinum metals chemistry, inorganic photochemistry, etc. (May be offered in alternate years.)
  - **CHEM-C 639 Characterization of Paramagnetic Molecules (3 cr.)** Definitions of diamagnetism, paramagnetism, magnetization and magnetic susceptibility; the Curie Law; orbital angular momentum; the Van Vleck equation; zero-field splitting; exchange interactions in dinuclear and polynuclear metal clusters. Basic concepts of paramagnetic NMR; spin delocalization mechanisms and isotropic shifts; contact and dipolar contributions. EPR of transition complexes; g-value anisotropy as a function of coordination geometry.
  - **CHEM-C 643 Organic Natural Products (3 cr.)** P: C540 and C543; or consent of instructor. Synthesis and chemical-physical analysis of the structure of alkaloids, antibiotics, bacterial metabolites, plant pigments, steroids, and terpenes. (May be offered in alternate years.)
  - **CHEM-C 644 Physical Organic Chemistry (1-3 cr.)** P: C342 and C362. Application of physical-chemical techniques to the study of structure and mechanism of reaction of organic compounds.
  - **CHEM-C 648 Seminar: Organic Chemistry (1-3 cr.)** P: Consent of instructor. Recent developments in such areas as sulfur compounds, heterocycles, stereochemistry, polymers, and synthesis. May be repeated.
  - **CHEM-C 668 Seminar: Physical Chemistry (1-3 cr.)** P: Consent of instructor. Topics such as chemical applications of matrix algebra and group theory, digital computing techniques, solid state chemistry, high temperature processes, electrochemistry, theory of solutions, spectroscopy, and surface chemistry. May be repeated with different topics.
  - **CHEM-C 680 Introduction to Quantitative Biology and Measurement (1.5 cr.)** Core topics in solution scattering methods, electron microscopy, light microscopy/ imaging, and biological mass spectrometry. Course focuses on the capabilities of each type of measurement: data analysis, sensitivity, resolution, quantitation, and limitations. Introduction to cutting-edge instrumentation available for use in thesis research, research findings or new approaches used in (C689).

- **CHEM-C 681 Introduction to Chemical Biology I (1.5 cr.)** Basic elements of chemical biology with a chemistry-centered focus. This course will cover peptide synthesis and ligation methods, oligonucleotide synthesis, diversity-oriented synthesis and combinatorial libraries, bio-orthogonal reactions, high-throughput screening methods and their use in drug discovery, and secondary metabolism. Credit given for only one of the following: C681, B680.
  - **CHEM-C 682 Introduction to Chemical Biology II (1.5 cr.)** Basic elements of chemical biology applications and uses of technology. This course will cover microarray technology, protein labeling, chemical genetics, small molecule interactions with proteins/DNA, modulation of protein-protein interactions, RNA aptamers and molecular evolution. Credit given for only one of the following: C682, B680.
  - **CHEM-C 683 Advanced Nucleic Acid Biochemistry (1.5 cr.)** Mechanistic analysis of nucleic acid metabolism; specificity and role of DNA polymerases and repair pathways; DNA replication and recombination mechanisms; RNA structural motifs and physical properties; RNA synthesis and processing in gene expression; catalytic RNA molecules; applications of RNA molecules. Credit given for only one of the following: C683, B601.
  - **CHEM-C 685 Advanced Macromolecular Structure and Interaction (1.5 cr.)** Supplements and extends B503; emphasis on stability and folding mechanisms of proteins and nucleic acids and detailed thermodynamic analysis of binding interactions. Credit given for only one of the following: C685, B603.
  - **CHEM-C 686 Structural Methods (3 cr.)** In biology, structure and function are intimately connected. The aim of this class is to demystify macromolecular structure determination. We will examine X-ray crystallography and EM image reconstruction in detail, solving structures and studying the theoretical underpinnings of each technique. Class will be computer and mathematics intensive. Credit given for only one of the following: C686, B604.
  - **CHEM-C 687 Seminar: Advanced Topics in Chemical Biology (1-3 cr.)** P: Consent of instructor. Topics vary yearly and include the following: medicinal chemistry and drug discovery, natural products and biosynthesis, bioanalytical chemistry, glycobiology/glycomics, proteomics, metabolomics. Credit given for only one of the following: C687, B680.
  - **CHEM-C 688 Seminar in Biochemistry (1.5-6 cr.)** P: Consent of instructor. Topic: Introduction to Quantitative Biology and Measurement. General properties of enzymes and basic principles of enzymatic reactions are discussed. Enzyme kinetics; inhibitor types, their importance and their effects on enzymatic reaction rates; and specificity of enzymes will be covered. Students will gain facility with thermodynamics, catalytic mechanisms, kinetics and binding equilibria as they apply to proteins.
  - **CHEM-C 689 Quantitative and Chemical Biology Journal Club (1 cr.)** P: Permission from Instructor.
- Current literature in chemical biology, biological imaging, mass spectrometry and structural biology of biomolecules and biomolecular assemblies will be discussed. May be repeated for a maximum of 10 credits.
- **CHEM-M 501 Fundamentals of Materials I: Making, Measuring, and Modeling (3 cr.)** P: Consent of instructor. The course will cover synthesis, crystal structure, energy band structure, electrical and optical properties of solid-state materials. Material systems to be covered include metals, semiconductors and insulators. The course will also introduce topics related to nanoscale materials chemistry, self-assembly, quantum confinement and plasmonics.
  - **CHEM-M 502 Fundamentals of Materials II: Nanoscale and Molecular Materials (3 cr.)** P: Consent of instructor. Introduces nanoscale and molecular materials with an emphasis on nanoscale interactions, and structure-property relationships. Topics include, but not limited to, colloids and their self-assembly, interfacial and surface interactions, synthetic and biological polymers, liquid crystals, biological membranes and self-assembly in biological systems.
  - **CHEM-M 503 Supramolecular Chemistry (3 cr.)** P: Consent of instructor. A one-semester overview of supramolecular chemistry and molecular self-assembly. Fundamentals of host-guest chemistry and intermolecular forces, molecular recognition, ion binding, switches and molecular machines, hierarchical self-assembly.
  - **CHEM-M 608 Seminar: Materials Chemistry (1-3 cr.)** P: Consent of instructor. Topics such as electrochemistry, biomaterials, polymers, solid state chemistry, computational chemistry, micro/nanofabrication, and environmental chemistry considered from the perspective of materials chemistry.
  - **CHEM-A 800 Seminar: Analytical Chemistry (1-2 cr.)** This course is eligible for a deferred grade.
  - **CHEM-B 800 Seminar: Chemical Biology (1-2 cr.)** This course is eligible for a deferred grade.
  - **CHEM-M 800 Seminar: Materials Chemistry (1-2 cr.)** This course is eligible for a deferred grade.
  - **CHEM-N 800 Seminar: Inorganic Chemistry (1-2 cr.)** This course is eligible for a deferred grade.
  - **CHEM-P 800 Seminar: Physical Chemistry (1-2 cr.)** This course is eligible for a deferred grade.
  - **CHEM-R 800 Seminar: Organic Chemistry (1-2 cr.)** This course is eligible for a deferred grade.
  - **CHEM-C 810 Research: Analytical Chemistry (arr. cr.)** This course is eligible for a deferred grade.
  - **CHEM-C 820 Research: Materials Chemistry (arr. cr.)** This course is eligible for a deferred grade.
  - **CHEM-C 830 Research: Inorganic Chemistry (arr. cr.)** This course is eligible for a deferred grade.
  - **CHEM-C 840 Research: Organic Chemistry (arr. cr.)** This course is eligible for a deferred grade.
  - **CHEM-C 860 Research: Physical Chemistry (arr. cr.)** This course is eligible for a deferred grade.
  - **CHEM-C 880 Research: Chemical Biology (arr. cr.)** This course is eligible for a deferred grade.

- **CHEM-G 901 Research (6 cr.)** This course is eligible for a deferred grade.

## Classical Studies

**College of Arts and Sciences**

**Departmental E-Mail:** [classics@indiana.edu](mailto:classics@indiana.edu)

**Departmental URL:** [www.indiana.edu/~classics](http://www.indiana.edu/~classics)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Arts in Classical Studies—Latin and Greek, Master of Arts for Teachers in Classical Studies—Latin, and Doctor of Philosophy in Classical Studies—Latin and Greek

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

#### Placement Examination

All newly admitted students will be required to take a translation examination in Latin and/or Greek for the purpose of placement. No student will be permitted to enroll for courses until the results of this placement examination are delivered to the Director of Graduate Studies.

#### Master of Arts in Classical Studies—Latin and Greek Admission Requirements

As prerequisites for admission, a student must (1) have an undergraduate major in Latin or Greek or the equivalent; (2) take the Graduate Record Examination General Test; (3) submit a Statement of Purpose; (4) submit 3 letters of recommendation from faculty; (5) submit a writing sample of approximately 20 pages of connected prose.

#### Course Requirements

A minimum of 30 credit hours of Latin, Greek, or Classics courses, of which at least 22 credit hours must be in Latin or Greek. One course involving the writing of a term paper.

#### Examinations

Written translation examination (three hours) in Greek or Latin. Written examination on the history of Greek or Latin literature in the Greek or Latin literature survey courses (G536 and G537 or L536 and L537) or by arrangement in exceptional circumstances.

#### Language Requirement

Reading proficiency in one language: French, German, or another approved modern language, or (for students majoring in Latin) Classical Greek. The requirement in Classical Greek may be satisfied by completing G500, G550, G600, and G650. A grade of B or better in G650 fulfills the reading-knowledge requirement in Classical Greek.

#### Master of Arts for Teachers in Classical Studies—Latin

##### Admission Requirements

As prerequisites for admission, a student must (1) have an undergraduate major in Latin or Greek or the equivalent; (2) take the Graduate Record Examination General Test; (3) submit a Statement of Purpose; (4) submit 3 letters of recommendation from faculty; (5) submit a writing sample of approximately 20 pages of connected prose.

##### Course Requirements

All M.A.T. students must complete a total of 26 credit hours in the Department of Classical Studies, of which 20 credit hours are in Greek and/or Latin language and literature (L and G courses), and 6 credit hours are in classical civilization and culture (C courses).

The School of Education requirements may be completed with one of two tracks, the Secondary Transition to Teaching program or the Community of Teachers program. The requirements for each program are to be determined by the School of Education.

##### Examinations

Written translation examination (three hours) in Latin. Written examination on the history of Greek or Latin literature in the Greek or Latin literature survey courses (G536 and G537 or L536 and L537) or by arrangement in exceptional circumstances.

#### Doctor of Philosophy in Classical Studies—Latin and Greek

##### Admission Requirements

As a prerequisite for admission, a student must (1) have completed at least 24 credit hours of graduate work in classical studies; (2) show proficiency in one modern foreign language; (3) show evidence of scholarly potential as indicated by the submission of a term paper or revised version of a term paper to the Ph.D. admission committee of the department; (4) supply 3 letters of reference; and (5) take the Graduate Record Examination General Test.

##### Course Requirements

A total of 90 credit hours, including dissertation (maximum of 28 credit hours). Fifty-three (53) credit hours must consist of the 20 credit hours of core requirements (C501, C502, G536, G537, L536, and L537) and 33 additional credit hours of Latin and Greek reading and seminar courses. The remaining credit hours are distributed among the courses in the minor program.

##### Minor

A total of 12 to 15 credit hours of coursework, to be planned in consultation with the Director of Graduate Studies. Minor programs aim to broaden the student's knowledge in some aspect of classical studies outside the core curriculum. A minor may be taken in a single department (e.g., Art History, Comparative Literature, History); in that case, the student should also consult with the Director of Graduate Studies in that department. One can also take an interdepartmental minor, such as that offered through the Program in Ancient Studies.

##### Language Requirements



Reading proficiency in French and German; substitution of one other modern language will be considered on petition in place of French.

### Qualifying Examinations

Translation examinations (three hours each) based on reading lists in Greek and in Latin. Qualifying examinations are also required on the history of Greek and Latin literature (three hours each) and on a major author (three hours) chosen by the student. An examination on the outside minor may be required by the department of the outside minor.

### Final Examination

Oral, primarily a defense of the dissertation.

### Ph.D. Minor in Greek or Latin

Students in related programs may elect a Ph.D. minor in Greek or Latin. Students with previous experience in the language(s) may be asked to take a diagnostic examination before entering into study for the minor. Each student should plan his or her program of study in advance with the Director of Graduate Studies. Minors in Greek must complete at least 15 credit hours in Greek (G courses). Minors in Latin must complete at least 15 credit hours in Latin (L courses).

### Faculty

#### Chairperson

Professor Matthew R. Christ\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Emeriti

James Lee Franklin\* (Emeritus), William F. Hansen\* (Emeritus), Timothy Long\* (Emeritus), Betty Rose Nagle\* (Emeritus), Carroll Nelson\* (Emeritus), Ian Thomson\* (Emeritus)

#### Professors

Cynthia Bannon\*, Matthew R. Christ\*

#### Associate Professors

Bridget Kennedy Balint\*

#### Assistant Professors

William Beck, Nicholas Blackwell, Kenneth Draper, Lindsey Mazurek, Julia Mebane

#### Director of Graduate Studies

Professor Cynthia Bannon, Ballantine Hall 654, (812) 855-6868

### Courses

#### Greek

- CLAS-G 302 Classical Greek: Accelerated Course II (3-3 cr.) Five (5) credits each semester for undergraduates.
- CLAS-G 305 Greek Tragedy (3 cr.)

- CLAS-G 306 Greek Oratory (3 cr.)
- CLAS-G 307 Selected Works of Plato (3 cr.)
- CLAS-G 308 Readings in Biblical Greek (3 cr.)
- CLAS-G 406 Homer (3 cr.)
- CLAS-G 407 Greek Historians (3 cr.)
- CLAS-G 410 Greek Prose Authors (3 cr.)
- CLAS-G 411 Greek Comedy (3 cr.)
- CLAS-G 500 Elementary Greek I (2 cr.)
- CLAS-G 501 Archaic Greek Poetry (4 cr.) Selections from archaic Greek poetry, such as the works of Sappho, Bacchylides, and Pindar. Attention will be given to dialect, style, and cultural context.
- CLAS-G 505 Grammar, Composition, and Rapid Reading (4 cr.)
- CLAS-G 510 Readings in Greek Historians (4 cr.) Extensive readings in Greek from the major historians—Herodotus, Thucydides, Xenophon, and Polybius—with special attention to the development of Greek historiography.
- CLAS-G 511 Readings in Greek Oratory and Rhetoric (4 cr.) Selections in Greek from the canon of the 10 Attic orators, within the rubrics of epideictic, forensic, and symbouleutic oratory. Special emphasis on situating these rhetorical works in their social milieu.
- CLAS-G 512 Readings in Greek Philosophers (4 cr.)
- CLAS-G 513 Readings in the Greek Novel (3 cr.) An introduction to the Greek novel based upon readings in Greek in romantic novels such as Longus' *Daphnis and Chloe*, comic novels such as Pseudo-Lucian's *The Ass*, and/or historical novels such as Pseudo-Kallisthenes' *Alexander Romance*. Some attention is also given to current research on the Greek novel.
- CLAS-G 516 Readings in Greek Comedy (4 cr.) Examines the genres of old and new comedy, as revealed in selected comedies of Aristophanes and Menander. Added to extensive reading in Greek, students will study the literary forms of the genres and how comedy acts as an expression of the poets' engagement with their contemporary social and intellectual climate.
- CLAS-G 517 Readings in Greek Tragedy (4 cr.) Careful reading of selected Greek tragedies of Aeschylus, Sophocles, and Euripides, with the goal of appreciating tragedy as a complex art form and as an important social phenomenon created in fifth-century Athens.
- CLAS-G 518 Readings in Greek Epic (4 cr.) Introduction to Greek epic poetry, including the epic dialect, epic prosody, and oral poetry as a traditional art form. Readings in Greek include at least three books of Homer's *Iliad* or *Odyssey*. Some attention is also given to current research on the early Greek epic.

- CLAS-G 536-537 Survey of Greek Literature I-II (4-4 cr.) A two-semester introduction to Greek literature from Homer (mid-eighth century B.C.) to Lucian (second century A.D.) through extensive readings in translation supplemented by select Greek passages and modern scholarship. Attention to the emergence and development of diverse genres within their cultural contexts.
- CLAS-G 540 Readings in Byzantine Greek (4 cr.)
- CLAS-G 550 Elementary Greek II (2 cr.)
- CLAS-G 600 Intermediate Greek (3 cr.) Continuation of G550. Advanced grammatical, morphological, and lexical components of Ancient Greek.
- CLAS-G 601 Seminar in Greek Poetry (4 cr.) Advanced study of selections from Greek poetry. The seminar will focus on issues relevant to the genre(s) to be studied.
- CLAS-G 603 Seminar on Greek Tragedy (4 cr.) A survey of modes of recent scholarship on Greek tragedy.
- CLAS-G 610 Seminar in the Greek Novel (4 cr.) Consideration in depth of select issues in the current scholarship on the Greek novel. Selected readings of texts in the original Greek are included. The seminar may focus upon problems of ancient Greek fiction more generally or upon study of a single novel.
- CLAS-G 611 Seminar in Greek Epigraphy, Papyrology, and Palaeography (4 cr.) Detailed study of the principles of practices of Greek epigraphy, papyrology, or palaeography, with examination of selected papyrus documents, inscriptions, or other Greek texts.
- CLAS-G 613 Seminar in Greek Tragedy (4 cr.)
- CLAS-G 620 Seminar in Historical Texts and Historiography (4 cr.) Close study of Greek historical writing as represented both by the surviving works of the major Greek historians and fragments of other writers. Modern scholarship on historiography will encourage discussion of the relationship between historical and other kinds of writing in a Greek setting.
- CLAS-G 622 Seminar on Topics in Greek Literature (4 cr.) Consideration in depth of select topics in ancient Greek literature. Readings are assigned both in original Greek texts and in the secondary literature.
- CLAS-G 650 Introduction to Attic Greek Prose and Poetry (3 cr.) P: G600 or permission of instructor. Readings in Plato, Lysias, and Euripides. Credit not given for both G650 and G302. II Sem.
- CLAS-G 803 Supervised Reading Program (1-4 cr.) May be repeated for credit.
- CLAS-L 407 Roman Lyric and Elegy (3 cr.)
- CLAS-L 410 Advanced Prose Composition (3 cr.)
- CLAS-L 423 Roman Satire (3 cr.)
- CLAS-L 426 Rhetoric and Oratory (3 cr.)
- CLAS-L 427 Virgil's Eclogues and Georgics (3 cr.)
- CLAS-L 428 Advanced Study of Virgil's Aeneid (3 cr.)
- CLAS-L 429 Roman Letters (3 cr.)
- CLAS-L 432 Livy (3 cr.)
- CLAS-L 505 Latin Grammar, Composition, and Reading (4 cr.) Exercises in Latin composition requiring control of principle features of Latin syntax and sight reading of previously unseen passages leading to rapid mastery of texts.
- CLAS-L 509 Cicero, His Life and Works (4 cr.) This rapid readings course will promote the development of reading and comprehension skills, which will be actively utilized as a basis for class discussions and papers. Selections will cluster around a particular moment in Cicero's career so that the interrelationship between correspondence, orations, and philosophical/oratorical writings can be discussed.
- CLAS-L 510 Readings in Latin Historians (4 cr.) Intensive reading of one of the major Roman historians (Caesar, Livy, Tacitus) or a survey of the same with consideration of their places, antecedents, and successors in Roman literature. Emphasis on reading and comprehension of the texts.
- CLAS-L 511 Readings in Latin Oratory and Rhetoric (4 cr.) Through intensive readings in Ciceronian speeches or a selection of readings drawn from Roman rhetorical writers (Cicero, Seneca, Tacitus), this course will examine the theory and practice of rhetoric at Rome in the context of philosophical, literary, and historical issues.
- CLAS-L 513 Readings in the Roman Novel (4 cr.) Through intensive readings in Roman prose fiction, including but not limited to the works of Petronius and Apuleius, this course will examine the genre of prose fiction in its literary and historical contexts.
- CLAS-L 515 Readings in Latin Elegy (4 cr.) Readings will highlight the development of elegiac verse as a genre with attention to issues of current interest: the politics of poetic language; the construction of gender roles; the first-person speaker as an extra-societal observer and commentator.
- CLAS-L516: Introduction to Ovid (3 cr.) Selections from the *Metamorphoses* and other writings; emphasis on Ovid's artistic and social importance.
- CLAS-L518: Introduction to Cicero (3 cr.) Selections from the orations, epistles, and philosophical writings; emphasis on Cicero's political importance and the influence of the man and his work
- CLAS-L519: Introduction to Catullus (3 cr.) Selections from the poetry of Catullus with discussion of its cultural and political contexts. Some

## Latin

- CLAS-L 300 Intensive Introduction to Classical and Medieval Latin (3 cr.)
- CLAS-L 400 Intensive Study of Literary Latin (3 cr.)

attention will be given to the origin and nature of Latin epigram and occasional verse.

- CLAS-L522: Introduction to Caesar (3 cr.) Readings from Caesar's *De Bello Gallico* and *De Bello Civili* with emphasis on syntax as well as a discussion of political background and Caesar as a cultural figure.
- CLAS-L523: Introduction to Vergil's *Aeneid* (3 cr.) Selections from *Aeneid* Books 7-12 with discussion of the cultural background of the epic. Some attention will be given to the origin and nature of Latin epic poetry.
- CLAS-L532: Introduction to Medieval Latin (3 cr.) Survey of the secular and religious literature of the Middle Ages; discussion of the later development of the Latin language; selections from such authors as Gregory of Tours, Isidore of Seville, Paul the Deacon, Matthew Paris, and Bernard of Cluny.
- CLAS-L 536-537 Survey of Latin Literature I-II (4-4 cr.) Readings in Latin and in translated texts will present Latin literature from Livius Andronicus through Juvenal. Traditional scholarly questions will be introduced, but discussion will emphasize the construction of continuities in Roman literature by considering literary history as an aspect of cultural history.
- CLAS-L 540 Medieval Latin (4 cr.) P: L409 or an equivalent course in medieval Latin. Students not offering one of these prerequisites will be required to pass an examination on medieval texts before consent to enroll will be granted.
- CLAS-L544: Roman Comedy (3 cr.) Introductory study of ancient Roman comedy, with selections from Plautus and Terence.
- CLAS-L 545 Rapid Reading and Principles of Grammar (4 cr.) Readings in the major authors of the Republic and Golden Age, and organized study of grammar to enable the student to read rapidly for comprehension, not translation.
- CLAS-L546: Imperial Roman Historians (3 cr.) Selections from Suetonius and Tacitus illustrating the characteristics of silver Latin prose and the authors' methods of depicting government and society in the early empire. Particular attention given to Tacitus's literary technique.
- CLAS-L547: Lucretius (3 cr.) This course will examine selections from Lucretius' *De Rerum Natura* that illustrate the characteristics, methods, and tenets of Epicurean philosophy. Particular attention will be given to Lucretius' literary technique.
- CLAS-L 600 Seminar in Latin Epic (4 cr.) Emphasis upon problems involving the interface of poetics and politics. Either a special topic (e.g., epic divinities) or an individual text may serve as the focus for study involving contemporary approaches to poetry and to culture. May be repeated for credit.
- CLAS-L 602 Seminar in Latin Comedy (4 cr.)
- CLAS-L 603 Seminar in Latin Tragedy (4 cr.) Study of the fragments of Republican tragedy and the evidence for lost plays will be followed by research

into historical, philosophical, and literary questions posed by Seneca's Tragedies.

- CLAS-L 610 Seminar in the Roman Novel (4 cr.) A study of Roman prose fiction through selected readings in the works of Petronius and Apuleius, and in the current scholarship on the Roman novel and modern theoretical approaches to fiction. The seminar may focus on problems in the study of Roman fiction or on a single novel.
- CLAS-L 611 Seminar in Latin Epigraphy or Palaeography (4 cr.) Advanced study of the methodologies and concentration on select Latin inscriptions or manuscripts.
- CLAS-L 620 Seminar in Latin Historical Texts and Historiography (4 cr.) A study of Roman historical writing from Republican, Imperial, or late Antique periods. The seminar may focus on literary, legal, documentary, or religious texts, or on problems in Roman history or historiography. Discussion will address the methodologies of current historical and historiographical scholarship. May be repeated for credit.
- CLAS-L 803 Supervised Reading Program (1-4 cr.) May be repeated for credit.

### Classics

- CLAS-C 405 Comparative Mythology (4 cr.) Three (3) credits for undergraduates.
- CLAS-C 411 The Art and Archaeology of Anatolia (4 cr.) Three (3) credits for undergraduates.
- CLAS-C 416 Ovidian Mythology and its Tradition (3 cr.)
- CLAS-C 419 The Art and Archaeology of Pompeii (4 cr.) P: For graduate students: reading knowledge of Italian. Three (3) credits for undergraduates.
- CLAS-C 501 Introduction to Graduate Study: Literary and Cultural Theory for Classicists (3 cr.) Provides familiarity with influential theories and methodologies of contemporary interpretive scholarship and evaluates their relevance to the interpretive practices of classical studies. A brief survey of formative developments in the history of classical scholarship will be followed by a chronologically ordered study of prominent twentieth-century writings.
- CLAS-C 502 Bibliography and Research Resources for Classical Studies (1 cr.) Provides practice in using some of the major electronic and printed sources of bibliography and historical information available for the study of Greek and Roman antiquity. An introduction to ancillary disciplines such as epigraphy and numismatics will be included.
- CLAS-C 503 The Ancient City (4 cr.) Survey of the topography and monuments of one of the major cities—Athens, Corinth, Rome, Ostia, for example—of the classical world. Introduces students to the individual city and its monuments. Provides through the monuments a better understanding of urbanism through the history of the specific city, its statesmen, and authors.

- CLAS-C 506 Teaching of Classics in College (1 cr.) Required of all graduate students teaching a departmental course for the first time. May be taken twice for credit.
- CLAS-C 507 Foreign Language Institute (1-6 cr.) Formal study of Latin and Roman culture for secondary teachers and those preparing for secondary teaching. Normally taught in two-week sessions in the summer. May be repeated for up to 6 hours of credit.
- CLAS-C512: Art and Archaeology of the Aegean (3 cr.) Introduction to the preclassical art and archaeology of the Aegean Basin: Greece, Crete, and the Aegean islands during the Stone and Bronze Ages (to about 1000 B.C.). Topics covered include Troy, Minoan Crete, and Mycenaean Greece.
- CLAS-C513: The Art and Archaeology of Greece (3 cr.) Art and archaeology of Greece from about 1000 B.C. through the Hellenistic period. Special attention given to the development of Greek architecture, sculpture, and vase painting.
- CLAS-C 514: The Art and Archaeology of Rome (3 cr.) Development of Roman architecture, sculpture, and painting from the beginning through the fourth century A.D. Consideration given to the major archaeological sites. Continuation of C513.
- CLAS-C 610 Seminar in the Greek and Roman Novels (4 cr.) Consideration in depth of select issues in the current scholarship on the ancient novels. The emphasis of the seminar is upon the secondary literature and upon the novels in English translation; a knowledge of Greek or Latin is not required.
- CLAS-C 623 Seminar in Classical Archaeology (4 cr.) P: C412 or A412 or consent of instructor. In-depth analysis and discussion of selected topics in Aegean, Greek, Etruscan, or Roman archaeology, including interconnections with other Mediterranean, Anatolian, or Near Eastern cultures.
- CLAS-C 875 Research in Greek or Latin (arr. cr.)
- CLAS-C 880 Ph.D. Thesis (arr. cr.)

## Cognitive Science

### College of Arts and Sciences

Departmental E-mail: [cogsci@indiana.edu](mailto:cogsci@indiana.edu)

Departmental URL: [www.cogs.indiana.edu](http://www.cogs.indiana.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Doctor of Philosophy and Joint Doctor of Philosophy in Cognitive Science and another Discipline

#### Program Information

The Cognitive Science Program comprises an interdisciplinary research program and a doctoral degree

program. Students carry out intensive research projects in state-of-the-art computer-based laboratories. There are two Ph.D. degree options: a Ph.D. in Cognitive Science and a joint Ph.D. in Cognitive Science and another originating degree-granting program, for example, Psychological and Brain Sciences, Informatics, Computer Science, Philosophy, Neuroscience, Linguistics, or Speech and Hearing sciences. A Ph.D. Minor in Cognitive Science is also offered. The program is designed to train students in theory development and model building (mathematical, formal, and computer simulation models), in empirical research, and in the development of the conceptual framework and technical skills needed for successful careers in research, teaching, business, and government.

### Doctor of Philosophy Degree Admission Requirements

Admission is by approval of the program's graduate admission committee. Applicants should have an undergraduate major in a field such as Cognitive Science, Psychology, Computer Science, Philosophy, Linguistics, Biology, or Anthropology; basic computer programming skills; and basic knowledge of mathematics for science, including calculus and statistics. In recognition of the interdisciplinary nature of the program, the programming or mathematics admission requirements may be waived and satisfied while pursuing graduate study.

### Course Requirements

A minimum of 90 credit hours, including the core courses COGS Q520 (3 cr.), COGS Q530 (3 cr.), COGS Q540 (3 cr.), COGS Q550 (3 cr.), COGS Q551 (3 cr.), and COGS Q560 (3 cr.) and selections totaling at least 16 credit hours from offerings listed in the Cognitive Science Program or cross-listed with other departments, divisions, or programs. A maximum of 6 of these 16 credit hours may come from pure research courses (COGS Q799, COGS Q899, or the equivalent in another department). Students must also take at least four semesters of the Colloquium Series course COGS Q733 before candidacy. On the basis of their undergraduate background or demonstrated competencies, students may be waived from one or more of the core courses other than COGS Q540, which all students must take. Waivers and substitutions, for any core courses require approval by the Director of Graduate Studies of the program and the University Graduate School (prior to candidacy).

### Research Project Requirement

Ph.D. degree students are required to complete a Research Project in their first two years. The project should constitute significant original research done while the student is enrolled in the Cognitive Science Program. The Program assigns a preliminary advisor (or advisory committee) to all students at the point of admission who acts as default supervisor for the Research Project, though students may instead opt to find a different supervisor for their Research Project. Students must decide on a supervisor and topic for their Research Project by the end of their second semester. At that point, they submit the Research Project Progress Report that outlines the project proposal to the Cognitive Science Program. The DGS in consultation with the supervisor of the Research Project (who does not have to be the

student's advisor) acts to approve the proposal. The project, including some form of write-up to be agreed upon by the supervisor of the Research Project, must be completed by the end of the second year (or earlier) along with submitting the Completion of Research Project Form, which is approved by the DGS in consultation with the supervisor of the Research Project.

### **Research Presentation Requirement**

Students must present a research talk to a Cognitive Science audience (including at least three faculty members who assess it), covering some aspect of the student's own research in Cognitive Science. The presentation should be advertised to the cognitive science community, and could be part of campus lecture series like Cognitive Lunch, Logic Seminar, Developmental Seminar, Linguistics Colloquia, Grey Matters, etc. The research covered may be from any stage of the student's career, including (but not restricted to) their research. The presentation must be made before advancement to candidacy.

### **Content Specialization**

Each student selects a Content Specialization, an area of study that can be approached from the perspectives of the different disciplines within Cognitive Science. With the approval of the student's advisory/research committee, any relevant area of cognitive science may fulfill the Content Specialization requirement. Some possibilities are Language and Speech, Dynamical Systems, Logic, Neuroscience, Evolution of Cognition, and Human-Computer Interaction. Students must complete at least five courses in their specialization, and these courses must be taken in at least two different departments. Courses from the student's minor or second major may count toward the Content Specialization, and Cognitive Science courses other than the core courses. The Content Specialization should be selected by the end of the student's second year in the program, and the courses selected must be approved by the student's advisory/research committee. The Content Specialization must be completed prior to Candidacy.

### **Minor Requirement**

Students must complete a minor in another department or program unless the student completes a joint degree with another department. The minor should be completed prior to candidacy.

### **Qualifying Examination**

Each student must pass a Qualifying Examination, typically before the beginning of their third year. If the student fails the exam, they will be placed on academic probation and may retake the exam once, and need to complete the exam by the end of May in the third year; failing the second time is grounds for dismissal from the program. . Prior to the qualifying examination, each student will turn in a Qualifying Examination Petition form with the signatures of the Director of Graduate Studies and the student's Advisory Committee. This form must be completed by the end of the student's second year.

Students pursuing joint degrees in Cognitive Science and another discipline may request to postpone the Qualifying

Examination by one year, by writing to the Director of Graduate Studies.

The Qualifying Examination is expected to have a written and an oral component and to demonstrate (1) in-depth knowledge of the student's Content Specialization, (2) knowledge of some other area of Cognitive Science, (3) academic writing competence, and (4) the ability to defend a position in an oral setting.

In consultation with his or her Advisory Committee, the student will agree on the format of the examination. Within these constraints, two broad categories of Qualifying Examinations are possible: (1) Papers or (2) Conventional Written Examination.

### **Papers**

In consultation with their Advisory Committee, the student selects topics and develops questions for three qualifying papers. Each paper should answer a question, such as: "How might simulation-based models help to clarify or dispel the view of communication as information transmission?" Two of the topics are expected to be within the student's Content Specialization, and these should address at least two of the different methodological approaches to that content area. The third paper can deal with a topic in any other area of cognitive science but must be outside the student's Content Specialization. The questions as approved by the Advisory Committee must be submitted to the Director of Graduate Studies via the Qualifying Examination Petition form before the writing period. With the approval of their advisory committees, students are encouraged to write papers that can contribute directly to their professional progress, for example as submitted publications or components of grant proposals (e.g., NIH National Research Service Awards). The papers are typically each about 25-30 pages long, double-spaced, plus references.

The student is typically given the period of three months during the summer following their second year in the program to write the papers. During this time, they may consult any works on the paper topics but may not discuss the topics with others. Questions to Advisory Committee should only concern procedural matters. After the papers are submitted to the committee, they are evaluated by the committee members, normally within a period of a week, and can be returned to the student with comments. Next, the student meets with the committee to defend their answers orally; the oral portion of the exam should take place within three weeks of the submission of the papers. Based on the written answers and the oral defense, the student may be passed immediately, failed outright, or required to rewrite one or more of the papers and possibly also to meet with the committee again for a second oral defense. If the student satisfies the committee with these additional assignments they have successfully passed the Qualifying Examination ; otherwise the exam is considered failed and must be completely retaken.

### **Conventional Written Examination**

The student and their Advisory Committee agree on a set of topic areas and readings. The topics must include at least one area outside of the student's Content Specialization and must be submitted to the Director of Graduate Studies via the Qualifying Examination Petition form before the exam date. The student then has three



months to prepare for the exam, normally during the summer following the second year in the program.

Students have to answer four questions. Each committee member writes one or two questions and the committee selects which questions will be offered to the student and whether the student will receive more than four questions to choose from for their answers. The student has two days, four hours per day, to answer the questions, using any resources they wish to bring to the examination room. Within a week, the committee evaluates the student's answers. The student does not normally receive feedback from the committee but may discuss the answers informally with members of the committee in preparation for the oral portion of the exam. The student meets with the committee within two weeks after submitting the answers to orally defend their answers and respond to follow-up questions. If the committee agrees that the student's written and oral answers are satisfactory, the student has successfully passed the qualification exam. Otherwise, the committee may fail the student outright or may require the student (1) to elaborate further in written answers to one or more questions or (2) to answer in writing one or more additional questions. If the student satisfies the committee with these additional assignments, they have successfully passed the qualification exam; otherwise, the exam is considered failed and must be completely retaken.

### **Joint Doctor of Philosophy Degree in Cognitive Science and another originating department Admission Requirements**

The Joint Ph.D. Degree in Cognitive Science and another department or program is both for new students and for students already in another Ph.D. program at IUB who want to add a graduate major in Cognitive Science, and for students who are already in the Cognitive Science Ph.D. program and want to add a second graduate major in another department or program. The Joint Cognitive Science Ph.D. has slightly different requirements from the single-major Cognitive Science Ph.D. described above. Students need to be accepted separately by both the Cognitive Science program and the second Ph.D. program (the dual major). Current IU graduate students must submit an electronic application for the joint Cognitive Science Ph.D. including: the single to double major application form, the Advisory Committee form for a dual major, and a goal statement addressing their goals in both majors (1-2 pages). Students who wish to pursue the joint degree must apply to do so prior to completing (and preferably before starting) their qualifying exams for either Cognitive Science or the other department.

### **Course Requirements**

A minimum of 90 credit hours, of which 32 credit hours must be in courses listed or cross-listed in Cognitive Science, including COGS Q520 (3 cr.), COGS Q540 (3 cr.), COGS Q550 (3 cr.), COGS Q551 (3 cr.), and at least 6 credit hours of breadth coursework not in the originating department and not among the **core Q-courses** or pure research courses such as Q799 and Q899. A non-core Q-course may be used to satisfy the breadth requirement with the approval of the student's advisory committee. Student must also take at least four semesters in the Colloquium Series course COGS Q733 before candidacy. The 32 credit hours may include a maximum of 6 credit hours

in pure research courses (COGS Q799, COGS Q899, or the equivalent in originating departments). Strong encouragement is given to interdisciplinary diversification. Note that courses may count toward the requirements of both Cognitive Science and the dual major department or program. On the basis of their undergraduate background or demonstrated competencies, students may be waived from one or more of the core courses other than COGS Q540, which all students must take. Waivers and substitutions for any core courses require approval by the Director of Graduate Studies of the program and the University Graduate School (prior to candidacy).

### **Research Presentation Requirement**

Students must present a research talk to a Cognitive Science audience (including at least three faculty members who assess it), covering some aspect of the student's own research in Cognitive Science. The presentation should be advertised to the local cognitive science community, and could be part of campus lecture series like Cognitive Lunch, Logic Seminar, Developmental Seminar, Linguistics Colloquia, Grey Matters, etc. The research covered may be from any stage of the student's career, including (but not restricted to) the thesis research. The presentation must be made before advancement to candidacy.

### **Tool-Skills Requirements**

**Statistics Tool Skills:** Complete a 3-credit hour course covering statistical analysis, e.g. PSY P553-P554 (advanced statistics in psychology) or the equivalent. COGS Q560 may also be used to fulfill this requirement.

**Computational Tool Skills:** Completing a 3-credit course, which mainly covers programming related to cognitive modeling, such as Q530. Students with extensive programming experience may fulfill this requirement by showing their prior work related to cognitive modeling.

### **Advisory Committee for Joint PhD Cognitive Science program**

The Appointment of Advisory Committee form is required by the Graduate School to establish your advisory committee that approves the student's program of study and counsels the student until the passing of the qualifying exams. This committee should be set up by the end of the second semester. The advisory committee should be set up by the end of the second semester. The advisory committee must be approved by both the Cognitive Science Program and the dual major department or program. The committee will need to have at least two members from each major. From the two members of the Cognitive Science Program, at least one member must be outside the originating department.

### **Qualifying Examination**

There are two options for the qualifying examination: (a) a Qualifying Examination in Cognitive Science and a separate examination in the dual major department or program (these may be taken at separate times); or (b) a joint examination covering relevant areas of both the Cognitive Science Program and the dual major department or program, as determined by the Advisory Committee and with permission of both the Cognitive Science Program and the dual major department or program. In the first option (a), the Qualifying Examination

in Cognitive Science is usually reduced, i.e. two rather than three papers, or three rather than four questions in the Conventional Written Exam. The Cognitive Science examination is normally taken after completion of all the Cognitive Science course requirements, which for Joint Degree students is typically by the end of their third year. (Joint Degree students may request to postpone their Qualifying Examination from their second year to their third year by writing to the Director of Graduate Studies and submitting the Qualifying Examination Petition form.) If the student fails the exam, they will be placed on academic probation and may be retake the exam once, to be completed by the end of May after their first attempt (and no later than during their fourth year); failure the second time is grounds for dismissal from the program. See further details under the Doctor of Philosophy Degree subsection on the Qualifying Examination above.

### **Dissertation and Final Examination**

A single dissertation will be written and submitted for both the Cognitive Science Program and the student's dual major department or program. The public and oral defense of the dissertation will be conducted jointly with both programs.

### **Ph.D. Minor in Cognitive Science**

Graduate students obtaining a Ph.D. in another discipline may have the option of taking a minor in Cognitive Science. To obtain this minor, students must satisfy the following requirements: (a) obtain approval from the Cognitive Science Program; and (b) complete COGS Q540; one of the following: COGS Q520, COGS Q530, COGS Q551, COGS Q560, or COGS Q550; two semesters of COGS Q733) and at least 6 other credit hours in Cognitive Science and/or cross-listed courses not in the originating department.

### **Master of Science Degree in Cognitive Science**

Course requirements: A total of 30 credit hours, including three of the core courses Q520, Q530, Q540, Q550, Q551, and Q560 (3 credits each) and two or more semesters of the Colloquium Series course COGS Q733 (1 credit per term). At least 20 of these 30 credit hours must be in Cognitive Science and cross-listed courses, excluding research credits (COGS Q799 and Q899). Additionally, a Research Project must be completed. Any course requirements discussed above can be substituted; such substitutions must be approved by the Program's Director of Graduate Studies and the University Graduate School.

Students can only get one Masters degree from either Psychological and Brain Sciences, the Program in Neuroscience (PNS), or Cognitive Science. Exceptions can be made if the Directors of Graduate Studies by both involved programs agree.

The M.S. track is only available to students who have been in the Ph.D. track. Students in the Ph.D. track who want to switch to the M.S. track must send an informal application request to the Director of Graduate Studies who decides about the application.

### **Research Project**

M.S. degree students are required to complete a Research Project. The project should constitute significant original research done while the student is enrolled in

the Cognitive Science Program. The Program assigns a preliminary advisor (or advisory committee) to all students at the point of admission who acts as default supervisor for the Research Project, though students may instead opt to find a different supervisor for their Research Project. Students must decide on a supervisor and topic for their Research Project by the end of their second semester or before. At that point, they submit the Research Project Progress Report that outlines the proposal to the Cognitive Science Program. The DGS in consultation with the supervisor of the Project acts to approve the proposal. The project, including some form of write-up, must be completed by the end of the second year (or earlier) along with submitting the Completion of Research Project Form, which is approved by the DGS in consultation with the supervisor of the Research Project.

### **Faculty Director**

Peter M. Todd\*, (Provost Professor, Cognitive Science, Psychological and Brain Sciences; and Informatics).

### **Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### **Chancellor's Professor and Distinguished Professor of Psychological and Brain Sciences**

Robert L. Goldstone\*, Robert Nosofsky\*, Eliot Smith\*, Linda Smith \*, David B. Pisoni\*

### **College of Arts and Sciences Distinguished Professor of Cognitive Science and Comparative Literature, Director, Center for Research on Concepts and Cognition**

Douglas R. Hofstadter\*

### **Distinguished Professor**

Ellen D. Ketterson, Biology and Gender Studies, Annie Lang\* Communication Science

### **Distinguished Professor and Luther Dana Waterman Professor of Psychological and Brain Sciences**

Richard M. Shiffrin\*

### **Distinguished Professor, Provost Professor, Psychological and Brain Sciences**

Jerome Busemeyer, Olaf Sporns

### **W.K. Estes Professor**

Michael N. Jones\* (Cognitive Science, Psychological and Brain Sciences)

### **Provost's Professor**

Randall Beer\* (Cognitive Science; School of Informatics and Computing), Fritz Breithaupt (Cognitive Science, Germanic Studies), Jonathan Crystal\* (Psychological and Brain Sciences), John Kruschke\* (Psychological and Brain Sciences)

### **Eleanor Cox Riggs Professor**

Aina Puce\* (Psychological and Brain Sciences)

### James H. Rudy Professor

Bennett Bertenthal\* (Psychological and Brain Sciences), Stanley Wasserman\* (Psychological and Brain Sciences, Sociology, Statistics)

### Victor H. Yngve Professor

Katy Borner\* (Distinguished Professor of Engineering & Information Sciences)

### Professors

John Beggs\* (Physics), Geoffrey Bingham\* (Psychological and Brain Sciences), Johan Bollen\* (School of Informatics and Computing), Joshua W. Brown\* (Psychological and Brain Sciences), Thomas A. Busey\* (Psychological and Brain Sciences), Rowan Candy\* (Optometry), Isabelle Darcy (Second Language Studies), Kenneth de Jong\* (Linguistics), Hamid Ekbia\* (School of Informatics and Computing, Information and Library Sciences), Santo Fortunato (School of Informatics, Computing and Engineering), Steven Franks\* (Linguistics, Slavic and East European Languages and Cultures), Judith Gierut\* (Speech and Hearing Sciences), Jason Gold\* (Psychological and Brain Sciences), Amit Hagar\* (History and Philosophy of Science Medicine), Thomas W. James\* (Psychological and Brain Sciences), Sandra Kuebler\* (Computational Linguistics), David Leake\* (Computer Science), Jennifer Lentz\* (Speech and Hearing Sciences), Lawrence Moss\* (Mathematics), Christena Nippert-Eng\* (Informatics), Timothy O'Connor\* (Philosophy), Robert Potter\* (The Media School), Luis Rocha\* (School of Informatics and Computing), Kathy Schick\* (Cognitive Science), Thomas Schoenemann\* (Anthropology), Erik Stolterman\* (School of Informatics and Computing), Nicholas Toth\* (Cognitive Science), Michael W. Trosset\* (Statistics), Chen Yu\* (Psychological and Brain Sciences)

### Associate Professors

Julie Anderson\* (Speech and Hearing Sciences), Shahzeen Z. Attari (School of Public and Environmental Affairs), Damir Cavar (Computational Linguistics), David Crandall\* (School of Informatics and Computing), Julia Fox\* (The Media School), Lisa Gershkoff-Stowe\* (Speech and Hearing Sciences), Laura Gurzynski-Weiss\* (Spanish and Portuguese), Eric Isaacson\* (Music Theory), Chien-Jer Charles Lin\* (East Asian Languages and Cultures), John Paolillo\* (Information and Library Science, School of Informatics and Computing), Franco Pestilli (Psychological and Brain Sciences), Nicholas Port\* (Optometry), Robert Rydell\* (Psychological & Brain Sciences), Selma Sabanovic\* (School of Informatics and Computing), Elizabeth Schechter (Philosophy), Maria Shardakova\* (Slavic and Eastern European Languages Cultures), Nozomi Tanaka, (East Asian Languages and Cultures), Justin Wood (School of Informatics)

### Assistant Professors

Ann-Sophie Barwich (History and Philosophy of Science and Medicine), Kelly Berkson\* (Linguistics), Richard Betzel (Psychological and Brain Sciences), Malgorzata Cavar, (Linguistics), Emily Fyfe\* (Psychological and Brain Sciences), Eduardo Izquierdo (Cognitive Science, School of Informatics and Computing), Erik Jacobson (Mathematics Education), Dan Kennedy\* (Psychological and Brain Sciences), Minje Kim\* (School of Informatics and Computing), Ehren Newman\* (Psychological and

Brain Sciences), Zoran Tiganj (Department of Computer Science), Francis Tyers (Linguistics)

### Associate Faculty

**Barbara B. Jacobs Chair of Education and Technology, School of Education and Professor of Learning Sciences**

Cindy Hmelo-Silver

### Chancellor's Professor

Jim Craig (Psychological and Brain Sciences)

### Distinguished Professors

Larry Humes\* (Speech and Hearing Sciences)

Elisabeth Lloyd\* (History and Philosophy of Science and Medicine)

Michael Wade\* (Biology)

### Provost Professor

Kathleen Bardovi-Harlig (Second Language Studies),

### Robert A. Lucas Chair of Law

Jeffrey Evans Stake\* (Maurer School of Law)

### Professors

Raquel Anderson\* (Speech and Hearing Sciences), Eli Blevis\* (School of Informatics and Computing), Curtis Bonk\* (School of Education), Arthur Bradley\* (Optometry), Edward Castronova\* (The Media School), Michel Chaouli\* (Germanic Studies), Phil Connell (Speech and Hearing Sciences), Stuart Davis\* (Linguistics), Laurent Dekydtspotter\* (Second Language Studies, French and Italian), Greg Demas\* (Biology), Manuel Diaz-Campos\* (Spanish and Portuguese), Amanda Diekman (Psychological and Brain Sciences), Ying Ding\* (Information and Library Science), Gary Ebbs\* (Philosophy), Cesar Felix-Brasdefer\* (Hispanic Linguistics and Pragmatics & Discourse), Constance Furey\* (Religious Studies), Brian Gill (Jacobs School of Music), Eleftherios Garyfalidis\* (Intelligent Systems Engineering), Kim Geeslin\* (Spanish and Portuguese), Brian Gill (Jacobs School of Music), Dennis Groth\* (School of Informatics, Computing & Engineering), Julia Heiman\* (Psychological and Brain Sciences), William Hetrick\* (Psychological and Brain Sciences), Daniel Hickey\* (School of Education), Ed Hirt\* (Psychological and Brain Sciences), Kurt Hugenberg (Psychological and Brain Sciences), Kevin Hunt\* (Anthropology), Laura Hurley\* (Biology), Mark Kaplan\* (Philosophy), Marianne Kielian-Gilbert (Music Theory), Yoshihisa Kitagawa\* (Linguistics), Shanker Krishnan\* (Marketing), Hui-Chen Lu\* (Psychological and Brain Sciences), Kirk Ludwig\* (Philosophy), Emilia Martins\* (Biology), Filippo Menczer\* (School of Informatics, Computing & Engineering), Armin P. Moczek\* (Biology), Mary Murphy\* (Psychological and Brain Sciences), Laura Murray\* (Language Sciences), Philip Podsakoff (Organizational Behavior & Human Resources), Christopher Raphael\* (School of Informatics, Computing & Engineering), Fred Schmitt\* (Philosophy), Robert Sherwood (Science Education), Bruce Solomon\* (Mathematics), Rex Sprouse\* (Second Language Studies), Cassidy Sugimoto\* (Informatics, Computing & Engineering), Natsuko Tsujimura\* (East Asian Languages and Cultures),



Frederick Unverzagt (Clinical Psychiatry), Dirk Van Gucht (School of Informatics ,Computing & Engineering), Steven Wagschal\* (Spanish and Portuguese), James Walker\* (Economics), Joan Weiner\* (Philosophy)

### Associate Professors

Yong-Yeol Ahn\* (School of Informatics ,Computing & Engineering), Patricia Amaral (Spanish and Portuguese), Tessa Bent\* (Speech and Hearing Sciences), Hannah Block (Kinesiology), Jordi Cat\* (History and Philosophy of Science), Joshua Danish\* (School of Education), Frank Diaz (Music Education), Margaret Dolinsky\* (Digital Art), Justin Garcia (Gender Studies and Kinsey Institute), Amy Hackenberg\* (School of Education ), Karin Harman James\* (Psychological & Brain Sciences), Anne Krendl\* (Psychological and Brain sciences), Adam Leite\* (Philosophy), Chien-Jer Charles Lin\* (East Asian Languages and Cultures, Linguistics, Cognitive Science), Adam Maltese\* (School of Education ), Peter Miksza\* (Jacobs School of Music), Rita Patel (Speech and Hearing Sciences), Gregory Rawlins\* (School of Informatics, Computing & Engineering), Chung-chieh Shan (School of Informatics, Computing & Engineering), David Stringer\* (Second Language Studies), Norman Su\* (School of Informatics, Andrew Weaver\* (The Media School), Yucel Yilmaz (Second Language Studies).

### Assistant Professors

Brandon Barker (Folklore and Ethnomusicology), Kalani Craig (History), , Jessica Gall Myrick (Media School), Nathan Geiger (Media School), Thomas Grano\* (Linguistics), Kyungbin Kwon (Education), Gregory Lewis, (Intelligent Systems Engineering), Steven Lulich (Speech and Hearing Sciences), Mandy Mejia (Statistics), Stasa Milojevic\* (School of Informatics and Computing), Asa Palley\* (Operations & Decision Technologies, Allen Riddell (School of Informatics and Computing), Eatai Roth (Intelligent Systems Engineering), Yi Shen (Speech and Hearing Sciences), Brielle Stark (Speech and Hearing Sciences), Kurt Waldman (Geography), Donald Williamson, (School of Informatics and Computing).

### Senior Lecturer

Leah Savion (Philosophy)

Rick Hullinger (Psychological and Brain Sciences)

### Lecturer

Ann Bunker (Linguistics)

### Senior Research Analyst/Programmer

Hui Zhang (Advanced Visualization Lab)

### Director of Cognitive Science Graduate Studies

Fritz Breithaupt (Germanic Studies)

### Courses

- COGS-G 901 Advanced Research (6 cr.)
- COGS-Q 510 Seminar on Professional Development for Cognitive Scientists (2 cr.) Covers the skills you need to thrive in grad school and research careers beyond, including working with mentors, coming up with ideas, reading, writing (including papers and grants--you'll write and submit an NSF Graduate

Research Fellowship grant or something similar), giving talks, outreach and publicity, ethical behavior, job search, and more. It's also a great opportunity to get to know your cohort of new grad students (and their research interests) in Psychology and Neuroscience (who also take the course in their first semester), and some of the faculty in all three programs who come in as guest speakers

- COGS-Q 511 Introduction to Embodied Cognitive Science (3 cr.) This course provides a broad introduction to the growing importance of the concepts of situatedness, embodiment and dynamics in cognitive science. It covers both the key conceptual content and the historical development of these ideas. In addition, it surveys classic work in this area. Examples will be drawn from philosophy, psychology, neuroscience, robotics, and the social sciences. Class meetings will consist of a combination of lectures by the instructor, guest lectures, and student presentation and discussion of readings.
- COGS-Q 520 (core course) Mathematics and Logic for Cognitive Science (3 cr.) Covers the mathematical backgrounds of contemporary work in cognitive science. Includes basic material on both the symbolic and connectionist approaches: machines, logics, networks, games, and probability.
- COGS-Q 530 (core course for PhD program) Programming Methods in Cognitive Science (3 cr.) P: Some programming experience. An introduction to computer programming methods for artificial intelligence and computer simulation of cognitive models. Emphasis on the necessary data structures and their applications to cognitive science. Programming projects may be related to state-space search for problem solving and game playing, production systems, and cognitive modeling tasks including memory models and neural simulations.
- COGS-Q 540 (core course) Philosophical Foundations of the Cognitive and Information Sciences (3 cr.) Causal issues: cognitive architecture, physical embodiment, neuroscience, networks, dynamic systems. Semantic issues: meaning, interpretation, representation, information flow. The role of both in language, logic, reasoning, action, perception, learning, categorization, and consciousness. Emphasis on writing, analysis, and exposition.
- COGS-Q 550 (core course) Models in Cognitive Science (3 cr.) P: Q530 and Q560. An introduction to modeling in various areas of cognitive science, including computer simulation models of complex cognition, models within artificial intelligence, models based on neural mechanisms and networks, and formal and mathematical models in areas such as psychology, linguistics, and philosophy.
- COGS-Q 551 (core course) The Brain and Cognition (3 cr.) An introduction to neural mechanisms underlying complex cognition, and a survey of topics in neuroscience related to cognition. It provides a solid background in human biopsychology.
- COGS-Q 560 (core course for PhD program) Experimental Methods in Cognitive Science (3 cr.) Specific goals of this course include: a) an understanding of experimental design and the

resources for future studies; b) an understanding of converging measures and programmatic research; c) discussion of current controversies in experimental design; and d) hands-on experience in designing, conducting, and analyzing experiments.

- **COGS-Q 570 Behavior-Based Robotics (3 cr.)**  
This course will present an overview of behavior-based robotics and its implications for embodied cognitive science, incorporating results from artificial intelligence, robotics, ethology, and psychology. It will give students an appreciation of the difficulties associated with implementing models on robots and allow them to tack research questions in groups.
- **COGS-Q 580 Introduction to Dynamic Systems in Cognitive Science (3 cr.)** Introduction to linear and nonlinear dynamic systems including catastrophe and chaos theory. Main aspects include: a) understanding the basic quantitative theory and techniques of dynamic systems, b) illustration of major concepts and systems behavior with the aid of computer graphics and numerical software, and c) examples from cognitive science.
- **COGS-Q 590 Topics in Cognitive and Info Sci**
- **COGS-Q 610 Networks of the Brain (3 cr.)** This course explores the complexity of the brain and its network architecture on several different levels, including neuroanatomy, spontaneous dynamics, neurocognitive networks, development and disease states, and embodiment. Building on a basic foundation of network theory, information theory, and nonlinear dynamics, the course covers both empirical and computational studies.
- **COGS-Q 700 Seminar in Cognitive Science (1-3 cr.)** Intensive study of specific topics in cognitive science. Topics and instructors will change regularly. May be repeated.
- **COGS-Q 733 (core course) Colloquium Series (1 cr.)** Students entering the program starting fall 2018 will need to sign up for Q733 for 1 credit for four semesters prior to candidacy. The class will meet every week. At some meetings, invited speakers will present colloquia; at others, students will present their own work.
- **COGS-Q 799 (core course) Readings and Research in Cognitive Science (1-6 cr.)** Tutorial research and study in specialized topics in Cognitive Science.
- **COGS-Q 899 (core course) Dissertation Research (1-12 cr.)** Dissertation research in specialized topics in cognitive science.

### CROSS-LISTED COURSES

Cross-listed courses that can count toward the breadth and 16 credit hours requirement:

#### ANIMAL BEHAVIOR

A 501 Seminar in the Integrative Study of Animal Behavior

#### ANTHROPOLOGY

B 600 Seminar in Bioanthropology (when appropriate)  
L 580 Semiotics and Human Ethnology  
L 840 Ethnolinguistic Seminars

#### BIOLOGY

L 567 Evolution  
Z 620 Special Topics in Zoology (when appropriate)

### KELLEY SCHOOL OF BUSINESS

S 600 Research Design and Methods in Management Information Systems  
S 601 Management Information Systems Research Topics in Application Systems Development  
S 602 Management Information Systems in Administration and Technology

### COMPUTER SCIENCE

A 590 Topics in Programming  
A 592 Introduction to Software Systems  
A 593 Computer Structures  
A594 Data Structures  
B 501 Theory of Computing  
B 502 Computational Complexity  
B 510 Introduction to Applied Logic  
B 521 Programming Language Principles  
B 522 Programming Language Foundations  
B 551 Elements of Artificial Intelligence  
B 552 Knowledge-Based Computation  
B 553 Biomorphic Computation  
B555 Machine Learning  
B 621 Advanced Concepts in Programming Languages  
B 622 Programming Language Type Systems  
B 651 Natural Language Processing  
B 652 Computer Models of Symbolic Learning  
B 657 Computer vision  
B 659 Topics in Artificial Intelligence  
B 656 Web data mining  
B 673 Advanced Scientific Computing  
P 515 Specification and Verification  
Y 890 Theses Readings and Research

### EAST ASIAN STUDIES CENTER

E 600 Seminar in East Asian Studies (when appropriate)  
C 600 Seminar in Chinese Studies (when appropriate)

### ECONOMICS

E 626 Game Theory

### SCHOOL OF EDUCATION

H 650 Theory of Knowledge and the Educational Process  
P 530 Instructional Psychology  
P 540 Learning and Cognition in Education  
P 544 Applied Cognition and Learning Strategies  
P 550 Cognition and Semiotics  
P 572 Theory and Method in Learning Science  
P 574 Topical Seminar in Learning Science (when appropriate)  
P 591 Cognitive Assessment and Intervention  
P 600 Topical Seminar in Learning, Cognition, and Instruction  
P 633 Capturing learning in context "Advanced Qualitative Methods!"  
P 640 Thinking and Learning in Social Contexts  
P 674 Advanced Topical Seminar in Learning Sciences (when appropriate)  
Q 610 Science Education Curriculum (when appropriate)  
R 542 Instructional Graphics Design  
R 561 Evaluation & Change in the Instructional Development Process  
R 586 Practicum in Instructional Systems Technology  
R 611 Instructional Technology Foundations  
R 622 Learning Environments Design



R 630 Learner Analysis in the Instructional Technology Process  
 R 695 Topical Inquiry Seminar in Instructional Systems Technology  
 Y 530 Topics in Computer Analysis of Educational Data

### **FOLKLORE & ETHNOMUSICOLOGY**

E 714 Paradigms of Ethnomusicology  
 F 722 Colloquium in Theoretical Folklore/Ethnomusicology  
 F 738 Psychological Issues in Folklore

### **FRENCH & ITALIAN**

F 576 Introduction to French Phonology  
 F 577 Introduction to French Syntax  
 F 579 Introduction to French Morphology  
 F 580 Applied French Linguistics  
 F 603-604 History of the French Language I-II  
 F 670 Advanced French Phonology  
 F 671 Advanced French Syntax  
 F 672 French Dialectology  
 F 673 Topics in the Learning and Teaching of French  
 F 675 Studies in French Linguistics  
 F 676 Structure and Sociolinguistics of Aspects of Haitian Creole and Haitian French  
 F 677 French Lexicology and Lexicography  
 F 678 Advance French Morphology  
 F 679 Pidgins and Creoles

### **GERMANIC LANGUAGES**

G 625 Lit and Culture: Special Topics  
 G 505 Introduction to Cognitive Humanities

### **SCHOOL OF PUBLIC HEALTH - KINESIOLOGY**

K 542 Neuromuscular Control of Movement

### **HISTORY AND PHILOSOPHY OF SCIENCE**

X 551- Survey of the Philosophy of Science  
 X 552- Modern Philosophy of Science  
 X 755 Special Topics in the Philosophy of Science

### **INFORMATICS**

I 502 Human-centered rsrch methods  
 I 590 Topics in Informatics (When Appropriate)  
 I 540 Human Robot Interaction  
 I 546 Music Information Processing: Symbolic  
 I 548 Introduction To Music Informatics  
 I 601: Intro to Complex Systems  
 I 585 BIOINSPIRED COMPUTING  
 I 609 ADVANCED SEMINAR I INFORMATICS (COMPLEX SYSTEMS)  
 I 690 Cybernetics and Revolution: International Histories of Science, Technology and Political Change

### **INTELLIGENT SYSTEMS ENGINEERING**

E 599 (Autonomous Robotics)

### **INFORMATION AND LIBRARY SCIENCE**

Z 511 Database Design  
 Z 516 Human-Computer Interaction  
 Z 533 Online Searching  
 Z 555 Strategic Intelligence  
 Z 561 User Interface Design for Information Systems  
 Z 637 Information Visualization  
 Z 604 Topics in Library and Information Science  
 Z 639 Social Media Mining

Z 661 Concepts & Contemporary Issues in Human Computer Interaction  
 Z 519: Information Analytics

### **LINGUISTICS**

L 503 Survey of Linguistics  
 L 530 Introduction to Historical Linguistics  
 L 541 Introductory Phonetics  
 L 542 Phonological Analysis  
 L 543 Syntactic Analysis  
 L 544 Morphological Analysis  
 L 545 Computation and Linguistic Analysis  
 L 546 Semantics  
 L 555 Programming for Computational Linguistics  
 L 611 Models of Linguistic Structure  
 L 614 Alternative Syntactic Theories  
 L 625 Bilingualism and Language Contact  
 L 630 Lexicology  
 L 641 Advanced Phonetics  
 L 642 Advanced Phonological Description  
 L 643 Advanced Syntax  
 L 645 Advanced Natural Language Processing  
 L 700 Seminar on current issues (when appropriate)  
 L 710 Seminar in Acoustic Phonetics  
 L 712 Seminar in Phonology  
 L 714 Seminar in Syntax  
 L 780 Seminar in Structural Semantics  
 T 522 Survey of Applied Linguistics  
 T 532 Second Language Acquisition  
 T 632 Current Research in Second-Language Acquisition  
 T 711 Seminar in Applied Linguistics

### **MATHEMATICS**

M 403-M 404 Introduction to Modern Algebra I-II  
 M 441-M 442 Introduction to Partial Differential Equations with Applications I-II  
 M 447-M 448 Mathematical Models and Applications I-II  
 M 463-M 464 Introduction to Probability Theory I-II  
 M 540-M 541-M542 Partial Differential Equations I-II-III  
 M 544-M 545 Ordinary Differential Equations I-II  
 M 546 Control Theory  
 M 548 Mathematical Methods for Biology  
 M 560 Applied Stochastic Processes  
 M 563-M 564 Theory of Probability I-II  
 M 568 Time Series Analysis  
 M 569 Statistical Decision Theory  
 M 571-M572 Analysis of Numerical Methods I-II  
 M 584 Recursion Theory  
 M 682 Model Theory  
 M781-782 Selected Topics in Mathematical Logic

### **MEDIA SCHOOL**

T 552 Cognitive Approaches to Media  
 T 571 Applied Cognitive & Emotional Psychology  
 T 602 Topical Seminar in Telecommunications Processes and Effects  
 T 641 Children and Media  
 T 658 Topics in Music Cognition

### **SCHOOL OF MUSIC**

E 519 Psychology of Music  
 E 530 Learning Processes in Music  
 T 561 Music Theory: Variable Topics (when appropriate)

### **MIDDLE EASTERN LANGUAGES AND CULTURES**

N 524 Introduction to Arabic Linguistics

### NEUROSCIENCE

N 500 Neural Science I

N 501 Neural Science II

N 510 Cellular and Molecular Neuroscience

N 550 Seminar: Sensorimotor Neuroplasticity

N 611 Neural Basis of Sensory Function

N 613 Neural Mechanisms of Hearing

### SCHOOL OF OPTOMETRY - DEPARTMENT OF VISUAL SCIENCE

V 791 Quantitative Methods for Vision Research

V 768 Special Topics in Vision Sci

### PHILOSOPHY

P 505-P 506 Logical Theory I-II

P 520 Philosophy of Language

P 535 Phenomenology & Existentialism

P 550 Systems of Modal Logic

P 551 Philosophy and Foundations of Mathematics

P 552 Philosophy of Logic

P 560 Metaphysics

P 561 Philosophy of Mind

P 562 Theory of Knowledge

P 570 Philosophical Psychology

P 571 Philosophy of Nature

P 720 Seminar: Philosophy of Language

P 750 Seminar: Logical Theory

P 751 Seminar: Logic

P 760 Seminar: Metaphysics and Epistemology

### POLITICAL SCIENCE

Y 673 Empirical Theory and Methodology (when appropriate)

### PSYCHOLOGY

P 417 Animal Behavior

P 435 Laboratory in Human Learning and Cognition

P 438 Language and Cognition

P 502 Developmental Psychology

P 503 Complex Cognitive Processes

P 506 Sensory Psychology

P 507 Theories of Learning

P 510 Principles of Research in Psychology

P 514 Methods in Biopsychology

P 517 Methods in the Direct Observation of Behavior

P 526 Neurobiology of Learning and Memory

P 527 Developmental Psychobiology

P 528 Experimental Analysis of Economic Behavior

P 533 INTR BAYESIAN DATA ANALYSIS I

P 553-P 554 Advanced Statistics in Psychology I-II

P 555 Computer Applications in Psychological Research

P 557 Representation of Structure in Psychological Data

P 564 Psychophysics

P 565 Psychophysics of Vision

P 595 First-Year Research Seminar

P 605 Introduction to Mathematical Psychology

P 615 Developmental Psychology I

P 620 Attitudes and Attitude Change

P 623 Psychology of Language

P 638 Experimental Psychology of Reading

P 644 Attention and Short-Term Memory

P 645 Learning and Long-Term Memory

P 647 Decision Making Under Uncertainty

P 648 Choice Behavior

P 651 Perception/Action

P 654 Multivariate Analysis

P 657 Topical Seminar (when appropriate)

P 658-P659 Mathematical Models in Psychology I-II

P 717 Evolutionary Bases of Learning

P 747 Seminar in Cognitive Psychology

P 820 Social Perception

### SLAVIC LANGUAGES AND LITERATURES

L 599 Prague School Linguistics and Poetics

### SOCIOLOGY

S 650 Statistical Techniques in Sociology

S 651 Topics in Quantitative Sociology

S 652 Topics in Qualitative Methods

S 656 Mathematical Applications in Sociology

S 660 Advanced Topics (when appropriate)

S 700 Topical Seminar (when appropriate)

### SPANISH AND PORTUGUESE

S 508: Introduction to Hispanic Pragmatics

S 509: Spanish Phonology

S 511: Spanish Syntactic Analysis

S 513: Introduction to Hispanic Sociolinguistics

S 515: The Acquisition of Spanish as a Second Language

S 609: Spanish Phonology II

S 611: Advanced Spanish Syntax

S 612: Topics in Linguistic Variation and Language in Context (can be repeated for credit with changing topics)

S 614: Topics in the Acquisition of Spanish (can be repeated for credit with changing topics)

S 628: Topics in Early Modern Span Lit.

S 712: Seminar: Themes in Spanish Linguistics

S 716: Seminar: Themes in Acquisition of Spanish as a Second Language

### SPEECH, LANGUAGE, AND HEARING SCIENCES

S 501 Neural Bases of Speech and Language

S 515 Topical Seminar in Speech Pathology

S 520 Theoretical Bases for Phonological Disorders

S 522 Digital Signal Processing

S 524 Survey of Children's Language Development

S 532 Early Communicative Development: Intervention Issues

S 534 Language Development in School Age Children

S 537 Diagnosis and Management of Adult Aphasia

S 538 Atypical Language Development

S 545 Adult Cognitive-Communication Disorders

S 550 Stuttering

S 555 Motor Speech Disorders

S 578 Audiological Instrumentation and Calibration

S 674 Advanced Seminar in Audiology

S 696 Language Research in Speech, Language and Hearing Sciences

S 702 Acoustic Research in Speech, Language, and Hearing Sciences

### STATISTICS

S 611 Applied Statistical Computing

S 682 Topics in Mathematical Statistics (when appropriate)

S 626 Bayesian Theory and Data Analysis

S 675 Statistical Learning and High-Dimensional Data Analysis

S 710 Statistical Computing

## Cognitive Science

**College of Arts and Sciences**

**Departmental E-mail:** [collped@indiana.edu](mailto:collped@indiana.edu)

**Departmental URL:** [college.indiana.edu/academics/certificates/college-pedagogy.html](http://college.indiana.edu/academics/certificates/college-pedagogy.html)

### Curriculum

Curriculum

#### Graduate Certificate in College Pedagogy

The Graduate Certificate in College Pedagogy provides graduate students in any field of study on the Indiana University Bloomington campus with the opportunity to develop and document their teaching accomplishments. Orientation to the skills, theories, traditions, and innovations of college teaching that are essential to the preparation of future college faculty and the opportunity to develop and document their pedagogical knowledge and skill. The certificate is designed to complement their disciplinary training with both disciplinary and transferable practices in teaching. By combining academic standards, methods, and literatures with practical experience, IU graduate students will be prepared to be outstanding higher education teachers, job candidates, and future faculty members. The certificate program is co-sponsored by the College of Arts and Sciences and the School of Education and includes courses from both units, as well as others on campus.

#### Admission Requirements

Participation in the Certificate in College Pedagogy is by application and must be endorsed in writing by a student's departmental advisor or Director of Graduate Studies. Students enrolled in an IUB master's or doctoral program who are in good standing are eligible to be admitted into the program.

#### Course Requirements

A minimum of 12 hours (and a minimum of four courses) must be accumulated from 3 of the 4 knowledge domains:

- Domain I: The Practicum in College Teaching
- Domain II: Theories and Concepts of College Pedagogy
- Domain III: Special Topics in College Pedagogy
- Domain IV: Research/Scholarship in College Pedagogy

Full domain descriptions and qualifying courses can be found online [here](#).

All students must take at least one School of Education course and can take no more than one course outside of those offered by the School of Education (and its departments) and/or the College of Arts and Sciences (and its departments). Certificate students will develop a plan of study in consultation with one of the co-directors so as to ensure that at least one course requires a statement of teaching philosophy. Some courses may qualify for multiple domains but any given course may only count for one.

Students must maintain a minimum 3.0 GPA in the Certificate courses to be awarded the Certificate in College Pedagogy. The Certificate in College Pedagogy

will be awarded upon the completion of all certificate requirements *and* completion of a graduate degree. The Certificate in College Pedagogy will appear on the transcript of IU students who complete its requirements as an officially endorsed Indiana University certificate.

## Communication and Culture

**College of Arts and Sciences**

**Departmental E-mail:** [cmcl@indiana.edu](mailto:cmcl@indiana.edu)

**Departmental URL:** <http://mediaschool.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

This legacy program is no longer accepting new applicants. Please see the 2016-2017 Media School entry for new program requirements related to this area of study.

Master of Arts and Doctor of Philosophy. Students develop individualized programs of study in consultation with a plan of study committee consistent with the department's interpretive focus on the relationship between communication and culture as manifested in and through the topics of rhetoric, media, performance, and ethnographic studies. Graduate students may also earn a Ph.D. minor that draws upon the department's focus on communication and culture.

#### Special Departmental Requirements

(See also general University Graduate School requirements and the departmental Graduate Handbook for additional information and detailed list of special requirements for specific degree programs.)

#### Master of Arts Degree

**Department is not currently admitting students to this program**

#### Admission Requirements

Undergraduate major in a communication-related discipline (e.g., communication and culture, rhetoric, film, media studies, etc.) or other liberal arts (e.g., English, history, anthropology), with evidence of adequate academic background for graduate study. Admission decisions are also based upon scores on the Graduate Record Examination General Test, undergraduate courses taken and grades received, a scholarly writing sample, a personal statement, and letters of recommendation.

#### Course Requirements

A total of 30 credit hours including: 6 credit hours from among C501, C502, and C503; 3 credit hours from among C505, C506, and C507; and 3 credit hours of C700 dedicated to the independent study of the departmental M.A. reading list. A minimum of 15 credit hours must be taken in courses numbered 500 and above; a maximum of 8 hours can be taken outside of the Department of Communication and Culture. In years when C501 is not offered students may substitute C511, C512, or C513.

## Examination

Written M.A. examination based on departmental reading list is taken during the second year of course work.

## Doctor of Philosophy Degree

**Department is not currently admitting students to this program**

## Admission Requirements

M.A. degree in a communication-related discipline (e.g., rhetoric, communication and culture, film, media studies, etc.) or its equivalent in a related field such as anthropology, education, English, folklore, history, political science, psychology, or sociology. Admission decisions are based upon evidence such as scores on the Graduate Record Examination General Test, undergraduate and graduate courses taken and grades received, a scholarly writing sample, and letters of recommendation.

## Course Requirements

A minimum of 90 credit hours, of which eight (3 or 4 credit hour) courses past the M.A. degree must be taken in the Department of Communication and Culture. Dissertation not to exceed 15 credit hours in C810. A minimum of 30 credit hours must be in courses numbered 500 and above.

## Minor

Outside minor (typically 12–15 credit hours) required, which must be approved by the advisory committee. With approval of the advisory committee, a second minor may be taken.

## Foreign Language Requirement

Reading proficiency in a foreign language. Demonstrated by course work or examination.

## Qualifying Examination

Written and oral; may be taken twice only.

## Ph.D. Minor in Communication and Culture

**Department is not currently admitting students to this program**

## Requirements

A minimum of 12 credit hours of course work in communication and culture, including one course from C501, C502, and C503. Course work must be completed with a grade average no lower than B (3.0). In years when C501 is not offered, students may substitute C511, C512, or C513. Students may transfer a maximum of 3 hours from another university toward this degree with the approval of the director of graduate studies in the Department of Communication and Culture.

To arrange for the minor in communication and culture, students should consult with the director of graduate studies, who will recommend a member of the faculty to serve as an advisor. In consultation with the advisor, a program of study will be outlined, and a copy of the plan filed with the director of graduate studies.

## Faculty

## Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

## Distinguished Professor

Richard Bauman\* (Emeritus, Folklore and Ethnomusicology)

## Chancellor's Professor

James Naremore\* (Emeritus)

## Professors

James Andrews\* (Emeritus), Patricia Hayes Andrews\* (Emeritus), Carolyn Calloway-Thomas\*, Robert L. Ivie\* (Emeritus), Barbara Klinger\* (Emeritus), John Louis Lucaites\*, Robert E. Terrill\*, Gregory A. Waller\*.

## Associate Professors

Chris Anderson\*, John Arthos\*, Stephanie De Boer\*, Terri Francis\*, Ilana Gershon\*, Jane E. Goodman\*, Mary Louise Gray\*, Joan C. Hawkins\*, Susan Lepselter\*, Joshua Malitsky\*, Michael Martin\*, Susan Seizer\*, Jon Simons\*,

## Assistant Professors

Elizabeth Elcessor, Ryan Powell

## Adjunct Professors

Peter Bondanella\* (Emeritus, French and Italian), Sumie Jones\* (Emerita, East Asian Languages and Cultures, Comparative Literature), Darlene Sadlier\* (Spanish and Portuguese), Beverly Stoeltje\* (Anthropology)

## Director of Graduate Studies

Associate Professor Jon Simons\*, 800 East Third Street, Room 213, (812) 856-0896

## Courses

### CMCL-C 501 Introduction to Rhetoric and Public Culture (3 cr.)

A first course for students interested in exploring the relationship between rhetoric and public culture as manifest in modes of practical reasoning, the constitution and performance of self/society, and socio-political critique/judgment. Engages the connection between these modalities by focusing on the premodern and late or postmodern rhetorical theory as they implicate the problematics of contemporary social and political theory, including power, agency, ideology, hegemony, mediation, subjectivity, etc.

### CMCL-C 502 Introduction to Performance in Communication and Culture (3 cr.)

Introduction to various theories and methods of research in human communication studies. Includes theories of discourse and culture, message production and reception, symbol systems, social constructionism, relational communication, conversation analysis, social influence, communication competence, and other topics.

### CMCL-C 503 Introduction to Media Theory and Aesthetics (3 cr.)

Study of classical and contemporary theoretical texts.

### CMCL-C 505 Productive Criticism of Political Rhetoric (3 cr.)

Conceptualizes rhetoric as a mode of social critique while focusing on the problem of the scapegoat

in public culture. Critically examines constructions of the threatening Other as they foster alienation and victimization within and between polities. Draws on Kenneth Burke's dramatism as a framework for rhetorical critique.

**CMCL-C 506 Methods of Media Research (3 cr.)**

Introduction to research methods used in critical studies of media and culture.

**CMCL-C 507 Methods of Ethnographic Research in Communication and Culture (3 cr.)**

Exploration of ethnographic research methods in the study of communication and culture, including the ethnography of performance, media, and public discourse. The emphasis is on qualitative methods; course work includes exercises in participant observation and interviewing.

**CMCL-C 511 Premodern Rhetorical Theory (3 cr.)**

Survey of key texts, emphasizing rhetorical theory and practice, in the Greek and Latin traditions. Focus on contextualizing these materials within a continually developing intellectual history of rhetorical studies. Of particular interest is the potential for premodern theory to frame, interpret, and critique contemporary rhetorical practice.

**CMCL-C 512 Rhetorical Theories of Cultural Production (3 cr.)**

Examines theories of rhetoric as a primary source of cultural production. Features Giambattista Vico on eloquence, tropes, and the poetic wisdom of culture; Friedrich Nietzsche on rhetoric, metaphor, and the will to power; Chaim Perelman on the realm of rhetoric and the problem of justice; and Kenneth Burke on rhetoric, identification, and the drama of human relations.

**CMCL-C 513 Rhetoric and Sociopolitical Judgment (3 cr.)**

Exploration of the role that rhetoric plays in the production and performance of collective or socio-political judgment. The focus will be on the tension between modern and late or postmodern conceptions of judgment as they implicate the problems and possibilities of rhetorical praxis (i.e., negotiating the relationship between knowledge, understanding, and action) in contemporary democratic policy.

**CMCL-C 545 Introduction to Pedagogy in Communication and Culture (3 cr.)**

Fundamentals of teaching as applied to communication. Focuses on teaching methods and culture, criticism, communication apprehension, textbook selection, test construction, gender in the classroom, and the place of communication and culture in the liberal arts and sciences.

**CMCL-C 552 Media Institutions and the Production of Culture (3 cr.)**

Study of media institutions, work practices, products, and their relationships with their sociopolitical environment.

**CMCL-C 560 Motion Picture Production (3-4 cr.)**

Introduction to 16mm film production including cinematography, editing, and sound.

**CMCL-C 561 Intermediate Motion Picture Production (4 cr.)**

P: CMCL C560. Introduces students to the making of 16 mm sound films, including the recording and editing of synch sound. The various stages of production are explored in lectures, lab exercises, and discussions. Each student designs, directs, and edits a short synch

sound film and participates as a crew member in the other students' productions.

**CMCL-C 562 The Screenplay (3 cr.)** Terminology of screenwriting and form of the screenplay. Development of the screenplay from story outline and treatment to the shooting script. The original screenplay. Techniques of adaptation. Contributions of the screenwriter to the mise-en-scène. Exercises in screenwriting; culmination in the writing of a full-length original screenplay or adaptation. Department is not currently offering this course.

**CMCL-C 592 Media Genres (3 cr.)** Topic varies: the evaluation of typical genres; problems of generic description of definition; themes, conventions, and iconography peculiar to given genres, etc. May be repeated for credit.

**CMCL-C 593 History of European and American Films I (3 cr.)**

Survey of the development of cinema 1895-1926 (silent film era). Particular attention on representative work of leading filmmakers, emergence of film movements and development of national trends, growth of film industry, and impact of television. May be repeated once for credit with a different topic.

**CMCL-C 594 Media History (3 cr.)** Media historiography, topics in national history, national and international movements and trends. Topic varies. May be repeated once for credit with different topic.

**CMCL-C 596 National Cinemas (3 cr.)** Topic varies: historical survey of major national cinemas. Topics may include Brazilian cinema, French national cinema, German film culture, Italian cinema, Indian cinema, and others. May be repeated for credit when topic varies.

**CMCL-C 604 Topical Seminar in Mass Communication and Culture (1-3 cr.)** P: Consent of instructor. Department is not currently offering this course.

**CMCL-C 606 Media Criticism (3 cr.)** Study of the main schools and methods of media criticism. Course may be repeated once for credit with a different topic.

**CMCL-C 608 Images and Critique in Public Culture (3 cr.)** This course examines and assesses some contemporary critical thought about visual and non-visual images, especially the role of images in politics. As well as pursuing various strategies for the ideology critique of images, the course explores the possibility of thinking critically through images. It studies different types of images through a variety of theoretical approaches and thematic questions.

**CMCL-C 610 Identity and Difference (3 cr.)** Political, social, and cultural dimensions of identity and difference. Interrogates the production of marginal and dominant identities (e.g., racial, sexual, colonial) and the emergence of new forms of identification.

**CMCL-C 611 Topics in Rhetoric and Public Culture (3 cr.)** Systematic review of research related to a specific issue or area in rhetoric and public culture. May be repeated for credit when topic varies.

**CMCL-C 612 Constituting Democracy in Rhetorical Discourse (3 cr.)** Compares the role of rhetoric in liberal, deliberative democracy to its function in radical, participatory, and agonistic democracy. Considers problematic constructions of democracy in U.S. political



culture and their relationship to exaggerated perceptions of national vulnerability. Explores the rhetorical potential of myth and metaphor for reconstituting the image of democracy from a diseased to a healthy political practice.

**CMCL-C 614 Rhetoric, Ideology, and Hegemony**

**(3 cr.)** Examination of the relationship between rhetoric, ideology, and hegemony in contemporary social and political thought. The emphasis will be on conceptions of hegemony as a site of praxis for negotiating the tensions between rhetoric and ideology in the production of social and political change (or permanence) in late or post-modernity. Primary readings will draw from twentieth-century rhetorical theory, Marxism, critical theory, and psychoanalysis.

**CMCL-C 615 Rhetoric of Protest in America (3 cr.)**

Presents key instances of protest discourse both in their historical contexts and through the lenses of rhetorical theories of dissent. The focus is on illuminating the problematic and constitutive role of protest in the public culture of the United States, as manifested across a range of electronic and print media. The American Revolution, southern secession, feminisms, black liberation, and gay/lesbian rights will receive particular attention.

**CMCL-C 616 Rhetorical Critiques of War (3 cr.)**

Rhetoric as an heuristic for critically engaging discourses of war and transforming the legitimization of war into a cultural problematic. Focuses on the problem of war in U.S. political culture.

**CMCL-C 617 Rhetoric and Visual Culture (3 cr.)**

Examination of the relationship between rhetoric and visual culture. Key topics to be considered include: the relationship between visual rhetoric and collective memory, social and political controversy and dissent, political style and representation, postmodern media communities, race, gender, identity politics, etc.

**CMCL-C 619 Feminism and Rhetorical Theory (3 cr.)**

This seminar explores the relationship between feminism and rhetoric by examining advocacy by/for women, patriarchal patterns of oppression, and the development of critical perspectives that have arisen out of desires to politically reevaluate contemporary gendered norms. It may be structured as a survey of a wide range of intersections between feminisms and rhetorical theory; or as an in-depth critical engagement with a specific tension, theme, or trajectory, such as "the body."

**CMCL-C 620 Media, Politics, and Power (3 cr.)**

Examination of media institutions (including new media) through various schools of thought. May be repeated once for credit with a different topic.

**CMCL-C 622 Advanced Pedagogy (3 cr.)** P: C545

or equivalent. This advanced pedagogy seminar will investigate theories of learning and academic practice. Topics will vary by semester.

**CMCL-C 626 Studies in Contemporary Communication (3 cr.)**

Systematic review of research related to contemporary problems in the study of communication; may be theoretical, methodological, or critical. Topic varies. May be repeated for credit.

**CMCL-C 627 Performance in Communication and Culture (3 cr.)**

Critical examination of performance as a vantage point on communication and culture in specific

societies, world areas, or social formations. Topic varies. May be repeated for credit.

**CMCL-C 634 Networks, Systems, and Flows (3 cr.)**

This course looks at contemporary theoretical approaches to how knowledge and objects travel. Readings in current theories of circulation address the categories used to conceptualize circulation and distribution, such as networks, systems, and flows.

**CMCL-C 635 Humor in Use (3 cr.)**

Beginning from the premise that humor is a good site for the study of culture, this course looks at a range of cultural contexts for humor, from staged public performance to private joking, and is primarily concerned with the many and varied social uses to which humor is put.

**CMCL-C 636 Reading the Text (3 cr.)**

This seminar hones students' skills of close reading, explication and commentary, textual analysis and interpretation, in relation to one or two books central to the academic study of communication and culture. The books studied will be determined in each iteration of the seminar.

**CMCL-C 637 Publics (3 cr.)**

How can we understand the different ways that publics are composed? This course looks at how one analyzes texts, events and social groups when focusing on publics.

**CMCL-C 645 Topics in the Comparative Study of Communication and Culture (3 cr.)**

Analysis of communicative forms and practices in comparative perspective. Topic varies. May be repeated for credit.

**CMCL-C 646 Pedagogy Practicum (1 cr.)**

Taken by associate instructors in communication and culture who are pursuing a three-course sequence leading to the Certificate of Pedagogy. Students in C646 will be assigned a faculty mentor who will work with them as they prepare to teach a departmental course that is not under the supervision of a course director. May be repeated for credit.

**CMCL-C 650 Ethnography & Social Theory (3 cr.)**

Scholars build social theory through the analysis of social life and communicative practices. Ethnography is a key vehicle through which theory can be developed. By pairing theoretical and ethnographic works, the course offers a grounding in contemporary social theory and explores how ethnography can develop, hone, or complicate theory. May be repeated once for credit with a different topic.

**CMCL-C 652 Globalization of Media (3 cr.)**

Explores media institutions, practices, and texts across national borders. Topic varies. May examine particular issues such as globalization of media, transnational implications of media texts, transnational data flows, media and foreign policy. May be repeated once for credit with a different topic.

**CMCL-C 660 Advanced Film Production (4 cr.)**

Designed for students who have taken basic production classes and who want to embark on a more ambitious film or video project. Each student will produce one product from script to screen, and assist other students on their projects. Course will address creative, technical, and production management questions.

**CMCL-C 661 Environmental Communication and Public Culture (3 cr.)**

This seminar focuses on how

nature and the environment more broadly understood is articulated, represented, and engaged within public culture. Assuming symbolic and natural systems are mutually constituted, this course aims to foster a closer examination of communication practices that impact the environment and cultural perceptions of it such as tourism, social movement advocacy campaigns, corporate and government discourses, popular media, and public participation in decision-making processes.

**CMCL-C 662 Media Audiences (3 cr.)** This course studies audiences in the context of film, television, new media, and other media forms. Topic varies, but may include a focus on theories of spectatorship, methodological approaches to audiences, historical reception studies, ethnographic and/or empirical audience studies, global or transnational audiences, performance theory, fan cultures, and subcultures.

**CMCL-C 670 Rhetoric in Contemporary Theory (3 cr.)** Examines the role of rhetoric in emerging social, political, aesthetic, and cultural theories and on the implications of such theories for rhetorical inquiry.

**CMCL-C 688 Rhetorics of Transgression and/or Resistance (3 cr.)** This seminar compares and contrasts choices to identify, name, and imagine certain rhetorical acts as transgression or resistance. Engaging a range of contemporary theories, methods, and vocabularies, it explores which approaches are productive depending on the particular situation, practices, and actors involved, as well as the questions one is studying.

**CMCL-C 690 Theories of Symbolic Meaning (3 cr.)** P: Linguistics L503 or consent of instructor. Intensive study of referential, behavioral, rule-governed, and cognitive theories of symbolic meaning, with attention to comprehension of words, utterances/sentences, and extended discourse. Department is not currently offering this course. May be repeated for credit.

**CMCL-C 691 Authorship in Media (4 cr.)** In-depth analysis of individuals in the media who become known as "authors." May be repeated for credit when topic varies.

**CMCL-C 700 Research (1-4 cr.)** P: Consent of instructor. This course is eligible for a deferred grade. Students must have ample preparation in some theoretical area and in one or more research methods. Designed to allow students to conduct a research study, including the collection and examination of data (broadly defined), to answer a question, to prove a thesis, or to test a hypothesis relating to communication/rhetorical theory. May be repeated for credit.

**CMCL-C 701 Practicum in Communication Research (3 cr.)** P: Consent of instructor. Students must have ample preparation in some theoretical area and in one or more research methods. Designed to allow students to conduct a research study, including the collection and examination of data (broadly defined), to answer a question, to prove a thesis, or to test a hypothesis relating to communication/rhetorical theory. May be repeated for credit.

**CMCL-C 705 Research Seminar in Rhetoric and Public Culture (3 cr.)** Problems and issues in rhetoric and public culture. May be repeated for credit.

**CMCL-C 706 Theories of Performance in Communication and Culture (3 cr.)** Critical examination of theoretical problems in the study of performance in communication and culture. Topic varies. May be repeated for credit.

**CMCL-C 710 Research Seminar (1-3 cr.)** May be repeated for credit.

**CMCL-C 727 Seminar in Cross-Cultural Communications (3 cr.)** May be repeated for credit.

**CMCL-C 790 Seminar: Pragmatic Functions of Language (3 cr.)** P: C501 and C502, or consent of instructor. Study of research dealing with the correlates of language variation, including topics such as language clarity, intensity, obscenity, style, dialects, interactions of language with perception/cognition and mental health, and the constituents of pragmatic language competence. Department is not currently offering this course. May be repeated for credit.

**CMCL-C 792 Advanced Seminar in Media Theory (3 cr.)** Topic varies: advanced study in media history and theory; major movements and historical periods and their relationship to the intellectual and cultural climate of the time; studies of technology and modes of production; advanced work in genre or auteur studies; close reading of major works of media theory; new developments in theory and criticism. May be repeated for credit.

**CMCL-C 793 Seminar in Media (3 cr.)** Topics in media studies. May be repeated once for credit when topic changes.

**CMCL-C 800 M.A. Thesis (arr. cr.)**

**CMCL-C 810 Ph.D. Thesis (arr. cr.)** This course is eligible for a deferred grade.

**CMCL-C 638 Experiments with the Film Camera (4 cr.)** P: C560. This course is designed to explore techniques and concepts of experimental filmmaking. It builds on the foundations of other CMCL production classes, and assumes that you have a solid grounding in basic cinematography and visual storytelling, as well as in the fundamentals of digital editing.

## Comparative Literature

College of Arts and Sciences

Departmental E-mail: [complit@indiana.edu](mailto:complit@indiana.edu)

Departmental URL: [www.indiana.edu/~complit/](http://www.indiana.edu/~complit/)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Arts, Dual Master of Arts/Master of Library Science, Master of Arts for Teachers, and Doctor of Philosophy

#### Special Program Requirements

(See also general University Graduate School requirements.)

For details about departmental rules and procedures, consult the current Comparative Literature Graduate Handbook, available on the departmental website.

### Admission Requirements

Graduate Record Examination General Test required. For the Ph.D., fluent reading knowledge of at least two foreign languages. For the M.A., fluent knowledge of at least one foreign language. Deficiencies in undergraduate work and foreign languages must be addressed within one year after admission. Only students holding the M.A. or its equivalent will be considered for direct admission to the Ph.D. program. (Note: Students admitted on a provisional basis must present proof of completion of the B.A. or M.A. upon their arrival at Indiana University.)

### Master of Arts Degree Course Requirements

A minimum of 30 credit hours, 20 credit hours of which must be in Comparative Literature courses, including C501, C502, one course on European literature in the premodern period (normally C505, C521, C523, or C525), one course on European literature in the modern period (normally C506, C529, C533, C535, C537, or C538), and one proseminar. With the consent of the instructor, any full course in Comparative Literature other than C501, C502, and C507 may be designated a proseminar. In exceptional cases, the Director of Graduate Studies may permit another appropriate Comparative Literature graduate course to count as the pre-modern or modern requirement. Consult the Comparative Literature Graduate Handbook for further details.

### Language Requirements

Reading proficiency in two foreign languages. Proficiency may be certified by: (1) receiving a grade of B or higher in a graduate-level literature course in which the assigned readings are in the foreign language, or (2) passing an examination in translation and explication of literary texts in the foreign language administered by the Department of Comparative Literature in consultation with faculty in other departments. Successful completion of the 491/492 course sequence in a foreign language will not be accepted as certification of reading proficiency. Students whose native language is not English and who have passed the proficiency test administered by the Center for English Language Training may request certification of English as one of their foreign languages.

### Master's Project

There are three ways to meet the master's project requirement: (1) by revising or expanding a suitable research or seminar paper as a master's essay; (2) by writing an original master's essay; or (3) by writing a formal master's thesis. Consult the Comparative Literature Graduate Handbook for details. The requirement should normally be fulfilled no later than the end of the fourth semester after beginning graduate studies in Comparative Literature at Indiana University. Consult the Comparative Literature Handbook for details.

### Dual Master of Arts Degree

Students admitted to the dual Master of Arts program may obtain M.A. degrees in Comparative Literature and a related field with fewer credits than would be required

if the two degrees were taken separately. Consult the Comparative Literature Graduate Handbook for details.

Dual Master's Degree in Comparative Literature and the Department of Information and Library Science (M.A./M.L.S.)

The joint program consists of a total of at least 50 credit hours: a minimum of 30 credit hours in Information and Library Science, and a minimum of 20 credit hours in Comparative Literature. Consult the Graduate Handbook for details.

### Master of Arts for Teachers Degree MAT Admission Requirement

B.A. degree in Comparative Literature or an individual literature.

### MAT Course Requirements

A total of 36 credit hours, 20 of which must be in Comparative Literature, including C501, C502, one course on European literature in the premodern period (normally C505, C521, C523, or C525), and one course on European literature in the modern period (normally C506, C529, C533, C535, C537 or C538). In exceptional cases, the Director of Graduate Studies may permit another appropriate Comparative Literature graduate course to count as the pre-modern or modern requirement.

### MAT Language Requirement

Certification of reading proficiency in one foreign language.

### MAT Examination

A 90-minute written examination analyzing two texts drawn from an approved reading list. One text may be a work of art in a nonliterary medium. If both texts are written, one must be in a foreign language.

### Doctor of Philosophy Degree Course Requirements

A total of 90 credit hours, including 65 credit hours of course work, of which 35 credit hours must be in Comparative Literature, including C501, C502, one course on European literature in the premodern period (normally C505, C521, C523, or C525), one course on European literature in the modern period (normally C506, C529, C533, C535, C537, or C538), and one proseminar. With the consent of the instructor, any full course in Comparative Literature other than C501, C502, and C507 may be designated a proseminar. In exceptional cases, the Director of Graduate Studies may permit another appropriate Comparative Literature graduate course to count as the pre-modern or modern requirement. Consult the Graduate Handbook for further details. The dissertation must not exceed 25 research credit hours.

### Language Requirements

Reading proficiency in three foreign languages. Proficiency may be certified by: (1) receiving a grade of B or higher in a graduate-level literature course in which the readings are in the foreign language, or (2) passing an examination in translation and explication of literary texts in the foreign language administered by the department. Successful completion of the 491-492 course sequence in a foreign language will not be accepted

as certification of reading proficiency. Students whose native language is not English and who have passed the proficiency test administered by the Center for English Language Training may request certification of English as one of their foreign languages. With the permission of the Director of Graduate Studies, doctoral students may be allowed to substitute intensive preparation (at least 27 credit hours) in a nonliterary discipline for the third foreign language.

### Minor

A minimum of 12 to 15 credit hours in an outside field selected in consultation with the Director of Graduate Studies. Requirements are set by the department or program administering the minor. Students have the option of taking a second minor or of completing an intensive minor with a minimum of 24 credit hours.

### Qualifying Examination

One written exam on three topics (areas). The examination may take into account work done in the minor field(s). At the student's request and with the approval of the exam committee, one part may be written in a foreign language. Oral examination follows one week after the written exam, with both exams taken into account in the final assessment.

### Final Examination

Oral defense of dissertation.

### Ph.D. Minor in Comparative Literature

Four courses in Comparative Literature, including C501. To fulfill the requirements for the Ph.D. minor, students are expected to complete courses with a grade of B- or better. Students may arrange for an independent reading course (C604) in place of a one Comparative Literature course with the written approval of the Director of Graduate Studies; such a course must carry a minimum of three credits. Students must also demonstrate a fluent reading knowledge of at least one foreign (non-native) language.

### Ph.D. Minor in Literary Theory

Jointly administered by the Department of Comparative Literature and the Department of English, the minor requires a minimum of three courses, including at least one selected from Comparative Literature C503, C504, C601, or C602; and one from English G660, L605, L607, L608, or L707. Other courses approved for the minor include French and Italian F564 and F584; Germanic Studies G505; Slavic and East European Languages and Cultures R598; Spanish and Portuguese S473 and S512; and Theatre, Drama, and Contemporary Dance T555 and T556. Other courses may also be acceptable toward completion of the requirement; written consent to count such courses must be obtained in advance from the Director of Graduate Studies in the Department of Comparative Literature or the Department of English.

### Graduate Certificate in Literary Translation Course Requirements

Twenty-one (21) to 24 credit hours, including C580 History and Theory of Translation; C581 Workshop in Literary Translation; one other workshop in translation; and three further courses in Comparative Literature or one of the foreign language departments, consisting either of further literary translation workshops, graduate-

level literature courses using original-language texts or advanced courses (300 level or above) in the language itself. In exceptional cases, the student may petition the Translation Studies Committee to accept, in lieu of one or more of these courses, other evidence of advanced knowledge of the language, such as extensive undergraduate or overseas training or educated native proficiency.

### Language Requirements

In-depth knowledge of English and one other language.

### Translation Project

Translation of a literary or scholarly work or works into English, accompanied by an introductory essay. If the translation project is completed in partial fulfillment of the M.A. degree, the guidelines for the M.A. degree pertain.

For further details consult the current Comparative Literature Graduate Handbook.

### Faculty

#### Chairperson

Professor Paul Losensky\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Chancellor's Professor

Anya Peterson Royce\* (Anthropology)

#### Professors

Michel Chaouli\* (Germanic Studies), David M. Hertz\*, Bill Johnston\*, Eileen Julien\* (French and Italian), Paul Losensky\* (Central Eurasian Studies), Herbert J. Marks\*, Rosemarie McGerr\*, Eyal Peretz\*, Anya Peterson-Royce\* (Anthropology)

#### Associate Professors

Akinwumi Adesokan\*, Jacob Emery\* (Slavic and East European Languages and Cultures), Jennifer Goodlander\*, Sarah Van der Laan\*

#### Assistant Professors

Sonia Velazquez\* (Religious Studies)

#### Visiting Assistant Professors

Izabela Potapowicz, Michael Weinman

#### Adjunct Professors

Jeffrey Bardzell\* (Informatics), Shaowen Bardzell\* (Informatics), Fritz Breithaupt\* (Germanic Studies), J. Peter Burkholder\* (Distinguished Professor of Musicology), Deborah Cohn\* (Spanish and Portuguese), Patrick Dove\* (Spanish and Portuguese), Vivian Halloran\* (American Studies, English), Douglas Hofstadter\* (Distinguished Professor of Cognitive Science, Computer Science), Joshua Kates\* (English), Dov-Ber Kerler\* (Germanic Studies), Eric MacPhail\* (French and Italian),



Rebecca Manring\* (India Studies, Religious Studies), Russell Scott Valentino\* (Slavic and East European Languages and Cultures), Marc Weiner\* (Germanic Studies)

### Adjunct Associate Professors

Purnima Bose\* (English, Cultural Studies), Joan Hawkins\* (Media School), Joanna Ni#y#ska\* (Slavic and East European Languages and Cultures), Edith Sarra\* (East Asian Languages and Cultures), Johannes Turk\* (Germanic Studies), Estela Vieira\* (Spanish and Portuguese)

### Professors Emeriti

Salih Altoma\* (Near Eastern Languages and Cultures), Willis Barnstone\* (Distinguished Professor, Spanish and Portuguese), Luis Beltrán\* (Spanish and Portuguese), Ernest Bernhardt-Kabisch\* (English), Gilbert Chaitin\* (French and Italian), Claus Clüver\*, Eugene Eoyang\* (East Asian Languages and Cultures), Karen Hanson\* (Philosophy), Roger W. Herzel\* (Theatre, Drama, and Contemporary Dance), Ingeborg Hoesterey\* (Germanic Studies), Yoshio Iwamoto\* (East Asian Languages and Cultures), Sumie A. Jones\* (East Asian Languages and Cultures), Oscar S. Kenshur\* (English, Philosophy), Barbara Klinger\* (Communication and Culture), Giancarlo Maiorino\* (Rudy Professor), Fedwa Malti Douglas\* (Martha C. Craft Professor of Humanities, Gender Studies), Rosemary Lloyd\* (French and Italian), B. Breon Mitchell\* (Germanic Studies), James Naremore\* (Media School), Angela C. Pao\*, William Rasch\* (Germanic Studies), Jack Rollins (Honors), Rakesh H. Solomon\* (Theatre and Drama), Darlene Sadlier\* (Spanish and Portuguese), Suzanne Stetkevych\* (Near Eastern Languages and Cultures), H. Wayne Storey\* (French and Italian, Medieval Studies), Bronislava Volkova (Slavics and East European Languages and Cultures)

### Director of Graduate Studies

Bill Johnston\*, Ballantine Hall 629, (812) 856-0500

### Courses

#### Courses Required for M.A. and Ph.D. Programs

**CMLT-C 501 Introduction to Contemporary Literary Studies (3 cr.)** Introduces major questions and ideas about the nature of literature and the principles and methods of its study.

**CMLT-C 502 Fields and Methods of Comparative Literature (1 cr.)** Explores the various disciplines and approaches that constitute the practice of comparative literature at Indiana University and introduces their methods and bibliographical resources. Faculty members will lecture on their specialties.

#### Theoretical and Interdisciplinary Courses

**CMLT-C 503 Topics in World Criticism and Theory I (4 cr.)** Selections from critics, theorists, and critical and theoretical movements before 1750 from an intercultural perspective. As topics vary, may be repeated for credit.

**CMLT-C 504 Topics in World Criticism and Theory II (4 cr.)** Selections from critics, theorists, and critical and

theoretical movements after 1750 from an intercultural perspective. As topics vary, may be repeated for credit.

#### CMLT-C 545 The Bible and Western Literature (4 cr.)

Questions of authority, unity, canonicity, and interpretive license studied with reference to selected texts from the Western tradition and their biblical sources. May be repeated for credit when topic differs.

**CMLT-C 546 Sexuality and the Arts (4 cr.)** Beginning with a general introduction to methodology, examines human sexuality as manifested in various cultures, literatures, and areas of the arts.

#### CMLT-C 555 Theory and Methods of Interarts Studies (4 cr.)

The interrelations of literature, music, dance, and the visual arts, with an emphasis on questions of representation, symbolic structure, intersemiotic transposition, illustration, period, style, hybrid and multi-media forms, and general method. Topics may vary.

**CMLT-C 601 Studies in the History of Theory and Criticism (4 cr.)** Topic varies. May be repeated for credit.

**CMLT-C 602 Contemporary Theoretical Issues and Approaches (4 cr.)** Topic varies. May be repeated for credit.

**CMLT-C 641 Literature in Its Intellectual and Cultural Contexts (4 cr.)** Topic varies. May be repeated for credit.

**CMLT-C 643 Literary Studies and the Social Sciences (4 cr.)** Topic varies: e.g., politics and the novel, new historicism, the theory of ideology. May be repeated for credit.

**CMLT-C 644 Literary Studies and Psychoanalysis (4 cr.)** Topic varies: e.g., Freud and literature, Lacan and literary theory. May be repeated for credit.

**CMLT-C 645 Literary Studies and Religion (4 cr.)** Topic varies. May be repeated for credit.

**CMLT-C 647 Literary Studies and Philosophy (4 cr.)** Topic varies. May be repeated for credit.

**CMLT-C 649 Literary Studies and the Natural Sciences (4 cr.)** Topic varies: e.g., science and the theory of interpretation; the aesthetics of evolution. May be repeated for credit.

**CMLT-C 655 Topics in Interarts Studies (4 cr.)** Topic varies. May be repeated for credit.

**CMLT-C 692 Comedy in Film and Literature (4 cr.)** Styles and techniques of film comedy from the beginnings of cinema to the present. Theories of comedy and humor; relationship to comedy in fiction, drama, pantomime, circus, and vaudeville.

**CMLT-C 693 Film Adaptations of Literature (4 cr.)** Analysis of the processes and problems involved in turning a literary work (novel, play, or poem) into a screenplay and then into a film. Close study of literary and film techniques and short exercises in adaptation.

**CMLT-C 790 Studies in Film and Literature (4 cr.)** Topic varies: e.g., cinema and the theory of narrative; literary adaptation in cinema; relation of cinematic and literary movements (e.g., surrealism, expressionism). May be repeated for credit.



### Period Courses

**CMLT-C 505 Western Literary and Intellectual Traditions to 1500 (4 cr.)** Classical, biblical, and medieval texts.

**CMLT-C 506 Western Literary and Intellectual Traditions After 1500 (4 cr.)** An historical overview, discussing a wide range of texts.

**CMLT-C 521 Ancient Greek and Roman Literature (4 cr.)**

**CMLT-C 523 Medieval Literature (4 cr.)**

**CMLT-C 525 The Renaissance and Seventeenth Century (4 cr.)**

**CMLT-C 529 The Eighteenth Century (4 cr.)**

**CMLT-C 533 Romanticism (4 cr.)**

**CMLT-C 535 The Later Nineteenth and Early Twentieth Centuries (4 cr.)**

**CMLT-C 537 The Twentieth Century I (4 cr.)** Early and middle twentieth century.

**CMLT-C 538 The Twentieth Century II (4 cr.)** Late twentieth century to the present.

**CMLT-C 630 Studies in Literary History (4 cr.)** May be repeated for credit.

### Genre Courses

**CMLT-C 511 Drama (4 cr.)**

**CMLT-C 513 Narrative (4 cr.)**

**CMLT-C 515 Lyric (4 cr.)**

**CMLT-C 516 Non-Narrative Prose (4 cr.)**

**CMLT-C 610 Studies in the Theory of Genres (4 cr.)** May be repeated for credit.

**CMLT-C 611 Topics in Literary Genres, Modes, and Forms (4 cr.)** May be repeated for credit.

### Cross-Cultural Studies

**CMLT-C 571 Africa in the History of Ideas (4 cr.)**

**CMLT-C 572 Modern African Letters (4 cr.)**

**CMLT-C 573 Comparative Topics in Middle Eastern and Western Literatures (4 cr.)**

**CMLT-C 575 Topics in East-West Comparative Studies (4 cr.)** Topic varies. May be repeated for credit.

**CMLT-C 576 Comparative Approaches to Chinese Literature (4 cr.)** May be repeated for credit.

**CMLT-C 670 Topics in Cross-Cultural Studies (4 cr.)** May be repeated for credit.

### Translation Studies

**CMLT-C 580 History and Theory of Translation (4 cr.)**

**CMLT-C 581 Workshop in Literary Translation (4 cr.)**

**CMLT-C 680 Topics in Translation Studies (4 cr.)** May be repeated for credit.

### Research, Teaching, and General Topics

**CMLT-C 507 Teaching Methods in Comparative Literature (3 cr.)** The theories, methods, and goals

of teaching literature from a comparative perspective. Topics include literature and composition, cross-cultural approaches, translation studies, comparative arts, literary theory, and technological resources. Practice in developing courses, assignments, and classroom strategies.

**CMLT-C 508 Teaching Literature and Composition (1 cr.)**

**CMLT-C 509 Teaching Internship in Comparative Literature (1 cr.)**

**CMLT-C 603 Topics in Comparative Literature (4 cr.)** May be repeated for credit.

**CMLT-C 604 Individual Readings in Literature (1-4 cr.)** Arranged with an individual member of the department. Faculty authorization is required.

**CMLT-C 801 Research (arr. cr.)** This course is eligible for a deferred grade.

**CMLT-C 805 Master's Thesis (arr. cr.)** This course is eligible for a deferred grade.

**CMLT-C 810 Ph.D. Thesis (arr. cr.)** This course is eligible for a deferred grade.

### Cross-Listed Courses

Curriculum

Courses

Faculty

### Center for Theoretical Inquiry in the Humanities

T600 Special Topics in Critical Theory (3 cr.)

### English

L607 History of Literary Criticism to the Enlightenment (4 cr.)

L608 History of Literary Criticism from 1750 to 1960 (4 cr.)

### French and Italian

F564 Issues in Literary Theory (3 cr.)

F647 Contemporary French Theory and Criticism (3 cr.)

### Slavics and East European Languages and Cultures

R505-R506 Nineteenth-Century Russian Literature I-II (3-3 cr.)

### Theatre, Drama, and Contemporary Dance

T555-T556 Drama Theory I-II (3-3 cr.)

T567 European Drama from Molière to Ibsen (3 cr.)

T571 Studies in Renaissance and Baroque Theatre (3 cr.)

T662 Comparative Theatre and Drama: Melodrama (3 cr.)

## Computer Science

### School of Informatics, Computing, and Engineering Computer Science

**Graduate Studies Office E-mail:** [gradvise@indiana.edu](mailto:gradvise@indiana.edu)

**Departmental URL:** <http://www.cs.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements

contained only in *The University Graduate School Bulletin*.)

## Curriculum

Curriculum

Courses

Faculty

## Degrees Offered

The Doctor of Philosophy (Ph.D.) degree is offered through the University Graduate School. For details on the Master of Science degrees, see the School of Informatics, Computing, and Engineering Bulletin,

## Doctor of Philosophy

### Special Program Requirements

(See also general University Graduate School requirements.)

### Admission Requirements

Admission is by approval of the program's graduate admission committee. Applicant's educational background does not require a bachelor's degree in computer science, informatics, or a related field. It is expected that applicants have successfully completed coursework in data structures, machine organization, assembly language, and discrete structures. Applicants will be evaluated on their previous graduate and undergraduate academic performance, statement of purpose, letters of recommendation, scores on the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS) for students who obtained their undergraduate degree abroad, and (optionally) scores on the General Test of the Graduate Record Examination (GRE).

### Course Requirements

A total of 90 credit hours of graduate-level course work is required. These courses are defined as any course listed in this bulletin that carries graduate credit.

### Computer Science Course Requirements

Ph.D. candidates must take at least 24 credit hours of courses in computer science at or above the 500 level except for the A500-A599 courses. Six courses, from the list below, must be completed each with a minimum grade of B. At least one course must be taken from each of the areas of Foundations of Computing and of Computer systems, and one from either Programming Languages or Intelligent Systems:

1. Foundations of computing: Theory of Computing (B501), Computational Complexity (B502), or Algorithms Design and Analysis (B503).
2. Computer systems: Distributed Systems (B534), Advanced Operating Systems (P536), or Computer Networks (P538).
3. Programming languages: Programming Language Principles (B521), Programming Language Foundations (B522), or Programming Language Implementation (P523).
4. Intelligent systems: Elements of Artificial Intelligence (B551), Machine Learning (B555), Advanced Database Concepts (B561), or Data Mining (B565).

A grade average of B (3.0) is required for the 24 credit hours of required computer science courses. This is in addition to the University Graduate School's requirement of a B (3.0) average for all courses taken.

### Minor Area Requirement

The Ph.D. requires a minor unless the student is a dual major with another department. There are three options to satisfy the minor requirement:

1. An external minor awarded by another Indiana University department or graduate program that is approved by the Computer Science Program.
2. An internal minor: at least 9 computer science credits, in courses other than reading and research, and in an area other than the student's specialization. The area and the courses must be approved by the student's advisory committee.
3. An individualized interdisciplinary minor: at least 12 credits spanning at least two Indiana University departments/degree programs, to be recommended by the student's advisory committee and approved by the Computer Science Program in advance of any course work.

### Qualifying Examination

The qualifying examination is given by the first semester of the student's third year in the program. This examination is administered by the advisory committee and is expected to have a written and an oral component. A student must have completed the 24 credit hours of courses in computer science as specified in the Computer Science Course Requirements before taking the qualifying exam. If failed, the exam may be retaken once, by the end of the third year. Students who fail the second exam will not be allowed to continue in the program.

### Thesis Proposal

The thesis proposal is submitted and defended after the University Graduate School approves the Nomination of Research Committee. It consists of an oral presentation covering a submitted written research plan for the dissertation. This examination is given by the research committee.

### Dissertation Defense

A written elaboration of significant original research must be successfully presented to the student's research committee in a public oral defense as described in this bulletin.

### Ph.D. Minor in Computer Science

Doctoral students in other departments may complete a minor in computer science by satisfying one of the following options:

1. Three computer science courses totaling not fewer than 9 credit hours at the 500 level or above. A500-level courses and 400-level courses are excluded with these exceptions: A595 (B401), B403, P423, P436, P438, B441, P442, and B443 are approved for graduate credit toward the Ph.D. minor.
2. A593, A594, and any two courses totaling 6 credit hours or more from the list: A595, A596, plus the computer science courses meeting the requirements of the first option.

## Faculty

### Department Chair

Yuzhen Ye\*

### Director of Graduate Admissions

Qin Zhang\*

### Associate Director of Graduate Admissions

Apu Kapadia\*

### Director of Graduate Studies

David J. Crandall\*

### Director of Graduate Administration

Patricia Reyes-Cooksey

## Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Volker Brendel\*, Geoffrey Brown\*, David J. Crandall\*, Mehmet Dalkilic\*, Funda Ergun\*, Daniel P. Friedman\*, Matthew Hahn\*, Apu Kapadia\*, Roni Khardon\*, David B. Leake\*, Daniel M. Leivant\*, Christopher Raphael\*, Amr A. Sabry\*, Cenk Sahinalp\*, Jeremy Siek\*, Haixu Tang\*, Dirk Van Gucht\*, Xiaofeng Wang\*, Yuzhen Ye\*

### Associate Professors

Yan Huang\*, Gregory J. E. Rawlins\*, Chung-chieh Shan\*, Sam Tobin-Hochstadt\*, Qin Zhang\*

### Assistant Professors

Saúl Blanco, Nai-Hui Chia, Xiaojing Liao\*, Zoran Tiganj\*, Yijie Wang\*, Donald Williamson\*, Luyi Xing\*, Xuhong Zhang\*

### Visiting Professors

Hasan Kurban

### Emeritus Faculty

Randall Bramley\*, Kent Dybvig\*, Dennis Gannon\*, Mike Gasser\*, Stan Hagstrom\*, Andrew Hanson\*, Chris Haynes\*, Steve Johnson\*, Suzanne Menzel, Frank Prosser\*, Paul W. Purdom\*, Edward Robertson\*, Garry Wiggins\*, David Wise\*

### Senior Lecturers

Dan-Adrian German, Dimitrij Hmeljak, Charles Pope, Muazzam Siddiqui, Erik Wennstrom, Jeffrey Whitmer

### Clinical Faculty

Veljko Malbasa

## Courses

- **CSCI-A 504 Introductory C++ Programming (2 cr.)**P: Programming experience. Topics include aspects of C++ that are not object-oriented, basic data structures, standard libraries, and Unix tools for project management. Credit not given for both A504

and either A304, A597, A592, C212, H212, or BUS K201. Program is not currently offering this course.

- **CSCI-A 506 Object-Oriented Programming in C++ (2 cr.)**P: Either A201, A304, A504, or A597. Topics include objects, classes, encapsulation, inheritance, polymorphism, templates, and exceptions. Credit not given for both A506 and either A306, A202, A592, A598, C212, or H212. Program is not currently offering this course.
- **CSCI-A 521 Computing Tools for Scientific Research (3 cr.)**C: Math 118 or higher required; Math M211 recommended. Introduction to computer-based tools useful for analysis and understanding of scientific data. Basic methods of computation, data processing, and display in systems such as Matlab combined with elementary practical C/C++ programming. Techniques to support customized scientific research tasks, with particular emphasis on biological, neural, and behavioral sciences. Lecture and laboratory.
- **CSCI-A 538 Network Technologies and Administration (3 cr.)**P: A110, EDUC W200, or equivalent computer literacy. Introduction to network principles and current network technology, both hardware and software. Network administration tools and techniques. Laboratory provides practical experience. Credit not given for both A538 and A338.
- **CSCI-A 546 User-Interface Programming (3 cr.)**P: Either A201, A202, A306, C212, A506, A597, A598, or equivalent experience. Learn to prototype and build graphical user interfaces for computer applications. Contemporary software design methodology. Students design and implement prototype interfaces to applications provided by the instructor. Extensive use will be made of both commercial and experimental software tools. Lab fee. Credit not given for both A546 and A346. Program is not currently offering this course.
- **CSCI-A 548 Mastering the World Wide Web (3 cr.)**P: Two semesters of programming experience or equivalent, and some knowledge of operating systems. Project-oriented course leading to ability to maintain a Web site with full functionality. Topics include background on Internet network protocols and programming, Web server administration, advanced Web design and authoring, Web protocols, interfacing services into the Web. Lab fee. Credit not given for both A548 and A348.
- **CSCI-A 590 Topics in Programming (1-2 cr.)**Eight-week courses designed to provide foundations for using modern programming tools for applications and web development. Lecture and lab. May be repeated for a maximum of six credits.
- **CSCI-A 591 Introduction to Computer Science (3 cr.)**A first course in computer science for those intending to take advanced computer science courses. Introduction to programming and to algorithm design and analysis. Using the Scheme programming language, the course covers several programming paradigms. Lecture and laboratory. Credit not given for both A591 and C211.
- **CSCI-A 592 Introduction to Software Systems (3 cr.)**P: Programming experience. Design of computer software systems and introduction to

- programming. Topics include the C++ programming language and its data structure facilities; building and maintaining large projects; shell tools, and system calls. Introduction to object-oriented programming. Lecture and laboratory. Credit not given for both A592 and C212.
- **CSCI-A 593 Computer Structures (3 cr.)**P: A592. Structure and internal operation of computers. The architecture and assembly language programming of a specific computer are stressed, in addition to general principles of hardware organization and low-level software systems. Lecture and laboratory. Lab fee. Credit not given for both A593 and C335. May be applied toward the Ph.D. minor.
  - **CSCI-A 594 Data Structures (3 cr.)**P: A592. P or C: C241 and A593. Systematic study of data structures encountered in computing problems; structure and use of storage media; methods of representing structured data; and techniques for operating on data structures. Lecture and laboratory. Credit not given for both A594 and C343. May be applied toward the Ph.D. minor.
  - **CSCI-A 595 Fundamentals of Computing Theory (3 cr.)**P: C241. P or C: C212. Fundamentals of formal language theory, computation models and computability, the limits of computability and feasibility, and program verification. Credit not given for both A595 and B401. May be applied toward the Ph.D. minor, graduate credit available for CS M.S. candidates with special permission.
  - **CSCI-A 596 Programming Languages (3 cr.)**P: A594. Systematic approach to programming languages. Relationships among languages, properties and features of languages, and the computer environment necessary to use languages. Lecture and laboratory. Credit not given for both A596 and C311. May be applied toward the Ph.D. minor.
  - **CSCI-A 597 Introduction to Programming I (3 cr.)**Fundamental programming constructs, including loops, arrays, classes, and files. General problem-solving techniques. Emphasis on modular programming, user-interface design, and developing good programming style. Credit not given for both A597 and A201.
  - **CSCI-A 598 Introduction to Programming II (1.5-3 cr.)**P: A597, A201, A504, or A304. Advanced programming techniques: user-defined functions and types, recursion vs iteration, parameter-passing mechanisms. Classic abstract data types and algorithms. Programming style. Object-oriented programming. Web programming. May be taught full term or 8 week. Credit not given for both A598 and CSCI-A 202. May be repeated for credit up to 3 hrs.
  - **CSCI-B 403 Introduction to Algorithm Design and Analysis (3 cr.)**Credit not given for both B403 and B503.
  - **CSCI-B 441 Digital Design (4 cr.)**Credit not given for both B441 and B541. Not applicable toward a major in computer science.
  - **CSCI-B 443 Introduction to Computer Architecture (3 cr.)**Credit not given for both B443 and B543.
  - **CSCI-B 501 Theory of Computing (3 cr.)**P: C241. Deterministic and nondeterministic automata, regular expressions, pumping lemmas; context-free languages, parsing, pushdown automata, context-sensitive languages, LBA, LR(k) languages, closure and decidability of language classes. Turing machines, random access machines, grammars, general recursive functions, equivalence of computation models, universal machines, relative computing. Unsolvability, semi-recursive sets, Rice's Theorem. Space and time complexity, NP completeness.
  - **CSCI-B 502 Computational Complexity (3 cr.)**Study of computational complexity classes, their intrinsic properties, and relations between them. Topics include time and space computational complexity, reducibility and completeness of problems within complexity classes, complexity of optimization problems, complexity hierarchies, relativization of the  $P=?NP$  conjecture, and parallel computation models and the class NC.
  - **CSCI-B 503 Algorithms Design and Analysis (3 cr.)**P: MATH M216, and C343. Models, algorithms, recurrences, summations, growth rates. Probabilistic tools, upper and lower bounds; worst-case and average-case analysis, amortized analysis, dynamization. Comparison-based algorithms: search, selection, sorting, hashing. Information extraction algorithms (graphs, databases). Graphs algorithms: spanning trees, shortest paths, connectivity, depth—first search, breadth—first search.
  - **CSCI-B 504 Introduction to Cryptography (3 cr.)**Familiar with basic algebra, combinatorics and probability theory recommended. The course provides students with a foundational introduction to cryptography. Students learn the basic primitives used in cryptography such as symmetric encryption, public-key encryption, message authentication codes, digital signatures, cryptographic hashes and related material. Computational aspects of modern cryptography are stressed, as are appropriate security models, and computational security reductions.
  - **CSCI-B 505 Applied Algorithms (3 cr.)**The course studies the design, implementation, and analysis of algorithms and data structures as applied to real world problems. The topics include divide-and-conquer, optimization, and randomized algorithms applied to problems such as sorting, searching, and graph analysis. The course teaches trees, hash tables, heaps, and graphs.
  - **CSCI-B 510 Introduction to Applied Logic (3 cr.)**Structures: relations between structures, term structures. Description: notation and meaning, substitution operations, first order formulas, database languages, program verification conditions, semantic valuation, normal forms, quantifier reduction, axiomatic theories. Proof: resolution, sequential calculi, natural deduction, automated theorem proving, semantic completeness. Limits of formalization: compactness, undecidability of truth, undecidability of canonical theories, nonformalizability of database theory.
  - **CSCI-B 521 Programming Language Principles (3 cr.)**Systematic approach to programming languages. Relationships among languages,

properties and features of languages, the computer environment necessary to support language execution.

- **CSCI-B 522 Programming Language Foundations (3 cr.)**P: C311 or B521, and B510. Introduction to denotational, operational, and axiomatic approaches to programming language semantics. Semantic analysis of major programming language features. Logics of programs.
- **CSCI-B 524 Parallelism in Programming Languages and Systems (3 cr.)**P: P436 or P536, and either C311, H311 or B521, C343 or H343. Fundamentals of parallel computation, with an emphasis on parallel programming methodology and programming languages. Topics include: parallel algorithms; major paradigms for parallel software construction; (data parallelism, task/thread parallelism and CSP); compiling programs for parallel computers.
- **CSCI-B 534 Distributed Systems (3 cr.)**A balanced treatment of fundamentals and practice of distributed systems. The foundational models, algorithms, and principles upon which distributed systems are based are studied in detail. These fundamentals are placed in the context of practical implementations by means of reading and critical analysis of research papers.
- **CSCI-B 541 Hardware System Design I (3 cr.)**P: C335 or honors version. Structured approach to hardware design, emphasizing hardwired and microprogrammed control. Boolean algebra, hardware building blocks, architecture and control, implementation issues. In the laboratory, students build a working computer using hardware prototyping technologies. Basic training in the use of design and simulation software. Lecture and laboratory.
- **CSCI-B 543 Computer Architecture (3 cr.)**P: C335 and C343 or honors versions. Fundamentals of computer design, instruction processing and performance analysis. Architecture of single-processor systems, focusing on pipelining, memory and memory hierarchies, and interconnect technology. Exploration of architecture classes such as high-performance multiprocessors, massively parallel computers, embedded systems.
- **CSCI-B 544 Security for Networked Systems (3 cr.)**This course is an extensive survey of system and network security. Course materials cover the threats to information confidentiality, integrity and availability and the defense mechanisms that control such threats. The course provides the foundation for more advanced security courses and hands-on experiences through course projects.
- **CSCI-B 546 Malware Epidemic: Threat and Defense (3 cr.)**One semester of programming or equivalent recommended. This course looks at systems and protocols, how to design threat models for them and how to use a large number of current security technologies and concepts to block specific vulnerabilities. Students will use a large number of systems and programming security tools in the laboratories.
- **CSCI-B 547 Systems and Protocol Security and Information Assurance (3 cr.)**Some previous programming background and general computer networking and operating systems literacy recommended. This course covers the design and analysis of secure systems, including identifying security goals and risks, threat modeling, defense, integrating different technologies to achieve security goals, developing security protocols and policies, implementing security protocols and secure coding. Some real world scenarios that have many security requirements will be studied.
- **CSCI-B 548 Privacy in Pervasive Computing (3 cr.)**This course prepares graduate students towards a successful research career in wearable and sensor-based computing. This course combines both lectures on the research process and student-led round-table discussions of seminal and influential papers in the field.
- **CSCI-B 551 Elements of Artificial Intelligence (3 cr.)**P: C343 or H343, good knowledge of LISP or Scheme. Introduction to major issues and approaches in artificial intelligence. Principles of reactive, goal-based, and utility-based agents. Problem-solving and search. Knowledge representation and design of representational vocabularies. Inference and theorem proving, reasoning under uncertainty, planning. Overview of machine learning.
- **CSCI-B 552 Knowledge Based Artificial Intelligence (3 cr.)**P: B551. Knowledge-based methods for artificial intelligence systems: knowledge representation, organization, and application. Typical content includes principles of memory organization, indexing and retrieval. Memory-based, analogical, and case-based reasoning. Applications to understanding, explanation, planning, and advisory systems.
- **CSCI-B 553 Neural and Genetic Approaches to Artificial Intelligence (3 cr.)**P: CSCI-B 551. Approaches to the design of intelligent systems inspired by nervous systems, evolution, and animal behavior. Distributed and perceptually-grounded representations. Temporal processing. Perception and action. Genetic search. Unsupervised and reinforcement learning. Comparison of symbolic, subsymbolic, and hybrid approaches to intelligence.
- **CSCI-B 554 Probabilistic Approaches to Artificial Intelligence (3 cr.)**CSCI-B 403, MATH-M 301 and MATH-M 365 recommended. Theory and practice of computational and mathematical foundations of probabilistic models for artificial intelligence and other areas of computing. Topics include: random variables and independence; graphical models including Bayesian and Markov networks; exact and approximate inference algorithms; constrained, unconstrained and stochastic optimization algorithms; parameter and structure estimation; temporal models; applications.
- **CSCI-B 555 Machine Learning (3 cr.)**Theory and practice of constructing algorithms that learn functions and choose optimal decisions from data and knowledge. Topics include: mathematical/probabilistic foundations, MAP classification/regression, linear and logistic regression, neural networks, support vector machines, Bayesian networks, tree models, committee machines,



kernel functions, EM, density estimation, accuracy estimation, normalization, model selection.

- **CSCI-B 557 Music Information Processing: Audio (3 cr.)** This course discusses music analysis and processing problems that use sampled audio as the primary data representation. Digital signal processing is discussed, along with filtering and its relationship to Fourier techniques. Applications considered include score following, automatic music transcription and annotation from audio, musical accompaniment systems, and audio effects.
- **CSCI-B 561 Advanced Database Concepts (3 cr.)** P: C241, C335, and C343 or honors versions. Database models and systems, especially relational and object-oriented; relational database design theory; structures for efficient data access; query languages and processing; database applications development; views. Transaction management: concurrency and recovery.
- **CSCI-B 563 Bioinformatics Algorithms (3 cr.)** Basic undergraduate algorithms and one programming class or equivalent programming experience in C/C++, Java, or Python recommended. No biology background will be assumed. This course is on algorithmic techniques for solving problems in molecular biology, genetics and genomics. It covers basic algorithmic/combinatorial optimization techniques for alignment, mapping, search and assembly of genomes, resolving mapping ambiguity and genotyping, modeling evolution of genomes (e.g. cancer genomes) and detecting structure and interaction partners of biomolecules.
- **CSCI-B 565 Data Mining (3 cr.)** Algorithmic and practical aspects of discovering patterns and relationships in large databases. The course also provides hands-on experience in data analysis, clustering and prediction. Topics include: data preprocessing and exploration, data warehousing, association rule mining, classification and regression, clustering, anomaly detection, human factors and social issues in data mining.
- **CSCI-B 581 Advanced Computer Graphics (3 cr.)** P: C343, MATH M301 or M303, or equivalent experience. Introduction to graphics hardware and software. Two-dimensional graphics methods, transformations, and interactive methods. Three-dimensional graphics, transformations, viewing geometry, object modeling and interactive manipulation methods. Basic lighting and shading. Video and animation methods.
- **CSCI-B 582 Image Synthesis (3 cr.)** P: B581, MATH M215. Raster image display: color theory, gamma correction, and filtering. Advanced shading methods: local illumination models, global illumination models. Surface display, including ray tracing and Z-buffering. Solid modeling: spline surfaces, CSG, superquadrics, and deformations. Scientific visualization: isosurfaces and volume rendering. Program is not currently offering this course.
- **CSCI-B 599 Teaching in Computer Science (1 cr.)** General principles of teaching and practical experiences that relate to teaching computer science. An important feature of the course is the microteaching, in which each participant prepares and delivers short lectures to the seminar participants. Each presentation is followed by critical analysis and discussion. Program is not currently offering this course.
- **CSCI-B 603 Advanced Algorithms Analysis (3 cr.)** P: B503. Advanced topics in analysis of algorithms, including fast algorithms for classical problems, lower bounds results, and statistical behavior.
- **CSCI-B 607 Philosophy of Computation (3 cr.)** P: Consent of the instructor. Critical examination of the conceptual foundations of computing. Several different views assessed with respect to conceptual, explanatory, and empirical criteria. Primary focus on formal symbol manipulation, recursive function theory, effective computability, computational complexity, digitality, and information processing. Some nonstandard approaches also considered: connectionism, dynamics, and artificial life. Program is not currently offering this course.
- **CSCI-B 609 Topics in Algorithms and Computing Theory (1-6 cr.)** P: Instructor's permission. Special topics in algorithms and computing theory. May be repeated for credit with permission.
- **CSCI-B 619 Topics in Applied Logic (1-6 cr.)** P: Instructor's permission. Special topics in applied logic. May be repeated for credit with permission.
- **CSCI-B 621 Advanced Concepts in Programming Languages (3 cr.)** P: Either C311, H311, or B521. P or C: P423 or P523. Discussion of current issues in the design of programming languages. Modularity, abstraction, and static analysis. Applicative and nonapplicative models. Single and multiple processing.
- **CSCI-B 622 Programming Language Type Systems (3 cr.)** P: C311 or B521. Theoretical foundations and engineering techniques for modern type systems, focusing on polymorphism and subtyping in typed lambda-calculi; applications, including type systems for objects, abstract data types, and modules; issues in type checker implementation and polymorphic type inference. Program is not currently offering this course.
- **CSCI-B 629 Topics in Programming Languages (1-6 cr.)** P: C311 or B521 and instructor's permission. Special topics in programming languages. May be repeated for credit with permission.
- **CSCI-B 639 Topics in Software Systems (1-6 cr.)** P: Instructor's permission. Special topics in software systems. May be repeated for credit with permission.
- **CSCI-B 644 Very Large Scale Integration (3 cr.)** P: B441 or B541. Basic theory and practice required to convert hardware algorithms and architecture to silicon structures. Use of state-of-the-art design tools for integrated circuits. Lab fee.
- **CSCI-B 649 Topics in Systems (1-6 cr.)** P: Instructor's permission. Special topics in systems. May be repeated for credit with permission.
- **CSCI-B 651 Natural Language Processing (3 cr.)** P: B551. R: B552 or B553. Theory and

methods for natural language processing. Algorithms for sentence parsing and generation. Context-free and unification grammars. Question-and-answer systems. Analysis of narratives. Finite-state approaches to computational phonology and morphology. Machine translation. Machine learning of natural language. Speech recognition. Neural-network and statistical alternatives to symbolic approaches.

- **CSCI-B 652 Computer Models of Symbolic Learning (3 cr.)**P: B552. Symbolic artificial intelligence methods for learning. Inductive and explanation-based generalization. Failure-driven learning. Case-based learning. Typical content includes operationality of explanations and utility of learning. Goal-driven learning. Criteria for when, what, and how to learn. Learning in integrated architectures.
- **CSCI-B 656 Web Mining (3 cr.)**Machine learning techniques to mine the Web and other unstructured/semistructured, hypertextual, distributed information repositories. Crawling, indexing, ranking and filtering algorithms using text and link analysis. Applications to search, classification, tracking, monitoring, and Web intelligence. Group project on one of the topics covered in class.
- **CSCI-B 657 Computer Vision (3 cr.)**P: C463 or B551. Concepts and methods of machine vision as a branch of artificial intelligence. Basics of digital image processing. Local and global tools for deriving information from image data. Model-based object recognition and scene understanding.
- **CSCI-B 659 Topics in Artificial Intelligence (1-6 cr.)**P: Instructor's permission. Special topics in artificial intelligence. May be repeated for credit with permission.
- **CSCI-B 661 Database Theory and Systems Design (3 cr.)**P: B461 or B561. Database models: relational, deductive, complex-object, object-oriented. Query languages: relational algebra and calculus, datalog, fixpoint logics, object-oriented query languages. Transaction management theory: concurrency control, recovery, distribution. Post-relational and object-oriented database systems.
- **CSCI-B 662 Database Systems and Internal Design (3 cr.)**P: CSCI-B 561. This course deals with database management systems and their modern applications. We will discuss various issues to be considered and design decisions to be made in these systems. Topics include storage management, access methods, query processing and optimization strategies, concurrently control techniques, data warehousing, data mining, semi-structured data management, etc.
- **CSCI-B 665 Software Engineering Management I (3 cr.)**P: B561 or BUS S560. Topics include the high cost of software, the software life cycle, understanding programming teams, and methodologies for controlling development. Presentation of readings and supervision of programming teams producing software products required. Program is not currently offering this course.
- **CSCI-B 666 Software Management Implementation II (1-3 cr.)**P: B665. Continuation of projects from B665. Periodic reports and a final paper required. If taken for two or more credits, an additional project or paper is required. Program is not currently offering this course.
- **CSCI-B 669 Topics in Database and Information Systems (1-6 cr.)**P: Instructor's permission. Special topics in database and information systems. May be repeated for credit with permission.
- **CSCI-B 673 Advanced Scientific Computing (3 cr.)**P: P573 and MATH M471. Multiprocessor organization: vectorization, memory organization, processor topologies and architectures. Models of parallelism. Programming language and systems for scientific and high-performance computing. Environments for interactive scientific experiments and databases. Distributed programming tools. Parallelism in scientific problems: parallel algorithmic techniques, parallel algorithms and models, parallel performance analysis and debugging.
- **CSCI-B 679 Topics in Scientific Computing (1-6 cr.)**P: Instructor's permission. Special topics in scientific computing. May be repeated for credit with permission.
- **CSCI-B 689 Topics in Graphics and Human Computer Interaction (1-6 cr.)** P: Instructor's permission. Special topics in graphics and human computer interaction. May be repeated for credit with permission.
- **CSCI-P 423 Compilers (4 cr.)**Credit not given for both P423 and P523.
- **CSCI-P 436 Introduction to Operating Systems (4 cr.)**Credit not given for both P436 and P536.
- **CSCI-P 438 Fundamentals of Computer Networks (3 cr.)**Credit not given for both P438 and P538. Not applicable toward a major in computer science.
- **CSCI-P 442 Digital Systems (4 cr.)**Credit not given for both P442 and P542. Not applicable toward a major in computer science. Program is not currently offering this course.
- **CSCI-P 515 Specification and Verification (3 cr.)**P: C311. Tools and techniques for rigorous reasoning about software and digital hardware. Safety, reliability, security, and other design-critical applications. Decision algorithms. Projects involving the use of automated reasoning, such as model checkers, theorem provers, and program transformation. Credit not given for both P415 and P515.
- **CSCI-P 523 Programming Language Implementation (3 cr.)**P: B521 or C311. Implementation of traditional and nontraditional computer programming languages. Compilation, including lexical analysis, parsing, optimization, code generation, and testing. Run-time support, including run-time libraries, storage management, input-output. Comparison of implementation techniques. Extensive laboratory exercises.
- **CSCI-P 532 Object-Oriented Software Development (3 cr.)**P: Proficiency in Java. This course will help turn motivated students into superior contributors to any small- to mid-sized commercial or open-source software project. It takes a hands-on, learning-by-doing approach. Students are introduced to design patterns, tools, and teamwork strategies from the first assignment to the last project.

- **CSCI-P 535 Pervasive Computing (3 cr.)P:** Object oriented programming. Topics in pervasive computing, such as sensors, mobility, tangibles, ambient displays, middleware, location and context-awareness; user-centered design methods, such as requirements gathering, design, prototyping, and evaluation. Labs cover current technologies, such as sensors and mobile devices. Lecture and laboratory. Lab fee.
- **CSCI-P 536 Advanced Operating Systems (3 cr.)P:** C335 and C343, or honors versions. Advanced topics in operating systems, such as: multitasking, synchronization mechanisms, distributed system architecture, client-server models, distributed mutual exclusion and concurrency control, agreement protocols, load balancing, failure recovery, fault tolerance, cryptography, multiprocessor operating systems.
- **CSCI-P 538 Computer Networks (3 cr.)P:** Operating systems or networking course. Layered TCP/IP architecture. LAN technologies (Ethernet, wireless, token rings). Switching. Internet addressing (IPv4, IPv6). Routing protocols. Congestion control (TCP, UDP). Applications (DNS, HTTP, peer-to-peer networks). Selection of topics including DHCP, ICMP, VPNs, multicast, security. Credit given for only one of P438 and P538.
- **CSCI-P 542 Hardware System Design II (3 cr.)P:** B541 or B441. Depending on instructor, a selection of topics in system-level design, such as simulation, logic synthesis, high-level synthesis, codesign, embedded software, verification, test, requirements specification, and others. Projects in system-level design. Computer-aided design tools. Lecture and laboratory. Program is not currently offering this course.
- **CSCI-P 545 Embedded and Real-Time Systems (3 cr.)P:** Any 400-level "systems" course (middle digit 3 or 4). Design and implementation of purpose-specific, locally distributed software systems. Models and methods for time-critical applications. Real-time operating systems. Testing, validation, and verification. Safety-critical design. Related topics, such as resiliency, synchronization, sensor fusion, etc. Lecture and laboratory.
- **CSCI-P 556 Applied Machine Learning (3 cr.)** The main aim of the course is to provide skills to apply machine learning algorithms on real applications. We will consider fewer learning algorithms and less time on math and theory and instead spend more time on hands-on skills required for algorithms to work on a variety of data sets.
- **CSCI-P 565-566 Software Engineering I-II (3-3 cr.)P:** C343, B461 previously or B561 concurrently. Analysis, design, and implementation of software systems. Requirements specification: data and process modeling. Software design methodologies. Software quality assurance: testing and verification. Software development processes. Program is not currently offering this course.
- **CSCI-P 573 Scientific Computing (3 cr.)P:** MATH M303 or M301, M343, and C212 or H212. For students from all scientific, engineering, and mathematical disciplines, this course provides an overview of computer hardware, software, and numerical methods that are useful on scientific workstations and supercomputers. Topics include high-performance computer architectures, software tools and packages, characteristics of numerical methods in common use, graphical presentation of results, and performance analysis and improvement.
- **CSCI-P 632 Object-Oriented Software Management (3 cr.)P:** Instructor's permission. This course will help turn motivated students into superior managers of any small- to mid-sized commercial or open-source software project. It takes a hands-on, learning-by-doing approach. Students are introduced to the main management concerns of managing smallish design and development teams.
- **CSCI-Y 790 Graduate Independent Study (1-6 cr.)**Independent study under the direction of a faculty member, culminating in a written report. R grade not allowed. The different options for independent study are: Research and Reading, Software System Development, Master's Research Project, Master's Software Project, and a University Master's Thesis. May be repeated for credit.
- **CSCI-Y 798 Professional Practicum/Internship (non-credit) (0 cr.)P:** Current enrollment in graduate degree program in computer science. Provides for participation in graduate-level professional training and internship experience.
- **CSCI-Y 799 Computer Science Colloquium (1 cr.)**A series of talks by researchers in computer science and closely related areas presenting their recent research. A minimum of 75% attendance and course work in the form of a written report based on the talk by any colloquium speaker are required for credit. 3
- **CSCI-Y 890 Thesis Readings and Research (1-12 cr.)**Research under the direction of a member of the graduate faculty leading to a Ph.D. dissertation.

## Counseling and Educational Psychology

### School of Education

Departmental E-mail: [cep@indiana.edu](mailto:cep@indiana.edu)

Department URL: <https://education.indiana.edu/faculty/departments/CEP.html>

Departmental Phone Number: (812) 856-8300

Graduate Studies Office E-Mail: [educate@indiana.edu](mailto:educate@indiana.edu)

School of Education URL: [education.indiana.edu/](https://education.indiana.edu/)

Education Degrees and Programs: [education.indiana.edu/graduate/programs/index.html](https://education.indiana.edu/graduate/programs/index.html)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

The Doctor of Philosophy (Ph.D.) degree is offered through the University Graduate School. In addition, the School of Education offers Certificates, the Master of

Science (M.S.) in Education, the Specialist in Education (Ed.S.), and the Doctor of Education (Ed.D.) degrees. For details, see the School of Education Graduate Bulletin.

### **Doctor of Philosophy Degree** **Fields of Study**

Counseling Psychology; Educational Psychology; Inquiry Methodology; Learning and Developmental Science; and School Psychology.

### **Plan of Studies**

The Ph.D. degree with a major in education is pursued under the direction of a committee appointed by the University Graduate School and the School of Education. As with other Graduate School doctoral programs, a minimum of 90 credit hours of course work is required. This includes a major (selected from the fields of study listed previously), a minor, a series of research courses, and a dissertation. Written and oral qualifying examinations are taken following course work; a final oral defense of the dissertation completes the program. Up to 30 credit hours of graduate course work may be transferred from other universities, with the approval of the advisory committee and the Graduate Studies Office.

### **Admission**

Admission recommendations are made by program area and School of Education admission committees and are based on graduate and undergraduate grades (especially in academic courses), scores on the General Test of the Graduate Record Examination (GRE), and letters of recommendation. The TOEFL examination is required for all international applicants. Online applications may be accessed through the School of Education Office of Graduate Studies Web site at the above URL.

Students earning a Ph.D. degree in education must fulfill all requirements of the University Graduate School (as found in this bulletin) and of the School of Education (as found in the School of Education Graduate Bulletin).

### **Ph.D. in Counseling Psychology**

For more information about this degree, please visit the degree page.

<https://education.indiana.edu/programs/graduate/doctoral/phd-counseling-psychology.html>

### **Degree Requirements (101 cr.)**

#### **Major Requirements (50 cr.)**

These courses must be approved on the Plan of Studies by the student's doctoral advisory committee, Department Chair, and the Associate Dean for Graduate Studies.

#### **Inquiry Requirements (12 cr.)**

The Inquiry Core includes a survey course in research methodologies, and beginning courses in statistics, measurement, program evaluation, or in ethnographic, qualitative, quantitative, and historical research methods. Inquiry Core courses are to lay a rudimentary methodological foundation for applied inquiry courses in the major, and for dissertation research.

#### **Minor Requirements (12 cr.)**

The minor must have integrity in its own right and must complement the major. The minor field must demonstrate wholeness within itself and contribute to the student's overall doctoral program. Minors are normally formulated within a single program area. However, an interdisciplinary or individualized minor is also possible. Interdisciplinary or individualized minors require a written description of the minor's underlying theme along with a rationale for each course's contribution to that theme through the Minor Justification form. This form should be submitted and approved by the Graduate Studies Office prior to enrolling in the minor courses. Courses listed in the Major Requirements cannot be used in the minor. However, other major area courses (i.e., G courses) within the Counseling Psychology program may be used in the minor, with the approval of the Program Director.

### **Program-Required Elective (3 cr.)**

Course will be selected in consultation with Advisory Committee.

### **Additional Psychological Foundations Requirements (6-12 cr.)**

Courses in this area satisfy additional accreditation requirements of the American Psychological Association. Depending on minor selection, up to 6 of these credit hours may be counted towards the minor requirement with approval of advisor and department chair

### **Internship (3 cr.)**

Students must enroll in three credit hours of G699: Internship in Counseling Psychology. Internship must be completed post-Candidacy.

### **Dissertation Requirements (15 cr.)**

795 Dissertation Proposal Preparation (3 cr.)  
799 Doctoral Thesis (12 cr.)

### **Ph.D. in Inquiry Methodology**

For more information about this degree, please visit the degree page.

<https://education.indiana.edu/programs/graduate/doctoral/phd-inquiry-methodology.html>

### **Degree Requirements (90 cr.)**

#### **Major Requirements (39 cr. minimum)**

These courses must be approved on the Plan of Studies by the student's doctoral advisory committee, Department Chair, and the Associate Dean for Graduate Studies. The courses in the major should include:

Inquiry Core Courses (9 cr.)  
Qualitative, Quantitative or Integrated Track (30 cr.)

#### **Minor Requirements (12-18 cr.)**

The minor must have integrity in its own right and must complement the major. The minor field must demonstrate wholeness within itself and contribute to the student's overall doctoral program. Minors are normally formulated within a single program area. However, an interdisciplinary or individualized minor is also possible. Interdisciplinary or individualized minors require a written description of the minor's underlying theme along with a rationale for each course's contribution to that theme through the Minor

Justification form. This form should be submitted and approved by the Graduate Studies Office prior to enrolling in the minor courses.

Students will select a minor field of study to complement their study of inquiry methodology. Because inquiry methodology interfaces with substantive areas of study it is important for students in inquiry methodology to develop understandings in at least one such area so that they grasp the complexity of methodology in use. The minor serves to develop students' substantive area of interest. Major area courses (those within the Inquiry Methodology program) may not be used in the minor.

### **Elective Requirements (6 cr. minimum)**

Educational research is multidisciplinary in nature, and students have a broad range of research interests and career plans which requires flexibility for their programs of studies. The program, therefore, enables students to tailor their electives in consultation with their Advisory Committees.

Electives may be taken in fields inside or outside the School of Education. Students may take electives in any area of interest to complement their program of study.

### **Dissertation Requirements (15 cr.)**

795 Dissertation Proposal Preparation (3 cr.)  
799 Doctoral Thesis (12 cr.)

### **Ph.D. in Learning and Developmental Science-Specialization in Human Development**

For more information about this degree, please visit the degree page.

<https://education.indiana.edu/programs/graduate/doctoral/phd-human-development.html>

### **Degree Requirements (90 cr.)**

#### **Major Requirements (36 cr.)**

These courses must be approved on the Plan of Studies by the student's doctoral advisory committee, Department Chair, and the Associate Dean for Graduate Studies. The courses in the major should include:

Core Courses in the Major (15 cr.)

Students must take 3 courses in development so that each major period of the lifespan is studied (9 cr.)

- Childhood (3 cr.)
- Adolescence (3 cr.)
- Adulthood (3 cr.)

Electives in the Major (12 cr.)

#### **Inquiry Requirements (15 cr.)**

The Inquiry Core includes a survey course in research methodologies, and beginning courses in statistics, measurement, program evaluation, or in ethnographic, qualitative, quantitative, and historical research methods. Inquiry Core courses are to lay a rudimentary methodological foundation for applied inquiry courses in the major, and for dissertation research.

#### **Minor Requirements (12 cr.)**

The minor must have integrity in its own right and must complement the major. The minor field must demonstrate wholeness within itself and contribute to the student's overall doctoral program. Minors are normally formulated within a single program area. However, an interdisciplinary or individualized minor is also possible. Interdisciplinary or individualized minors require a written description of the minor's underlying theme along with a rationale for each course's contribution to that theme through the Minor Justification form. This form should be submitted and approved by the Graduate Studies Office prior to enrolling in the minor courses. Major area courses may not be used in the minor.

### **Elective or Second Minor Requirements (12 cr.)**

#### **Dissertation Requirements (15 cr.)**

795 Dissertation Proposal Preparation (3 cr.)  
799 Doctoral Thesis (12 cr.)

### **Ph.D. in Learning and Developmental Science-Specialization in Learning Sciences**

For more information about this degree, please visit the degree page.

<https://education.indiana.edu/programs/graduate/doctoral/phd-learning-sciences.html>

### **Degree Requirements (90 cr.)**

#### **Major Requirements (36 cr.)**

These courses must be approved on the Plan of Studies by the student's doctoral advisory committee, Department Chair, and the Associate Dean for Graduate Studies. The courses in the major should include:

Core Major Courses (6 cr.)  
Other Learning Sciences courses (12-15 cr.)  
Early Inquiry Experience and Inquiry Linkage (6 cr.)

#### **Inquiry Requirements (15 cr.)**

The Inquiry Core includes a survey course in research methodologies, and beginning courses in statistics, measurement, program evaluation, or in ethnographic, qualitative, quantitative, and historical research methods. Inquiry Core courses are to lay a rudimentary methodological foundation for applied inquiry courses in the major, and for dissertation research.

#### **Minor Requirements (12 cr.)**

The minor must have integrity in its own right and must complement the major. The minor field must demonstrate wholeness within itself and contribute to the student's overall doctoral program. Minors are normally formulated within a single program area. However, an interdisciplinary or individualized minor is also possible. Interdisciplinary or individualized minors require a written description of the minor's underlying theme along with a rationale for each course's contribution to that theme through the Minor Justification form. This form should be submitted and approved by the Graduate Studies Office prior to enrolling in the minor courses. Major area courses may not be used in the minor.

### **Elective Requirements (12 cr.)**



Electives may be taken in fields inside or outside the School of Education. Students may take electives in any area of interest to complement their program of study.

### **Dissertation Requirements (15 cr.)**

795 Dissertation Proposal Preparation (3 cr.)

799 Doctoral Thesis (12 cr.)

### **Ph.D. in School Psychology**

For more information about this degree, please visit the degree page.

<https://education.indiana.edu/programs/graduate/doctoral/phd-school-psychology.html>

### **Degree Requirements (94 cr.)**

#### **Major Requirements (40 cr.)**

These courses must be approved on the Plan of Studies by the student's doctoral advisory committee, Department Chair, and the Associate Dean for Graduate Studies.

P699 Internship in School Psychology must be taken post-candidacy.

#### **Psychological Foundations Requirements (15 cr.)**

Courses in School Psychology, Educational Psychology, and Learning and Developmental Sciences are included. Although not explicitly required, we recommend that students have advanced coursework and practicum in counseling and therapeutic interventions. Many internships sites, psychology licensing boards, and state departments of education require courses and clinical experience in Counseling on an applicant's transcript. The University Graduate School requires at least 90 hours for the Ph.D. degree, but a program is likely to total 100-110 hours, due to student interest in specific courses or areas of study. If you are planning to complete an internship in a clinical setting (e.g., hospital, private practice or mental health center), it is suggested that a course in psychopharmacology be considered as an elective

#### **Inquiry Requirements (12 cr.)**

The Inquiry Core includes a survey course in research methodologies, and beginning courses in statistics, measurement, program evaluation, or in ethnographic, qualitative, quantitative, and historical research methods. Inquiry Core courses are to lay a rudimentary methodological foundation for applied inquiry courses in the major, and for dissertation research.

#### **Minor Requirements (12 cr.)**

The minor must have integrity in its own right and must complement the major. The minor field must demonstrate wholeness within itself and contribute to the student's overall doctoral program. Minors are normally formulated within a single program area. However, an interdisciplinary or individualized minor is also possible. Interdisciplinary or individualized minors require a written description of the minor's underlying theme along with a rationale for each course's contribution to that theme through the Minor Justification form. This form should be submitted and approved by the Graduate Studies Office prior to enrolling in the minor courses.

Most students select counseling for their minor, which provides a foundation for advanced practica and

internships in clinical or school settings. Some students complete a second minor, most often in inquiry or special education. The minor should be selected to prepare for internship and professional positions upon graduation.

### **Elective Requirements (0-6 cr.)**

Electives may be taken in fields inside or outside the School of Education. Students may take electives in any area of interest to complement their program of study.

### **National School Psychology Examination Requirement**

All graduates of the School Psychology doctoral program are required to take and pass the National School Psychology Examination (Praxis II) as a condition for graduation. It is recommended that the examination be taken at the end of the second year of study. The examination must be taken and passed as a partial requirement for nomination to candidacy.

### **Dissertation Requirements (15 cr.)**

795 Dissertation Proposal Preparation (3 cr.)

799 Doctoral Thesis (12 cr.)

### **Ph.D. Minor in Counseling Psychology**

The minor in Counseling Psychology is a 12-credit hour minor designed to meet the needs of PhD students in all areas of the IU School of Education and other degrees on campus.

#### **Minor Requirements (12 cr.)**

Students not majoring in the Ph.D. in School Psychology must take 4 courses in counseling psychology. Courses that may be chosen from:

- G505 Individual Appraisal: Principles and Procedures (3 cr.)
- G510 Introduction to Alcohol and Drug Counseling (3 cr.)
- G522 Counseling Theories (3 cr.)
- G523 Laboratory in Counseling and Guidance (3 cr.)
- G532 Introduction to Group Counseling (3 cr.)
- G542 Organization and Development of Counseling Programs (3 cr.)
- G552 Career Counseling: Theory/Practice (3 cr.)
- G562 School Counseling (3 cr.)
- G567 Introduction to Marriage and Family Counseling (3 cr.)
- G575 Multicultural Counseling (3 cr.)
- G609 Interventions in Performance Psychology (3 cr.)
- G615 Psychopathology and Advanced Diagnosis (3 cr.)
- G622 Advanced Theories of Counseling (3 cr.)
- G632 Advanced Group Leadership (3 cr.)
- G650 Topical Seminar in Counseling Psychology

### **Ph.D. in School Psychology Students**

School psychology students who minor in counseling psychology must take:

- G522 Counseling Theories (3 cr.)
- G523 Laboratory in Counseling and Guidance (3 cr.)
- G542 Organization and Development of Counseling Program (3 cr.) or G562 School Counseling (3 cr.)

### **All Students Minor in Counseling Psychology**

Relevant courses from other departments or programs may be counted as counseling psychology courses at the

discretion of the minor advisor, although no more than one such course may be counted toward the 12 credit minimum.

Students must receive a B or better in all courses to count towards the minor. There is no minor qualifying exam requirement for the Counseling Psychology specialization doctoral minor.

### **Ph.D. Minor in Educational Psychology**

The Minor in Educational Psychology is a 12 credit hour minor designed to meet the needs of PhD students in all areas of the IU School of Education and other degrees on campus. The courses below represent the suggested framework for Educational Psychology Minors and Educational Psychology faculty to develop a minor that meets the goals of the student.

#### **Minor Requirements (12 cr.)**

Possible courses are (but not limited to):

P513 Gerontology: Multidisciplinary Perspectives (3 cr.)  
 P514 Life Span Development: Birth to Death (3 cr.)  
 P515 Child Development (3 cr.)  
 P516 Adolescent Development (3 cr.)  
 P517 Adult Development and Aging (3 cr.)  
 P518 Social Aspects of Aging (3 cr.)  
 P540 Learning and Cognition in Education (3 cr.)  
 P544 Applied Cognition and Learning Strategies (3 cr.)  
 P545 Educational Motivation (3 cr.)  
 P566 Social Psychology in Education (3 cr.)  
 P590 Independent Study or Research in Educational Psychology (3 cr.)  
 P600 Topical Seminar in Learning, Cognition & Instruction (3 cr.)  
 P601 Educational and Historical Foundations of Psychology (3 cr.)  
 P622 Social Development (3 cr.)  
 P623 Child Development (3 cr.)  
 P624 The Biology of Behavior: Implications for Educational & Clinical Practice (3 cr.)  
 P625 Family Processes (3 cr.)  
 P640 Thinking and Learning in Social Contexts (3 cr.)  
 P650 Topical Seminar in Educational Psychology (3 cr.)

The doctoral minor in Educational Psychology does not require a minor qualifying exam.

### **Ph.D. Minor in Gerontology**

The Minor in Gerontology is designed for individuals seeking to expand their knowledge of the field of gerontology during their doctoral coursework. This minor consists of 4 courses in gerontology and a paper/proposal. This interdisciplinary minor in gerontology is offered in partnership with the Human Development Area within the Department of Counseling and Educational in the School of Education and the School of Public Health. Please direct any questions about the minor to Dr. Lesa Huber, the minor faculty advisor at lehuber@indiana.edu.

#### **Minor Requirements (12 cr.)**

Select four courses from the following:

P513 Gerontology: Multidisciplinary Perspectives (3 cr.)

(Students in the Educational Psychology or Learning Sciences Ph.D. programs should sign up for SPH H524 Gerontology: Multidisciplinary Perspectives.)

P517 Adult Development and Aging (3 cr.)

(Students in the Educational Psychology or Learning Sciences Ph.D. programs may not use this course for the gerontology minor.)

P518 Social Aspects of Aging (3 cr.)

(Students in the Educational Psychology or Learning Sciences Ph.D. programs may not use this course for the gerontology minor.)

SPH B535 Contemporary Issues in Aging and Health (3 cr.)

SPH B615 Health, Longevity and Integrative Therapies for the Later Years (3 cr.)

Relevant courses from other departments or programs may be counted as gerontology courses at the discretion of the minor advisor, though no more than one such course may be counted toward the 12 credit minimum.

In lieu of a written qualifying exam, the student will complete an alternate assignment. The alternate assignment may be a paper or a funding proposal either real or simulated. Dr. Lesa Huber, the minor advisor, must approve the alternate assignment.

### **Ph.D. Minor in Human Development**

The Minor in Human Development is a 12 credit hour minor designed to meet the needs of PhD students in all areas of the IU School of Education and other degrees on campus. The courses below represent the suggested framework for Human Development minors.

#### **Minor Requirements (12 cr.)**

At least one MUST be at the 600 level.

These courses may be chosen from:

P513 Gerontology  
 P514 Lifespan Development  
 P515 Child Development  
 P516 Adolescent Development  
 P517 Adult Development  
 P518 Social Aspects of Aging  
 P521 Emerging Adulthood  
 P600 Children's Thinking  
 P622 Social Development  
 P623 Advanced Child Development  
 P624 Biological Bases of Behavior  
 P625 Family Processes and Child/Adolescent Development  
 P652 Family Transitions  
 P683 Developmental Epidemiology

Relevant courses from other departments or programs may be counted as development courses at the discretion of the minor advisor, though no more than one such course may be counted toward the minor.

The doctoral minor in Human Development does not require a minor qualifying exam.

### **Ph.D. Minor in Inquiry Methodology**

The Minor in Inquiry Methodology is a 12 credit hour minor designed to meet the needs of PhD students in all areas of the IU School of Education and other degrees on campus.

A minor in Inquiry Methodology engages in students' thinking through methodological advancements and

challenges relevant to their major fields of study. The minor complements one's core inquiry hours without duplicating those. In other words, a course cannot count as both a core course and a minor course. The minor is constituted of 12 credit hours, of which a maximum of 6 credit hours may be transferred in. The specific coursework for the minor is decided and approved by the minor advisor.

The doctoral minor in Inquiry Methodology does not require a minor qualifying exam.

#### **Ph.D. Minor in Learning Sciences**

The Minor in Learning & Developmental Sciences is a 12 credit hour minor designed to meet the needs of PhD students in all areas of the IU School of Education and other degrees on campus.

#### **Minor Requirements (12 cr.)**

##### **Required Courses (3-6 cr.)**

Choose one or two of the following courses:

P540 Learning and Cognition in Education (3 cr.)  
 P544 Applied Cognition and Learning Strategies (3 cr.)  
 P572 Introduction to the Learning Sciences (or Equivalent) (3 cr.)  
 P640 Learning in Social Contexts (3 cr.)

##### **Foundations of Learning Sciences (6-9 cr.)**

P507 Assessment in Schools (3 cr.)  
 P545 Educational Motivation (3 cr.)  
 P573 Learning Sciences Apprenticeship (1-3 cr.)  
 P574 Topical Seminar in the Learning Sciences (3 cr.)  
 P631 Theorizing Learning in Context (3 cr.)  
 P632 Designing for Learning Context (3 cr.)  
 P633 Capturing Learning in Context (3 cr.)  
 P674 Advanced Topical Seminar in Learning Sciences (3 cr.)

Or other electives approved by the Learning Science Faculty Committee Member

The doctoral minor in Learning Sciences does not require a minor qualifying exam.

#### **Ph.D. Minor in School Psychology**

The Minor in Educational Psychology is a 12 credit hour minor designed to meet the needs of PhD students in all areas of the IU School of Education and other degrees on campus.

#### **Minor Requirements (12 cr.)**

Select four courses from the following:

P650 Topical Seminar in Educational Psychology: Single Subject Research Methodology in Behavioral Sciences (3 cr.)  
 P670 Behavioral Analysis and Consultation for School Psychologists (3 cr.)  
 P680 Ethical, Legal, and Professional Issues in School Psychology (3 cr.)  
 P681 Psychology of Cultural Diversity (3 cr.)  
 P682 Developmental Psychopathology of Childhood and Adolescence (3 cr.)

The doctoral minor in School Psychology does not require a minor qualifying exam.

#### **Ph.D. Minor in Sport and Performance Psychology**

The Minor in Sport and Performance Psychology is a collaborative effort between the Counseling Psychology Program (within the Department of Counseling and Educational Psychology in the School of Education) and the Kinesiology Program (within the School of Public Health). The purpose of this Minor is to provide content specific education and training to graduate students who are interested in pursuing professional interests in fields that require knowledge of performance principles and ways to maximize the potential of performers, both on the field and off the field.

#### **Minor Requirements (12 cr.)**

##### **Required Courses (6 cr.):**

EDUC-G 608/SPH-K 694 Counseling College Student-Athletes (3 cr.)  
 EDUC-G 609/SPH-K 694 Interventions in Performance Psychology (3 cr.)

##### **Select Two Course (6 cr.):**

SPH-M 512 Topics in Kinesiology [Critical Race Theory in Sport] (3 cr.)  
 SPH-M 513 Sports in Higher Education (3cr.)  
 SPH-M 522 Role of Sport in Society (3cr.)  
 SPH-M 525 Psychological Foundations of Exercise and Sport (3 cr.)  
 SPH-K 527 Adherence to Physical Activity (3 cr.)  
 SPH-K 533 Advanced Theories of High-Level Performance (3 cr.)  
 SPH-K 535 Physiological Basis of Human Performance (3 cr.)  
 SPH-K 550 Special Topics in Kinesiology (3 cr.)  
 EDUC-G 650/SPH-K 500 Special Topics Seminar in Counseling Psychology (3 cr.)  
 EDUC-C 750 Special Topics in Higher Education (3 cr.)  
 Other Topical Seminar in Related Fields Will Be Considered for Inclusion

The doctoral minor in Sport and Performance Psychology does not require a minor qualifying exam.

#### **Faculty**

##### **Dean**

Professor Anastasia Morrone

##### **Associate Dean for Graduate Studies**

Professor Sarah Theule Lubienski

##### **Department Chair**

Professor Jessica Lester (Fall 2021)

Professor Y. Joel Wong (Spring 2022)

##### **Graduate Faculty**

Please visit the Faculty Directory on the School of Education website for an updated listing of faculty.

<https://education.indiana.edu/about/directory/index.html?status=Faculty>

## Criminal Justice

### College of Arts and Sciences

**Departmental E-mail:** crimjust@indiana.edu

**Departmental URL:** <https://criminaljustice.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Arts and Doctor of Philosophy

Master of Science (Online)

The department participates in a 100% online Master of Science in Criminal Justice and Public Safety program. For more information, go to <https://online.iu.edu/program/indiana-university-online-criminal-justice-and-public-safety-master-1556037918711>

#### Program Information

The department offers in-residence multidisciplinary graduate degrees in criminal justice that are designed for students coming from a variety of academic backgrounds. Students who complete our programs are prepared for academic positions and research, administrative, and policy careers in the criminal justice system, the civil justice system, and related private sector organizations.

#### Special Departmental Requirements

See also the University Graduate School requirements listed in this Bulletin.

#### Admission Requirements

Admission to the Master's or Ph.D. program is based on a review of the entirety of the applicant's submitted information. In addition to looking for a record that evidences capabilities to engage in graduate study in Criminal Justice at the respective level, admissions are influenced by past academic performance, academic and professional experiences, letters of recommendation, the statement of purpose for pursuing graduate study, and scores on the Graduate Record Examination (verbal, quantitative, and analytic sections).

#### M.A. Course Requirements

The Master of Arts degree requires a total of 36 credit hours beyond the bachelor's degree. Twelve of these hours must include P501 and P502 (Proseminars in Criminal Justice), P594 (Introduction to Research Methods) or an equivalent course approved by the department's Committee on Graduate Studies, and an introduction to statistical methods' course approved by the department's Committee on Graduate Studies. A minimum of 9 additional credit hours of courses from Group A must be taken in the Department of Criminal Justice. Six additional credit hours must consist of P794 (M.A. Thesis) or P599 (Research Practicum), which are paired with the writing of a thesis or a substantial paper respectively. All remaining credit hours can be completed either inside or outside the department. Students already enrolled in the Ph.D. Program who choose to pursue a Master's degree

can petition their Qualifying Examination Committee to use their Qualifying Examination written paper as the Thesis or Substantial Paper when paired with P794 (M.A. Thesis) or P599 (Research Practicum) respectively. It is up to the Qualifying Examination Committee to decide whether the written work is of sufficient quality for either purpose.

#### Ph.D. Course Requirements

The Doctor of Philosophy degree requires a total of 90 credit hours beyond the bachelor's degree. These 90 hours are organized into 5 groups of course requirements. Courses used in one group cannot be used to satisfy the requirements of any other group.

**Group 1:** 18 hours are required that include P501 and P502 (Proseminars in Criminal Justice), P594 (Introduction to Research Methods) or an equivalent course approved by the department's Committee on Graduate Studies, an introduction to statistical methods' course approved by the department's Committee on Graduate Studies, an advanced statistical methods course or a qualitative methods course approved by the department's Committee on Graduate Studies, and a 3 credit hour course approved by the student's Graduate Advisory Committee that serves as an additional research tool for the student's chosen focus in the program

**Group 2:** 30 hours of courses are required to be from within the department. At least 9 credit hours of the 30 hours must come from the "Courses-Group A" listing or an equivalent course within the department's "Courses-Group B" listing that is approved by the department's Committee on Graduate Studies. Finally, up to 21 of the 30 credit hours can be from another department or transferred in from another graduate program with the approval of the student's Graduate Advisory Committee.

**Group 3:** students must have a Minor area from outside the department that meets the requirements of the Minor program. A minor typically requires an additional 12 hours of courses in the Minor area.

**Group 4:** a minimum of 18 dissertation credit hours are required.

**Group 5:** Up to 12 hours of other electives courses from inside or outside the department are permitted to satisfy the minimum of 90 hours of course work needed, subject to the approval of the student's Graduate Advisory Committee.

#### Qualifying Examination

All doctoral students are expected to demonstrate basic proficiency by passing a qualifying examination following completion of required courses. This written examination may take a variety of forms and must demonstrate the student's ability to successfully engage in dissertation research. An oral defense is required. The written exam and the oral defense are evaluated as a combined effort.

#### Dissertation Proposal

Dissertation proposals can be submitted only after the successful completion of the Qualifying Examination. An oral defense of the dissertation proposal is required.

#### Final Ph.D. Examination

Oral defense of the dissertation is required.



### Ph.D. Minor in Criminal Justice

Students from other departments or schools who want to minor in Criminal Justice should consult with the Director of Graduate Studies on the selection of a faculty advisor or advisors. At least 12 credit hours of department courses are required.

### Faculty

An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations

### Chairperson

Marla Rita Sandys\*, Associate Professor

### Professors

Ellen Dwyer\* (Emerita, History), Roger J. R. Levesque\*, Richard Lippke\*, Harold E. Pepinsky\* (Emeritus), Leon E. Pettitway\* (Emeritus), Bruce D. Sales\*, Kip Schlegel\*, Arvind Verma\*

### Associate Professors

Jonathan Brauer\*, Natalie Kroovand Hipple\*, Mary Lee Luskin\* (Emerita), Miriam Northcutt Bohmert\*, William Oliver (Emeritus), Steve Russell\* (Emeritus), Marla Rita Sandys\*,

### Assistant Professors

Tri Keah Henry

### Director of Graduate Studies

Bruce D. Sales, Sycamore Hall 341,  
bdsales@indiana.edu; (812) 856-1324

### Courses

#### Courses-Group A

- CJUS-P 501 Proseminar: Criminal Justice I (3 cr.) Intensive introduction to the basic areas of criminal justice.
- CJUS-P 502 Proseminar: Criminal Justice II (3 cr.) Intensive introduction to theories of crime and delinquency.
- CJUS-P 512 Corrections (3 cr.) Reviews historical and philosophical bases of the correctional system and examines its components (community corrections, jails, and prisons). Focuses on the structure and functions of the correctional system with particular attention to the role of broader social forces on the development and operation of the system.
- CJUS-P 515 Police in Society (3 cr.) Covers the bases and impacts of recent changes in U.S. policing, particularly with respect to community-oriented policing. Changes are analyzed in terms of the organizational and political contexts in which they occur as well as from historical and cross-cultural perspectives.
- CJUS-P 517 Juvenile Justice (3 cr.) Examines the historical development of the juvenile justice system, the tradition of reform, underlying ideologies, and current debates.
- CJUS-P 519 Probation and Parole (3 cr.) Primary emphasis on the development and evaluation of probation, parole, and other systems of community corrections. Examines the theoretical and empirical underpinnings of community programs for offenders, and their policy implications.
- CJUS-P 602 Courts and Criminal Justice (3 cr.) Addresses the nature and operation of courts with respect to criminal cases: structure and administration of courts; recruitment and selection of major participants; and specific decisions in the processing of criminal cases, including the decision to charge, pretrial release, trials, plea bargains, and criminal appeals.
- CJUS-P 610 Law and Society (3 cr.) Study of the interaction between social forces and legal processes, focusing on the question of what shapes the law. Subareas to be examined include the courts, sentencing, police, crime, deviance, and community-based justice. Emphasis on the links between crime-related behavior as defined by the law, its social and cultural environments, and the individual.
- CJUS-P 619 Crime and Public Policy (3 cr.) Examines processes by which societies define crime and develop responses to crime. Particular attention is given to case studies of how particular policies were developed and implemented, and what effects these policies produced.
- CJUS-P 622 Criminal Careers (3 cr.) A small number of career criminals commit the majority of serious crimes. Seminar explores the major personal and typological dimensions of such criminals by exposing the student to the commonalities among diverse forms of criminal activity and the implications for crime theory development and crime control policies.
- CJUS-P 623 Violent Behavior (3 cr.) Critical analysis of current theory and research on violent behavior utilizing a multidisciplinary framework. Topics include concepts and methods in the study of violence, prediction of violence, family and sexual violence, institutional violence, drugs and violence, and prevention of violent behavior.
- CJUS-P 627 White-Collar Crime (3 cr.) Examines the data and research related to white-collar crime to understand issues of causation and social control of this particular form of crime. Places white-collar crime within the context of general theories of crime, and compares and contrasts the various legal mechanisms (civil, administrative, and criminal) available to control it.
- CJUS-P 629 Victimization (3 cr.) Covers current theory, research, and measurement issues concerning the nature, extent, causes, and effects of criminal victimization; evaluations of programs for crime victims; and political and ideological differences among varying views of victim rights.
- CJUS-P 633 Dispute Settlement (3 cr.) Examines the legal, social, and cultural factors that influence the development and use of diverse dispute settlement processes in Criminal Justice.
- CJUS-P 634 Sentencing Theory and Practice (3 cr.) Examines the theoretical and practical issues relating to the sentencing of criminals. In particular, it focuses on the aims of punishment and the



construction of sentencing models and alternatives designed to achieve these aims.

- CJUS-P 637 Community, Crime, and Criminal Justice (3 cr.) Examines the role of community structure and function in the distribution of crime and the formal and informal responses to crime.
- CJUS-P 639 History of Criminal Justice in the U.S. (3 cr.) Examines the development of the American criminal justice system, with particular attention to courts, prisons, and the police. Examines how definitions of deviance and criminality have changed over time and the ways class, gender, and race have shaped law and justice.
- CJUS-P 670 Cross-Cultural Studies (3 cr.) Examines the significance of cross-cultural research to criminology/criminal justice, research practices, and problems, with emphasis on analysis of field experiences and findings.
- CJUS-P 671 Comparative Justice Systems (3 cr.) Engages students in comparative issues and research to reveal political, historical, and cultural factors that have influenced criminal justice and law in the United States. Develops student abilities to conceptualize crime and law without using official legal concepts for purposes of comparative social scientific research.
- CJUS-P 672 Ideas about Justice (3 cr.) Explores a school or related schools of thought and practice about what "justice" means and requires. Special topics for the course may vary, focusing for example, on feminist justice, "just desserts" theory, restorative justice, retributive justice, or utilitarian justice. May be repeated for credit.
- CJUS-P 675 Women and Crime (3 cr.) Provides a flexible forum for the discussion of a previously neglected topic in criminology/criminal justice: women and crime. Includes discussion and debate on the nature and extent of women's criminality, processing of women through each step of the criminal justice system, and women working in criminal justice.
- CJUS-P 680 Seminar: Issues in Criminal Justice (3 cr.) Selected topics in criminal justice that will vary from semester to semester. May be repeated for credit.
- CJUS-P 682 Seminar on Law Enforcement and Minorities (3 cr.) Examines different issues of race and ethnicity as they relate to crime and the criminal justice system. Topics include racial and ethnic disparities related to law enforcement and sentencing and policy implications related to policing, probation, pre-sentencing and post-release issues.

### Courses-Group B

- CJUS-P 594 Introduction to Research Methods (3 cr.) Research methodology in criminal justice. Research design, scientific methods, quantitative/qualitative applications, ethical questions, and the role of the criminal justice researcher.
- CJUS-P 595 Data Analysis in Criminal Justice I (3 cr.) Data analysis applied to criminal justice data, including measurement, tables, graphs, probability, nonparametric statistics, matrix algebra, correlation and regression, and tests of significance.

- CJUS-P 596 Data Analysis in Criminal Justice II (3 cr.) Advanced topics in data analysis.
- CJUS-P 599 Research Practicum (1-6 cr.) Designed to provide guided experience in conducting research independently. The topic and scope of the student's effort must be approved in advance by the professor.
- CJUS-P 694 Research in Criminal Justice (3 - 6 cr.) Individual study project under the guidance of a faculty member or a committee. May be repeated once for a maximum of 6 credit hours. The student is expected to make substantial progress toward the identification and/or completion of an eventual Master's project. This course is eligible for a deferred grade.
- CJUS-P 751 Topical Research Seminar (3-12 cr.) Students are expected to demonstrate their skills in research design and data analysis on a topic agreed-upon with the instructor. The instructor may encourage team research for appropriate designs and topics. Students are encouraged to develop topics related to dissertation research.
- CJUS-P 794 M.A. Thesis (6 cr.) This course is eligible for a deferred grade.
- CJUS-P 851 Reading in Criminal Justice (1-6 cr.) Individualized readings on topics not covered in regular course offerings. This course is eligible for a deferred grade.
- CJUS-P 855 Research in Criminal Justice (1-6 cr.) Graduate standing in criminal justice or consent of instructor. This course is eligible for a deferred grade. The student is expected to make substantial progress toward the identification of an eventual dissertation project. This course is eligible for a deferred grade.
- CJUS-P 859 Ph.D. Thesis (arr.-30 cr.) This course is eligible for a deferred grade.
- CJUS-G 901 Advanced Research (1 cr.) To enroll, students must have completed 90 credit hours and all graduate degree requirements except for the dissertation. Six semesters max. This course is eligible for a deferred grade.

## Bulletins

### Center for Theoretical Inquiry in the Humanities College of Arts & Sciences

Director: Michel Chaouli, Ballantine Hall 660,  
812-855-8847, chaouli@indiana.edu

### Curriculum

#### Ph.D. Minor in Critical Theory

The minor in Critical Theory is open to all students. To receive a minor, students must earn a minimum of 12 credit hours in graduate courses. At least six credit hours must be earned by enrolling in Center courses (CTIHT500 or CTIH-T600); credit from independent study ordinarily does not satisfy this requirement. The remaining credit hours may be earned by enrolling in Center courses (with a maximum of three credit hours of CTIHT700) or in departmental courses, which must be approved ad hoc by the director.

### Grades

Courses in which a student receives less than a B will not count toward the minor.

## Faculty

### Professors

Jonathan Elmer (English), Mary Favret (English), Joshua Kates (English), Herbert Marks (Comparative Literature), Andrew Miller (English), Richard Miller (Religious Studies), William Rasch (Germanic Studies).

### Associate Professors

Akinwumi Adesokan (Comparative Literature), Hall Bjørnstad (French & Italian), Michel Chaouli (Germanic Studies), Patrick Dove (Spanish & Portuguese), Jennifer Fleissner (English), Constance Furey (Religious Studies), Ilana Gershon (Communication & Culture), Edgar Illas (Spanish & Portuguese), Patricia Clare Ingham (English), Oana Pana1te (French & Italian), Eyal Peretz (Comparative Literature), Benjamin Robinson (Germanic Studies), Sandra Shapshay (Philosophy), Jon Simons (Communication & Culture), Johannes Tiirk (Germanic Studies).

### Assistant Professors

Jacob Emery (Comparative Literature), Jeffrey Saletnik (Fine Arts), Rebekah Sheldon (English), Sonia Velazquez (Theater Studies).

## Courses

Departmental courses that may count towards the minor (the list is not exhaustive; students should consult the website of the Center for Theoretical Inquiry in the Humanities and/or its director for other relevant courses):

### Communication and Culture

C503 Introduction to Media Theory and Aesthetics

### Comparative Literature

CMLT-C 501 Introduction to Contemporary Literary Studies  
CMLT-C 503 Topics in World Criticism and Theory I  
CMLT-C 504 Topics in World Criticism and Theory II  
CMLT-C 602 Contemporary Theoretical Issues and Approaches  
CMLT-C 644 Literary Studies and Psychoanalysis  
CMLT-C 647 Literary Studies and Philosophy

### Cultural Studies

CULS-C 601 Introduction to Cultural Studies  
CULS-C 701 Special Topics in Cultural Studies

### English

ENG-L 605 Critical and Interpretive Theory  
ENG-L 657 Readings in Literature and Critical Theory  
ENG-L 663 Readings in Feminist, Gender, and Sexuality Studies  
ENG-L 680 Special Topics in Literary Study and Theory  
ENG-L 700 Topics in Feminist Critical Studies  
ENG-L 707 Studies in Literary Theory and Criticism  
ENG-L 764 Research in Literature and Critical Theory

### Fine Arts

FINA-A 471 Theory and Methods of Interarts Studies  
FINA-A 472 Art Theory II  
FINA-A 473 Art Theory III  
FINA-A 474 Art Theory IV  
FINA-A 671 Problems in Art Theory I  
FINA-A 672 Problems in Art Theory II  
FINA-A 673 Problems in Art Theory III  
FINA-A 674 Problems in Art Theory IV

### French and Italian

FRIT-F 647 Contemporary French Theory and Criticism

### Gender Studies

GNDR-G 603 Feminist Theories  
GNDR-G 598 Feminist Theory: Classic Texts and Founding Debates  
GNDR-G 602 Gender Dimensions of Cultural Production and Criticism

### Germanic Studies

GER-G 505 New Literary Theory and the German Text  
GER-G 563 New Literary Theory and the German Text

### Political Science

POLS-Y 381 Classical Political Thought  
POLS-Y 382 Modern Political Thought  
POLS-Y 689 Readings in Political Theory and Methodology  
POLS-Y 775 Political Philosophy

### Slavic Languages and Literatures

SLAV-R 598 Literary Theory in its Russian and East European Context  
SLA V-L 599 Prague School Linguistics and Poetics

### Spanish and Portuguese

HISP-S 512 Theory and Criticism

## Critical Theory Courses

**CTIH-T 500 Introduction to the Theoretical Foundations of the Humanities (3 cr.)**

**CTIH-T 600 Special Topic in Critical Theory (3 cr.)** (May be repeated for credit with different content)

**CTIH-T 700 Independent Study in Critical Theory (3 cr.)** (May be repeated for credit with different content)

## Cultural Studies

### College of Arts and Sciences

Departmental E-mail: [cstudies@indiana.edu](mailto:cstudies@indiana.edu)

Departmental URL: <https://cstudies.indiana.edu>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Ph.D. Minor in Cultural Studies

Cultural Studies is a multidisciplinary program primarily applicable to the humanities and social sciences. Drawing upon recent developments in cultural, social, and literary

theory, this program emphasizes the investigation of cultural production and the social construction of values, ideas, and belief systems. Focusing on both contemporary and historical phenomena, courses in this area pay particular attention to the relationship between cultural forms and power relations in society. Issues of class, race, and gender receive prominent critical attention, as do conventional divisions between "high culture" and more "popular" forms of expression. Students in this program are encouraged to fashion a course of study that meets their particular interests and needs. Cultural Studies is especially useful for those seeking to complement studies in an area of disciplinary specialization with a more interdisciplinary minor.

### Course Requirements

Four courses for a minimum of 13 hours of credit in courses approved for the Cultural Studies Program, including C601 and either C701 or C790. The remaining hours are mostly satisfied by taking classes that are cross-listed with the home department of the designated instructor. Students must officially declare the minor during the early phase of their Ph.D. studies by consulting with the director of the Cultural Studies Program.

### Examinations

Satisfactory performance on the qualifying examinations in the student's major department required.

### Faculty

#### Director

Raiford Guins\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Distinguished Professors

Richard Bauman\* (Emeritus, Folklore, Communication and Culture), Patrick Brantlinger\* (Emeritus, English), David P. Thelen\* (Emeritus, History), Richard Wilk\* (Distinguished Emeritus, Anthropology)

#### Chancellor's Professors

John Bodnar\* (History), James Naremore\* (Emeritus, English, Communication and Culture)

#### Emeritus Professors

Donna Eder\* (Emeritus, Sociology), Thomas F. Gieryn\* (Emeritus, Sociology), Robert Ivie\* (Emeritus, English and American Studies), Barbara G. Klinger\* (Emeritus, Communication and Culture), John Lucaites\* (English), Richard Nash\* (English), David Pace\* (Emeritus, History), Michael Robinson\* (Emeritus, East Asian Languages and Culture), Beverly Stoeltje\* (Emeritus, Folklore, Anthropology)

#### Emeritus Associate Professors

Angela Pao\* (Comparative Literature), Rakesh H. Solomon\* (Emeritus, Theatre, Drama, and Contemporary Dance)

#### Professors

Maria Bucur-Deckard\* (History), Joe#lle Bahloul\* (Anthropology, Jewish Studies), Linda Charnes\* (English), Nicholas Cullather\* (History), Jonathan Elmer\* (English), Jeffrey Gould\* (History), Raiford Guins\* (The Media School), Vivian Halloran\* (American Studies, English), Scott Herring\* (English), Jason Baird Jackson\* (Folklore and Ethnomusicology), Daniel James\* (History), Marianne Kielian-Gilbert\* (Music), Radhika Parameswaran\* (The Media School), William Rasch\* (Germanic Studies), Michael Robinson\* (East Asian Languages and Cultures), Bret Rothstein\* (Art History), Darlene Sadlier\* (Spanish and Portuguese), Eric Sandweiss\* (History), Micol Seigel\* (American Studies, History), Shane Vogel\* (English), Stephen Watt\* (English), Brenda Weber\* (Gender Studies), Marc A. Weiner\* (Germanic Studies), David R. Zaret\* (Sociology)

#### Associate Professors

Akin Adesokan\* (Comparative Literature), Paul Anderson\* (American Studies), John Arthos\* (English), Purnima Bose\* (English), Vincent Bouchard\* (French), Stephanie DeBoer (Cinema and Media Studies), Michael Dodson\* (History), Patrick Dove\* (Spanish and Portuguese), Phill Ford\* (Music), Michael Foster\* (Folklore and Ethnomusicology, East Asian Languages and Cultures), Lessie Jo Frazier\* (American Studies, Gender Studies), Sara L. Friedman\* (Anthropology, Gender Studies), Jennifer Goodlander\* (Comparative Literature), Jane E. Goodman\* (Anthropology), Margaret Gray\* (French and Italian), R. Andrés Guzmán\* (Spanish and Portuguese), Joan Hawkins\* (Cinema and Media Studies), Karen Inouye\* (American Studies), Stephanie Kane\* (Criminal Justice), DeWitt D. Kilgore\* (English), Rebecca Lave\* (Geology), Susan Lepselter (Anthropology), David A. McDonald (Folklore and Ethnomusicology), Jason McGraw (American Studies, History), Alejandro Mejias-Lopez\* (Spanish and Portuguese), Marissa Moorman\* (History), Michelle Moyd\* (History), Walton Muyumba\* (English), Scott O'Bryan (History, East Asian Languages and Cultures), Philip Parnell\* (International Studies), Benjamin Robinson\* (Germanic Studies), Ranu Samantrai\* (English), Steven Selka (American Studies, Religious Studies), Rebekah Sheldon\* (English), Marvin Sterling\* (Anthropology)

#### Assistant Professors

Ishan Ashutosh\* (Geography), Marika Cifor\* (Information and Library Sciences), Freda Fair\* (Gender Studies), Faye Gleisser\* (Art History), Ryan Powell\* (The Media School), Olimpia Rosenthal\* (Spanish and Portuguese), Freya Thimson\* (English)

### Courses

#### CULS-C 601 Introduction to Cultural Studies (4 cr.)

Survey of main issues, theories, and methods in cultural studies. Topics may include communications and mass culture; gender, race, and the social construction of identity; historiographic and ethnographic approaches to modern cultures and societies.

#### CULS-C 701 Special Topics in Cultural Studies

(3-4 cr.) P: C601 or consent of instructor. Advanced exploration of a specific issue in cultural studies (for example, "avant-garde" movements in politics and the arts in relation to social and cultural modernity).

**CULS-C 790 Independent Readings in Cultural Studies (1-6 cr.)** P: Consent of the instructor. Open only to students completing minors in cultural studies.

## Curatorship

**College of Arts and Sciences; Luddy School of Informatics, Computing, and Engineering; O'Neill School of Public and Environmental Affairs; University Graduate School**

**Departmental E-mail:** [curator@indiana.edu](mailto:curator@indiana.edu)

**Departmental URL:** <https://curatorship.iu.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

Curriculum

#### Degrees Offered

The Master of Arts (M.A.) in Curatorship is offered in collaboration between the College of Arts and Sciences; Luddy School of Informatics, Computing, and Engineering; O'Neill School of Public and Environmental Affairs; and University Graduate School.

#### Master of Arts in Curatorship Requirements

30 credit hours in graduate-level work.

Students will complete their choice of any three of the following four core options:

- Curatorship: FOLK-F 731 Curatorship; or SPEA Y506 Curatorship (3 credits)
- Collections History and Theory: HIST-H575 Museum History (3 credits)
- Museum Exhibitions: FOLK-F730 Museums and Material Culture; OR ARTH-A691 Curating Museum Displays and Exhibitions (3 credits)
- Representation and Organization: ILS Z503 Representation and Organization (3 credits)

Students will also complete:

**Disciplinary Core:** 6 credits of additional graduate work in a chosen museum- or gallery-relevant department or program. One of these courses will be a "core" course required of graduate students in this department or program; another can be any standard (non-individual readings, non-practicum) graduate course offered in this unit.

**Electives:** 6 credits of museum-relevant electives to be selected in consultation with the Program Director.

**Practicum:** 6 credits of practicum or internship course experience in a relevant campus or community museum or collection. These credits can be taken using any of the available museum practicum courses available in units on campus (e.g., AADM-Y 750, ANTH-A 576, FOLK-F 806, HISTH 543).

**Capstone:** Using relevant graduate courses suitable for independent projects (ex: ARTH-A 775, AMST-G 753, FOLK-F 800, ILS-Z 602), students will conclude

their program of study with a 3-credit capstone project pursued in partnership with a campus or other museum or collection. The capstone project may be an exhibition, a collections research study, or other curatorial activity approved by the Program Director or a designated faculty member. Programs of study will be discussed with the Program Director or another faculty designee and approved each semester prior to registration.

## Curriculum and Instruction

### School of Education

**Departmental E-mail:** [curric@indiana.edu](mailto:curric@indiana.edu)

**Department URL:** <https://education.indiana.edu/faculty/departments/CI.html>

**Departmental Phone Number:** (812) 856-8100

**Graduate Studies Office E-Mail:** [educate@indiana.edu](mailto:educate@indiana.edu)

**School of Education URL:** [education.indiana.edu/](https://education.indiana.edu/)

**Degrees and Programs:** [education.indiana.edu/graduate/programs/index.html](https://education.indiana.edu/graduate/programs/index.html)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

The Doctor of Philosophy (Ph.D.) degree is offered through the University Graduate School. In addition, the School of Education offers Certificates, the Master of Science (M.S.) in Education, the Specialist in Education (Ed.S.), and the Doctor of Education (Ed.D.) degrees. For details, see the School of Education Graduate Bulletin.

#### Doctor of Philosophy Degree Fields of Study

Curriculum and Instruction; Literacy, Culture, and Language Education; and Special Education.

#### Plan of Studies

The Ph.D. degree with a major in education is pursued under the direction of a committee appointed by the University Graduate School and the School of Education. As with other Graduate School doctoral programs, a minimum of 90 credit hours of course work is required. This includes a major (selected from the fields of study listed previously), a minor, a series of research courses, and a dissertation. Written and oral qualifying examinations are taken following course work; a final oral defense of the dissertation completes the program. Up to 30 credit hours of graduate course work may be transferred from other universities, with the approval of the advisory committee and the Graduate Studies Office.

#### Admission

Admission recommendations are made by program area and School of Education admission committees and are based on graduate and undergraduate grades (especially in academic courses), scores on the General Test of the Graduate Record Examination (GRE), and letters of recommendation. The TOEFL examination is required for all international applicants. Online applications may



be accessed through the School of Education Office of Graduate Studies Web site at the above URL.

Students earning a Ph.D. degree in education must fulfill all requirements of the University Graduate School (as found in this bulletin) and of the School of Education (as found in the School of Education Graduate Bulletin).

### **Ph.D. in Curriculum and Instruction-Specialization in Art Education**

#### **Degree Requirements (90 cr.)**

For more information about this degree, please visit the degree page.

<https://education.indiana.edu/programs/graduate/doctoral/phd-art-education.html>

#### **Major Requirements (36 cr.)**

These courses must be approved on the Plan of Studies by the student's doctoral advisory committee, Department Chair, and the Associate Dean for Graduate Studies. The courses in the major should include:

Specialization (30 cr.)  
Early Inquiry Experience and Inquiry Linkage Requirements (6 cr.)

#### **Inquiry Requirements (9-15 cr.)**

The Inquiry Core includes a survey course in research methodologies, and beginning courses in statistics, measurement, program evaluation, or in ethnographic, qualitative, quantitative, and historical research methods. Inquiry Core courses are to lay a rudimentary methodological foundation for applied inquiry courses in the major, and for dissertation research.

#### **Minor Requirements (12 cr.)**

The minor must have integrity in its own right and must complement the major. The minor field must demonstrate wholeness within itself and contribute to the student's overall doctoral program. Minors are normally formulated within a single program area. However, an interdisciplinary or individualized minor is also possible. Interdisciplinary or individualized minors require a written description of the minor's underlying theme along with a rationale for each course's contribution to that theme through the Minor Justification form. This form should be submitted and approved by the Graduate Studies Office prior to enrolling in the minor courses.

#### **Elective Requirements (6-18 cr.)**

A minimum of 6 elective credits must be taken outside the major and the minor. An additional elective may be selected from within the major, the minor, inquiry, or any broad field of study.

#### **Dissertation Requirements (15 cr.)**

795 Dissertation Proposal Preparation (3 cr.)  
799 Dissertation Thesis (12 cr.)

### **Ph.D. in Curriculum and Instruction-Specialization in Teacher Education and Curriculum Studies**

For more information about this degree, please visit the degree page.

<https://education.indiana.edu/programs/graduate/doctoral/phd-curriculum-studies.html>

#### **Degree Requirements (90 cr.)**

#### **Major Requirements (36 cr.)**

These courses must be approved on the Plan of Studies by the student's doctoral advisory committee, Department Chair, and the Associate Dean for Graduate Studies. The courses in the major should include:

Core Major Courses (24 cr.)  
Department Seminar (6 cr.)  
Early Inquiry Experience and Inquiry Linkage Requirements (6 cr.)

#### **Inquiry Requirements (9 cr.)**

The Inquiry Core includes a survey course in research methodologies, and beginning courses in statistics, measurement, program evaluation, or in ethnographic, qualitative, quantitative, and historical research methods. Inquiry Core courses are to lay a rudimentary methodological foundation for applied inquiry courses in the major, and for dissertation research.

#### **Minor Requirements (12 cr.)**

The minor must have integrity in its own right and must complement the major. The minor field must demonstrate wholeness within itself and contribute to the student's overall doctoral program. Minors are normally formulated within a single program area. However, an interdisciplinary or individualized minor is also possible. Interdisciplinary or individualized minors require a written description of the minor's underlying theme along with a rationale for each course's contribution to that theme through the Minor Justification form. This form should be submitted and approved by the Graduate Studies Office prior to enrolling in the minor courses.

#### **Elective Requirements (6-18 cr.)**

A minimum of 6 elective credits must be taken outside the major and the minor. An additional elective may be selected from within the major, the minor, inquiry, or any broad field of study.

#### **Dissertation Requirements (15 cr.)**

795 Dissertation Proposal Preparation (3 cr.)  
799 Dissertation Thesis (12 cr.)

### **Ph.D. in Curriculum and Instruction-Specialization in Mathematics Education**

For more information about this degree, please visit the degree page.

<https://education.indiana.edu/programs/graduate/doctoral/phd-mathematics-education.html>

#### **Degree Requirements (90 cr.)**

#### **Major Requirements (36 cr.)**

These courses must be approved on the Plan of Studies by the student's doctoral advisory committee, Department Chair, and the Associate Dean for Graduate Studies. The courses in the major should include:

Specialization (9 cr.)  
Department Seminar (21 cr.)



Early Inquiry Experience and Inquiry Linkage Requirements (6 cr.)

### **Inquiry Requirements (9 cr.)**

The Inquiry Core includes a survey course in research methodologies, and beginning courses in statistics, measurement, program evaluation, or in ethnographic, qualitative, quantitative, and historical research methods. Inquiry Core courses are to lay a rudimentary methodological foundation for applied inquiry courses in the major, and for dissertation research.

### **Minor Requirements (12 cr.)**

The minor must have integrity in its own right and must complement the major. The minor field must demonstrate wholeness within itself and contribute to the student's overall doctoral program. Minors are normally formulated within a single program area. However, an interdisciplinary or individualized minor is also possible. Interdisciplinary or individualized minors require a written description of the minor's underlying theme along with a rationale for each course's contribution to that theme through the Minor Justification form. This form should be submitted and approved by the Graduate Studies Office prior to enrolling in the minor courses.

### **Elective Requirements (6-18 cr.)**

A minimum of 6 elective credits must be taken outside the major and the minor. An additional elective may be selected from within the major, the minor, inquiry, or any broad field of study.

### **Dissertation Requirements (15 cr.)**

795 Dissertation Proposal Preparation (3 cr.)  
799 Dissertation Thesis (12 cr.)

### **Ph.D. in Curriculum and Instruction-Specialization in Science Education**

For more information about this degree, please visit the degree page.

<https://education.indiana.edu/programs/graduate/doctoral/phd-science-education.html>

### **Degree Requirements (90 cr.)**

### **Major Requirements (39 cr.)**

These courses must be approved on the Plan of Studies by the student's doctoral advisory committee, Department Chair, and the Associate Dean for Graduate Studies. The courses in the major should include:

- Science Education (12 cr.)
- Science Methods (6 cr.)
- Content Support -Graduate Level Science Courses (12 cr.)
- Proseminars (3 cr.)
- Early Inquiry Experience and Inquiry Linkage Requirements (6 cr.)

### **Inquiry Requirements (15 cr.)**

The Inquiry Core includes a survey course in research methodologies, and beginning courses in statistics, measurement, program evaluation, or in ethnographic, qualitative, quantitative, and historical research methods. Inquiry Core courses are to lay a rudimentary

methodological foundation for applied inquiry courses in the major, and for dissertation research.

### **Minor Requirements (12 cr.)**

The minor must have integrity in its own right and must complement the major. The minor field must demonstrate wholeness within itself and contribute to the student's overall doctoral program. Minors are normally formulated within a single program area. However, an interdisciplinary or individualized minor is also possible. Interdisciplinary or individualized minors require a written description of the minor's underlying theme along with a rationale for each course's contribution to that theme through the Minor Justification form. This form should be submitted and approved by the Graduate Studies Office prior to enrolling in the minor courses.

### **Elective Requirements (12 cr.)**

Selected in consultation with advisory committee. Elective courses are chosen to fill out the major and to contribute to the integrity of the student's program. These courses are taken in the student's area of interest, within or outside the department, in order to fulfill the total program requirement of 90 credit hours.

### **Dissertation Requirements (15 cr.)**

795 Dissertation Proposal Preparation (3 cr.)  
799 Dissertation Thesis (12 cr.)

### **Ph.D. in Literacy, Culture, and Language Education Degree Requirements (90 cr.)**

### **Major Requirements (36 cr.)**

These courses must be approved on the Plan of Studies by the student's doctoral advisory committee, Department Chair, and the Associate Dean for Graduate Studies. The courses in the major should include:

Literacy, Culture, and Language Education Core (15 cr.)  
Required Inquiry Courses in the Major (6 cr.)  
Additional courses in Literacy, Culture, and Language Education (15 cr.)

### **Inquiry Requirements (12 cr.)**

The Inquiry Core includes a survey course in research methodologies, and beginning courses in statistics, measurement, program evaluation, or in ethnographic, qualitative, quantitative, and historical research methods. Inquiry Core courses are to lay a rudimentary methodological foundation for applied inquiry courses in the major, and for dissertation research

### **Minor Requirements (12 credits)**

The minor must have integrity in its own right and must complement the major. The minor field must demonstrate wholeness within itself and contribute to the student's overall doctoral program. Minors are normally formulated within a single program area. However, an interdisciplinary or individualized minor is also possible. Interdisciplinary or individualized minors require a written description of the minor's underlying theme along with a rationale for each course's contribution to that theme through the Minor Justification form. This form should be submitted and approved by the Graduate Studies Office prior to enrolling

in the minor courses. Major area courses may not be used in the minor.

### **Elective or Second Minor Requirements (6-18 credits)**

Elective courses must be relevant to the student's Plan of Studies and approved by the student's doctoral advisory committee, Department Chair, and the Associate Dean for Graduate Studies.

### **Dissertation Requirements (15 credits)**

795 Dissertation Proposal Preparation (3 cr.)

799 Dissertation Thesis (12 cr.)

### **Ph.D. in Special Education**

For more information about this degree, please visit the degree page.

<https://education.indiana.edu/programs/graduate/doctoral/phd-special-education.html>

### **Degree Requirements (90 cr.)**

#### **Major Requirements (36 cr.)**

These courses must be approved on the Plan of Studies by the student's doctoral advisory committee, Department Chair, and the Associate Dean for Graduate Studies. The courses in the major should include:

Special Education Core (24 cr.)

Fundamental Theoretical Constructs (12 cr.)

#### **Inquiry Core Requirements (15 cr.)**

The Inquiry Core includes a survey course in research methodologies, and beginning courses in statistics, measurement, program evaluation, or in ethnographic, qualitative, quantitative, and historical research methods. Inquiry Core courses are to lay a rudimentary methodological foundation for applied inquiry courses in the major, and for dissertation research.

#### **Minor Requirements (12 cr.)**

The minor must have integrity in its own right and must complement the major. The minor field must demonstrate wholeness within itself and contribute to the student's overall doctoral program. Minors are normally formulated within a single program area. However, an interdisciplinary or individualized minor is also possible. Interdisciplinary or individualized minors require a written description of the minor's underlying theme along with a rationale for each course's contribution to that theme through the Minor Justification form. This form should be submitted and approved by the Graduate Studies Office prior to enrolling in the minor courses. Major area courses may not be used in the minor.

#### **Elective Requirements (9-12 cr.)**

Selected in consultation with advisory committee. Elective courses are chosen to fill out the major and to contribute to the integrity of the student's program. These courses are taken in the student's area of interest, within or outside the department, in order to fulfill the total program requirement of 90 credit hours.

#### **Dissertation Requirements (15 cr.)**

795 Dissertation Proposal Preparation (3 cr.)

799 Dissertation Thesis (12 cr.)

### **Ph.D. Minor in Art Education Minor Requirements (12 cr.)**

#### **Required Courses (12 cr.)**

Each student works with their minor advisor from the program to select from the following courses that best contributes to the educational goals of the student. Some of the following courses are repeatable for credit in more than one instance.

Z525 Philosophic and Historical Foundations of Art Education (3 cr.)

Z700 Practicum in Art Education (1-6 cr.)

Z750 Topical Doctoral Seminar in Art Education: Variable Title (3 cr.)

Z760 Art Education Research Seminar: Variable Title (1-3 cr.)

The doctoral minor in Art Education does not require a minor qualifying exam.

### **Ph.D. Minor in Curriculum and Instruction**

Ph.D. students may minor in Curriculum and Instruction by completing at least 12 credit hours of coursework in the program. Each minor student works with a faculty advisor from the program to help in the selection of a set of courses that best contributes to the educational goals of the student.

The doctoral minor in Curriculum and Instruction does not require a minor qualifying exam.

### **Ph.D. Minor in Curriculum Studies**

This minor requires 12 credits in Curriculum Studies, at least 9 of which must be taken at Indiana University

#### **Minor Requirements (12 cr.)**

#### **Required Courses (6-9 cr.)**

J500 Instruction in the Context of Curriculum (3 cr.)

Select at least one course of the following:

J630 Curriculum Theory and Practice (3 cr.)

J664 Contemporary Curriculum Discourses (3 cr.)

#### **Additional Required Courses (3-6 cr.)**

The remaining course(s) selected in consultation with your minor advisor.

The doctoral minor in Curriculum Studies does not require a minor qualifying exam.

### **Ph.D. Minor in Early Childhood Education Minor Requirements (12 cr.)**

#### **Required Courses (9 cr.)**

E506 Curriculum in Early Childhood Education (2-6 cr.)

E508 Seminar in Early Childhood (1-3 cr.)

E525 Advanced Curriculum in Early Childhood Education (3 cr.)

#### **Additional Required Courses (3 cr.)**

The remaining course selected in consultation with your minor advisor.

The doctoral minor in Early Childhood Education does not require a minor qualifying exam.

### **Ph.D. Minor in Literacy, Culture, and Language Education**

The doctoral minor in Literacy, Culture, and Language Education (for those students whose major is outside of the Literacy, Culture, and Language Education Department) requires a minimum of 15 hours to include L600 Issues in Literacy, Culture, and Language Education (3cr), and one section of L750 Research Seminar in Literacy, Culture, and Language Education (3cr).

#### **Minor Requirements (15 cr.)**

##### **Required Courses (6 cr.)**

L600 Issues in Literacy, Culture, and Language Education (3 cr.)

L750 Research Seminar in Literacy, Culture, and Language Education (3 cr.)

##### **Additional Courses (9 cr.)**

Three additional courses in Literacy, Culture, and Language Education

The doctoral minor in Literacy, Culture, and Language Education does not require a minor qualifying exam.

### **Ph.D. Minor in Mathematics Education**

The Mathematics Education Minor is designed to help doctoral students learn about research on the learning and teaching of mathematics, and research on the preparation of mathematics teachers. The minor will be personalized, designed by the student and their minor advisor.

#### **Minor Requirements (12 cr.)**

##### **Required Courses (9 cr.)**

N716 Topical Seminar in Mathematics Education (2-4 cr.)  
Students are typically required to take this course a minimum of two times.

Select three-credits of the following:

N590 Independent Study or Research in Mathematics Education (1-3 cr.)

N610 Internship in Mathematics Education (1- 3 cr.)

##### **Additional Required Courses (3 cr.)**

Select the remaining hours, in consultation with your minor advisor, from the following:

N517 Advanced Study in the Teaching of Secondary School Mathematics (3 cr.)

N543 Advanced Study in the Teaching of Mathematics in the Elementary Schools (3 cr.)

N590 Independent Study or Research in Mathematics Education (1-3 cr.)

N610 Internship in Mathematics Education (1- 3 cr.)

N716 Topical Seminar in Mathematics Education (2-4 cr.)

Other course approved by the minor advisor.

The doctoral minor in Mathematics Education does not require a minor qualifying exam.

### **Ph.D. Minor in Science Education Minor Requirements (12 cr.)**

#### **Required Courses (12 cr.)**

Q612 Topical Seminar in Science Education (3 cr., taken four times for a total of 12 cr.)

Courses selected in consultation with your minor advisor.

The doctoral minor in Science Education does not require a minor qualifying exam.

### **Ph.D. Minor in Social Studies Education Minor Requirements (12 cr.)**

This minor requires 12 credits, which will be chosen in consultation with the minor advisor. These courses may include courses in Social Studies Education (EDUC-M), Curriculum Studies (EDUC-J), or other areas that develop students' understanding and expertise in Social Studies curriculum and instruction.

The doctoral minor in Social Studies does not require a minor qualifying exam.

### **Ph.D. Minor in Special Education**

The Ph.D. Minor in Special Education requires the completion of a minimum of 12 credit hours in Special Education at the doctoral level. Students seek an advisory committee minor advisor from the Special Education faculty and work with him or her to devise a selection of courses based on interest and need. In addition to approval by the minor advisor, the selection must be approved by the School of Education Associate Dean of Graduate Studies.

The doctoral minor in Special Education does not require a minor qualifying exam.

### **Ph.D. Minor in Teacher Education**

The Teacher Education Minor (minimum 12 credit hours) is designed to help students explore four broad areas of scholarship: 1) the theories, ideologies, and philosophies of teacher education; 2) the different approaches that have been used to develop teacher education programs and components of programs; 3) the experience (from students' and/or teacher educators' perspectives) of being involved in teacher education; 4) the societal factors (e.g., issues of race, class, gender) that have an impact on teacher education. Each area is examined both historically and in the present.

#### **Minor Requirements (12 cr.)**

##### **Required Courses (9 cr.)**

J700 Teaching in Teacher Education

J710 Paradigms and Programs in Teacher Education

J720 Teacher Education as Occupational Socialization

##### **Additional Required Courses (3 cr.)**

One relevant course involving teacher education from other departments or programs may be counted at the discretion of the minor advisor, although no more than one such course may be counted toward the 12 credit minimum.

The doctoral minor in Teacher Education does not require a minor qualifying exam.

### **Faculty**

#### **Dean**

Professor Anastasia Morrone

#### **Associate Dean for Graduate Studies**

Professor Sarah Theule Lubienski

### Department Chair

Professor Ana Maria Brannan

### Graduate Faculty

Please visit the Faculty Directory on the School of Education website for an updated listing of faculty.

<https://education.indiana.edu/about/directory/index.html?status=Faculty>

## Cybersecurity Risk Management

**Kelley School of Business; Maurer School of Law; Luddy School of Informatics, Computing, and Engineering; University Graduate School**

**Departmental E-mail:** cyberinq@indiana.edu

**Departmental URL:** <https://cybersecurityprograms.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

Curriculum

### Degrees Offered

The Master of Science (M.S.) in Cybersecurity Risk Management is offered in collaboration between the Kelley School of Business, Maurer School of Law, Luddy School of Informatics, Computing, and Engineering, and University Graduate School.

### Master of Science in Cybersecurity Risk Management Requirements

30 credit hours in graduate-level work including the following:

- **6 credit hours in Technical Cybersecurity:**
- CSCI A538: Network Technologies and System Administration (3 cr.)
- CSCI A541: Computing and Technology Bootcamp I (3 cr.)
- CSCI A542: Technical Foundations of Cybersecurity (3 cr.)
- GRAD C516: Cybersecurity Clinic (3 cr.)
- INFO I500: Fundamental Computer Concepts (3 cr.) (Prerequisites: Basic logic (including quantifiers), basic data structures/algorithms knowledge (BFS, DFS, sorting, 3linked lists, trees, stacks/queues, binary search, along with basic high school algebra and discrete math)
- INFO I520: Security and Software Assurance (3 cr.) (Prerequisites: CSCI A542 or equivalent knowledge)
- INFO I521: Malware: Threat & Defense (3 cr.) (Prerequisites: INFO I520)
- INFO I525: Organizational Informatics and Econ. of Security (3 cr.) (Prerequisites: Conversant in Technology)
- INFO I533: Systems and Protocol Security and Info. Assurance (3 cr.) (Prerequisites: INFO I520)

- INFO I537: Legal and Social Informatics of Security (3 cr.) (Prerequisites: Basic Scripting and/or Programming Knowledge)
- INFO I538: Introduction to Cryptography (3 cr.) (Prerequisites: Strong Mathematical background Required along with Basic Programming/Scripting)
- INFO I539: Cryptographic Protocols (3 cr.) (Prerequisites: Strong Mathematical background Required along with Basic Programming/Scripting)

### 6 credit hours in Information Technology Risk Management:

- BUEX C533: Data Intelligence & Visualization (3 cr.)
- BUEX C541: Enterprise Systems (3 cr.)
- BUEX T510: Digital Enterprise Business Technologies (3 cr.)
- BUEX T514: Business Capabilities for the Digital Future (3 cr.)
- BUKD C522: IT Technology for Managers (3 cr.)
- BUKD C548: Managing Intellectual Property in Global Business (3 cr.)
- BUKD S575 Business Applications of Machine Learning (3 cr.)
- BUKD T560: IT Risk Management (3cr.)
- BUKD T579: Information Systems Security (3 cr.)
- BUKD T578: Cybersecurity Law & Policy (3 cr.) **OR** BUS L578: Cybersecurity Law & Policy (1.5 cr.)
- BUKD T501: Big Data Technologies (3 cr.) (Prerequisites: BUEX-C 533)
- BUKD T522: IT Architecture (3 cr.)
- GRAD C516: Cybersecurity Clinic (3 cr.)

### 6 credit hours in Cybersecurity Law and Policy:

- BUKD T578: Cybersecurity Law & Policy (3 cr.) (online) **OR** BUS L578: Cybersecurity Law & Policy (1.5 cr.)
- GRAD C516: Cybersecurity Clinic (3 cr.)
- LAW B536: Health Privacy Law (2 cr.)
- LAW B587: Information Security Law (3 cr.)
- LAW B655: Information Privacy & Security Management Practicum (3 cr.) (Cross-listed with BUS L589: Cybersecurity Risk Management Capstone)
- LAW B708: Information Privacy Law I—Constitutional Privacy Issues (3 cr.)
- LAW B710: Cybersecurity Clinic (Cross-listed with GRAD C516)
- LAW B728: Information Privacy Law II (3 cr.)
- LAW B738: Cybersecurity (3 cr.)
- LAW L730: Seminar in Intellectual Property: Data Law & Policy

### 9 credit hours of specialization electives chosen from the above courses; options may also include selected topics in INFO-I590 chosen in consultation with the program director.

### Cybersecurity Capstone

- L589: Cybersecurity Risk Management Capstone (3 cr.) (Cross-listed with LAW-B 655 for MS/JD students)



## Concentrations

Students may earn concentrations in "Artificial Intelligence," "Business," "Computing," or "Law." The Business, Computing, and Law concentrations require fifteen credits from the respective course list above in Information Technology Risk Management, Technical Cybersecurity, or Cybersecurity Law and Policy. The Artificial Intelligence concentration requires students to complete an artificial intelligence project in the Cybersecurity Clinic (GRAD C516) in addition to twelve credits from the following course list: BUEX T510, BUEX T514, BUKD S575, CSCI B505, CSCI B551, CSCI B555, CSCI B561, CSCI B565, CSCI B657, CSCI B659, and CSCI P556.

## Digital Arts and Humanities

### College of Arts and Sciences

Departmental E-mail: [idah@indiana.edu](mailto:idah@indiana.edu)

Departmental URL: <https://idah.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in The University Graduate School Bulletin.)

### Curriculum

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Courses

From fine arts to digital poetics, from set design to digital heritage work, from choreography to topic modeling, digitally-inflected arts and humanities endeavors permeate the academy and the world around it. The Digital Arts & Humanities certificate and minor programs bring these digital methods to bear in a credential that signals students' competencies and expertise to potential academic (teacher, lecturer, professor, librarian) and non-academic (administrator, scholar in digital humanities centers, libraries, museums, and other cultural heritage institutions) employers. Our certificate and minor align arts & humanities graduate training at IU with an increasing emphasis on public scholarship and put graduate students in dialogue with the broader public via interdisciplinary digital methods and the enhanced accessibility afforded by digital scholarship and creative activity.

The minor indicates mastery of the theories, methods, and tools of scholarship and practice pertinent to blending digital methods with arts & humanities academic research and creative activities. The certificate takes that mastery one step further and provides an advanced credential based on the successful completion of a peer-reviewed project with a significant hands-on digital-methods component.

### Pursuing Graduate Training in the Digital Arts & Humanities

The Digital Arts & Humanities certificate and minor programs are designed for students with little to no programming or technical experience who wish to acquire new competency in digital arts & humanities, as well as for students with a strong history in digital methods who wish to deepen its application to humanities scholarship or arts production. The certificate encourages a focus in one of three primary areas of scholarship and practice:

- **Digital creative activities** (including fine arts, music composition, lighting, set and costume design, and dance)
- **Digital humanities scholarship and research dissemination** (including database design, topic modeling and other algorithmic forms of textual analysis, TEI markup, heritage simulation and curation, museology, digital poetics)
- **Critical studies in the digital arts and humanities** (including critical code studies, software studies, media studies, game studies, and studies in the relation of the digital to identitarian categories including gender, disability, ethnicity, race, etc).

### How do I decide between the certificate and the minor?

**The minor** provides an indication of broad mastery of digital arts & humanities methods for students currently enrolled in a doctoral program at the IUB campus.

**The certificate** allows graduate students currently enrolled in either a master's or doctoral program on the IUB campus to specialize in one area of digital arts and humanities in addition to demonstrating full engagement with the cross-disciplinary nature of the digital arts and humanities. A capstone project provides a concrete demonstration of the technical and methods mastery gained throughout the course of the certificate.

### Graduate Certificate in Digital Arts and Humanities Admission Requirements

Applicants must be enrolled in a master's or doctoral program on the IUB campus. Applications for the certificate and minor will be considered by the Program Advisory Committee once each semester. Applicants must submit a statement describing their background and interests in the arts and humanities, digital/technical expertise, and how their research agendas would be advanced by participating in the certificate program.

### Course Requirements

The certificate requires a minimum of 19 hours of coursework in the digital arts and humanities, distributed as follows:

- **Z657 Digital Humanities** (3 cr.) or an equivalent three-credit introduction to digital arts & humanities methods as approved by the program director. An introduction to the digital humanities and/or the digital arts orients students in the ways humanist scholarship or artistic activity has made use of digital platforms and new-media environments more generally.
- **One elective in digital technology** (3-4 cr.). This hands-on technical requirement may be waived by the program director for students with prior programming experience, in which case students will choose an additional elective for their concentration.
- **Three certificate-concentration electives** (9 cr.) selected in consultation with the program director and advisory committee and tailored to the student's disciplinary and career objectives. The certificate encourages a focus in one of three primary areas of scholarship and practice:



- **Digital creative activities** (including fine arts, music composition, lighting, set and costume design, and dance)
- **Digital humanities scholarship and research dissemination** (including database design, topic modeling and other algorithmic forms of textual analysis, TEI markup, heritage simulation and curation, museology, digital poetics)
- **Critical studies in the digital arts and humanities** (including critical code studies, software studies, media studies, game studies, and studies in the relation of the digital to identitarian categories including gender, disability, ethnicity, race, etc).
- **IDAHA 700 Digital Arts and Humanities Project** (3 cr.) This course is a workshop for students preparing their digital thesis project. The course will guide students in preparing each component of the project, including a proposal, an environmental scan, a prototype, and a critical reflection on the finished submission.

### Grades

Courses in which a student receives less than a B (3.0) will not count toward the certificate or the minor.

### Elective Courses

In addition to Z657 and IDAH 700, faculty offer a number of elective courses for the minor and certificate across three schools on the Bloomington campus.

View currently offered courses here. Courses marked with a \* meet the digital-technology requirement for both the certificate and the minor.

### Graduate Minor in Digital Arts and Humanities Admission Requirements

Applicants must be enrolled in a doctoral program on the IUB campus. Applications for the minor in Digital Arts and Humanities take the form of a consultation with the program director, who will ordinarily serve as the minor advisor.

### Course Requirements

The minor requires 13 hours of coursework, including:

- **Z657 Digital Humanities** (3 cr.) or an equivalent three-credit introduction to digital arts & humanities methods as approved by the program director. An introduction to the digital humanities and/or the digital arts orients students in the ways humanist scholarship or artistic activity has made use of digital platforms and new-media environments more generally.
- **Three electives** (9 cr.) selected in consultation with the program director and advisory committee and tailored to the student's disciplinary and career objectives. One of these must also fulfill the DAH certificate's digital-technology requirement.

These requirements may be modified in particular cases by the program director.

### Courses Curriculum

### Courses

- **FOLK-F804** Special Topics in Folklore (VT: Folklore & the Digital Humanities) (3 cr)
- **\*HPSC-X700 Computational Methods in History and Philosophy of Science:** Encoding, archiving and computational modeling for projects of interest to historians and philosophers of science
- **ENGL-L504/L746 The Rhetorics of Media and Literary Study in the 21st Century:** This seminar asks two questions of advanced scholarship and interpretation of literature in the 21st century: what resources from the long tradition of rhetorical analysis and theory can be leveraged for contemporary work in literature? And how do the basic assumptions of literary study and literary history alter when seen through the prism of an expanded mediascape? These are enormous questions, and our approach is merely to do some initial mapping of the problems, and to provide students with the means to pursue more pointed inquiries within this complex territory. Some classics in both rhetoric and media history/theory will be surveyed, and some developing lines of inquiry will also be explored. We will retain a frequent focus on literary questions, as well as the problem of remediation and adaptation, using Edgar Allan Poe and his afterlives as a touchstone allowing for some consistency. The class aims both to be an intensive exploration of ideas, and a space for discussion of contemporary conditions of scholarly production. For the latter component, students are asked to contribute to a collective "autoethnography" of the mediascape of scholarly communication today (e.g., websites, film, blogs, wikis, online journals, digital archives, Zotero, Scalar, presentation styles, Twitter-- the list is much longer, and ideally created by you). What are the rhetorical affordances of these tools and platforms? What kinds of community do they sustain? What is the rhetoric about these tools and platforms?
- **HIST-H685 History in the Digital Age:** How can maps, text mining, databases, and visualization tools change the way we think about history? Should they? Historians and other humanities scholars now have a vast array of digital methodologies and technologies available for use in our own research, in teaching, and to engage the public outside of academia. This course will systematically examine how these approaches affect humanities scholars broadly, and historical practice in particular, by focusing on the intersection of digital history's technical, theoretical and methodological perspectives and concerns. The lively debate between academic technoenthusiasts and techno-skeptics will help us build a theoretical foundation to understand the implications of collective knowledge building that comes from using digital tools. We can then push these theoretical boundaries in order to address more practical questions about how to analyze, manage, represent and interact with primary-source materials, both in terms of what is possible as a field and in terms of what is wise for us individually. Course assignments will allow you to invest time in evaluating and learning the tools you will need for your own scholarly endeavors. You

will be asked to lay the plans for a digital project related to your work, and to use your acquired expertise to educate your classmates. Note: No programming experience is assumed, but some familiarity with computers is a prerequisite. In consultation with the instructor, you will be asked to develop one or more technical proficiencies appropriate to your experience and your project (skills may include, but are not limited to, GIS, text mining, data visualization, encoding, and/or a programming language such as Python or R suited to customizing a tool for one of these approaches)

- **HIST-H650 Mapping the Black Experience:** This course focuses on the history of African American Migration during the late nineteenth and early twentieth centuries (1865-1920). The course will consist of three components. First, we will study the history of African American migration, which includes but is not limited to movement between rural areas and cities (and vice versa), migration to the South and to the West, northbound migration, transnational migration, and immigration by the African Diaspora. Second, we will look at the historiography of black American migration. This will include an examination of the methodologies employed by digital history and digital humanities scholars. Third, we will conduct our own research projects on African American migration. Students may choose to primarily use qualitative or quantitative research methodologies, but all projects must include at least one original GIS map. Students may generate maps at the neighborhood, city, state, national, or transnational level.
- **ISL-Z503 Representation and Organization:** Introduces students to various disciplines' approaches to the understanding, organization, representation (summarizing), and use of knowledge and information. This survey looks for commonality among the approaches taken in information science, cognitive psychology, semiotics, and artificial intelligence, among others. The goal is to identify criteria for evaluation and improvement of ways to organize and represent information for future retrieval. Information systems currently used in libraries and information centers will be studied as examples. Emphasis in the course is on concepts and ideas, with appropriate attention to terminology and technology.
- **\*ILS-Z511 Database Design:** Concerned with a comprehensive view of the processes involved in developing formal access to information from a user-centered point of view. Considers various database models such as flat file, hierarchical, relational, and hypertext in terms of text, sound, numeric, image, and geographic data. Students will design and implement databases using several commercial database management systems. ILS Z512 Information Systems Design: Students identify, design, and implement a significant information design project, such as the redesign of a complex Web site for a local business, library, or nonprofit. Principles and practices of project management are discussed in the context of team-based web site redesign.
- **ILS-Z514 Social Aspects of Information Technology:** The objective of this course is to help students think critically and constructively about information & communication technology and its relationship to work, leisure, and society at large. This course covers a series of concepts and analytical devices as well as empirical case studies related to social consequences of information & communication technologies when it is shaped and used by individuals, public agencies, and businesses.
- **ILS-Z515 Information Architecture:** Effective information system design integrates knowledge of formal structures with understanding of social, technological, and cognitive environments. Drawing from a range of disciplines, this course investigates how people represent, organize, retrieve, and use information to inform the construction of information architectures that facilitate user understanding and navigation in conceptual space.
- **ILS-Z516 Human-Computer Interaction:** Examines the human factors associated with information technology and seeks to provide students with knowledge of the variables likely to influence the perceived usability, and hence the acceptability, of any information technology. In so doing it will enable students to progress further towards specialist's work in the important field of human-computer interaction.
- **\*ILS-Z517 Web Programming:** The main focus of this course is to instruct students to develop and implement dynamic and interactive web applications. In order to do so, students will learn the basics of an open source programming language both through lectures and hands-on exercises in the lab.
- **ILS-Z518 Communication in Electronic Environments:** Examines conceptual perspectives on information in organizations, covering topics such as types of information, information activities, organizational culture and information technology, communication as information flow, obtaining and using information from the environment, managing information in specialized extended communities, and ethical and quality issues. Focus varies by type of community studied.
- **\*ILS-Z532 Information Architecture for the Web:** Focuses on Web site development. Students study information architecture as an approach for site organization and design, and learn about project management for complex web development tasks. In lab sessions, students work with advanced markup languages and scripting and develop sites, typically for real clients.
- **\*ILS-Z534 Information Retrieval: Theory and Practice:** Introduces basic information retrieval (IR) theory and examines cutting-edge IR research in order to gain insights into how theory can be applied to practice. After learning about IR models, classification, clustering, Web IR, and fusion IR, students will explore how these IR methods can be employed in working IR systems to enhance the retrieval outcome.
- **ILS-Z543 Computer-Mediated Communication:** Computer-mediated communication (CMC) is human-to-human interaction via computer networks such as the Internet. This course examines potentials and

constraints of several types of CMC, and considers how content and dynamics are influenced by the systems' technical properties and the cultures that have grown up around their use.

- **ILS-Z544 Gender and Computerization:** This course explores the relationship between information communication technologies (ICTs) and the gender of the people who design, use, administer, and make policy concerning computer systems and computer networks such as the Internet.
- **ILS-Z556 Systems Analysis and Design:** This course introduces the basic concepts underlying systems analysis and design, focusing on contextual inquiry/design and data modeling, as well as the application of those analysis techniques in the analysis and design of organizational information systems.
- **ILS-Z561 User Interface Design for Information Systems:** This course focuses on established principles and methods to design effective interfaces for information systems, emphasizing document retrieval, filtering, visualization, correlation, analysis, and research.
- **ILS-Z581 Archives and Records Management:** Introduces basic theories, methods, and significant problems in archives and records management. The course also discusses how archivists are responding to the challenge of managing and preserving electronic records.
- **ILS-Z604 Topics in Library and Information Science:** Study of specific topics in librarianship and information science. May be repeated for credit when topic varies. Example DH-related topics have included: introduction to moving image preservation, social media mining, digital curation, audio preservation principles and practice, information networks, information ethics, scholarly communication area will vary depending on topic
- **ILS-Z634 Metadata:** Metadata is essential in designing and developing effective knowledge systems; it facilitates resource discovery, database documentation, and recording digital documents' textual and conceptual histories. This course introduces principles supporting the development and implementation of metadata schemes, focusing on issues of interoperability, internal and external standardization, and evaluation.
- **ILS-Z635 Ontologies:** An ontology is a common semantic conceptualization of reality that is shared by members of a knowledge domain; it supports exchange of knowledge among participants. This course explores formal specifications for ontology construction among systems applications and software agents.
- **ILS-Z637 Information Visualization:** Introduces information visualization, highlighting processes which produce effective visualizations. Topics include perceptual basis of information visualization, data analysis to extract relationships, and interaction techniques.
- **ILS-Z641 Computer-Mediated Discourse Analysis:** Computer-mediated discourse analysis (CMDA), applies theories from linguistic discourse analysis, pragmatics, ethnomethodology, and semiotics in the analysis of discourse-language and

language use in computer-mediated communication. This course provides hands-on experience in applying empirical analytical methods, and in interpreting the results.

- **ILS-Z642 Content Analysis for the Web:** Application of Content Analysis methods to web documents, interactivity features, and links.
- **ILS-Z652 Digital Libraries:** Examines the design and operation of digital libraries and related electronic publishing practices from a socio-technical perspective. Students develop understanding of major issues, concepts, and trends, enabling them to understand the sociotechnical character of digital libraries that can and will be effectively supported and used by various groups.
- **\*ILS-Z656 Digital Publishing Standards and Systems:** This course will teach students to design and publish documents on the Web and for common eBook platforms such as iBook and Kindle. We will learn about XML-based document formats (such as TEI, DocBook, Office Open XML) and eXtensible Stylesheet Language Transformations (XSLT), a special-purpose programming language for transforming XML documents into other XML and non-XML formats. We will also learn to develop publications in common eBook formats, including ePub (iBook, etc.), AZW (Amazon Kindle), and KF8/AZW3 (Amazon Kindle).
- **ILS-Z661 Concepts and Contemporary Issues in Human-Computer Interaction:** Examines and assesses theoretical approaches developed specifically for understanding the use, informing the design, and assessing the value of information technologies. The course also considers contemporary issues surrounding the situated use of information technologies, such as emotional, embodiment, interpersonal, and social aspects of interaction.
- **ILS-Z662 Interface Design for Collaborative Information Spaces:** Provides an overview of two dimensional and three-dimensional interface design. Topics covered include task and user analysis, interface goals and design methods, and empirical evaluation.
- **ILS-Z764 Seminar in Information Science:** A doctoral seminar in IS introduces students to topic areas within the domain of information science (e.g., social informatics, scientometrics, information retrieval, representation and organization of resources, philosophy of information, human computer interaction, visualization). It is a reading-and-writing intensive experience and emphasizes depth over breadth. Recent seminar topics include: Scholarly Communication, Information Networks, and Social Aspects of Information Technology. Area will vary depending on topic
- **\*LING-L555 Programming for Computational Linguistics:** This course is geared towards students concentrating in Computational Linguistics with little or no experience in programming; Linguistics students are welcome, too. It will introduce the fundamentals of programming and computer science, aiming at attaining practical skills for text processing. While we will work with Python, the main focus is more on introducing basic concepts

in programming such as loops or functions. In contrast to similar courses in Computer Science, we will concentrate on problems in Computational Linguistics, which generally involve managing text, searching in text, and extracting information from text. For this reason, one part of the course will concentrate on regular expression search. Through lectures, lab sessions, and (bi-)weekly assignments, students will learn the essentials of Python and how to apply these skills to natural language data

- **\*LING-L545 Computation & Linguistic**

**Analysis:** L545 is a graduate course in natural language processing and computational linguistics. The course is concerned with concepts, models and algorithms to interpret, generate, and learn natural languages, as well as applications of NLP. The goal of the course is for the students to be familiar with basic concepts in NLP, understand the algorithms and methods for NLP, and acquire the skills for developing NLP tools. We will look at the different levels of linguistic analysis, morphology, morpho-syntax, syntax, and lexical semantics. Additionally, we will cover machine translation. No prior programming experience is assumed, computer experience presupposed.

- **\*LING-L645 Advanced Natural Language**

**Processing:** In recent years, statistical methods have become the standard in the field of Natural Language Processing (NLP). This course gives an introduction to statistical models and machine learning paradigms in NLP. Such methods are helpful for the following goals: reaching wide coverage, reducing ambiguity, automatic learning, increasing robustness, etc. In this course, we will cover basic notions in statistics, focused on the concepts needed for NLP. Then we will discuss (Hidden) Markov Models, exemplified by an approach to POS tagging. The following sessions will be dedicated to probabilistic approaches to parsing. In the second half of the course, we will cover semantic and discourse annotation, and in the final part, we will look at applications, such as machine translation, sentiment analysis, and dialogue systems.

- **LING-L615 Corpus Linguistics:** Advances in computer technology have revolutionized the ways linguists can approach their data. By using computers, we can access large bodies of text (corpora) and search for the phenomena in which we are interested. Corpora give us a chance to uncover complexities in naturally-occurring data and explore issues related to frequency of usage. In this course, we will approach the following questions such as the following: What exactly is a corpus, and what isn't? What corpora exist? How are corpora developed? What is XML, and why do we need it? How do we find a specific phenomenon in a large corpus? What is a concordancer? Do we need part-of-speech, syntactic, or semantic annotation? Are there programs that do the annotation for me? Are there tools that help me search in linguistically annotated corpora? No programming experience is assumed, familiarity with computers is presupposed.

- **MSCH-T580 Interactive Storytelling and Computer Games:** This course will approach storytelling and game design from the perspective

that, in design, there is no hierarchy of theory and practice: Making is thinking and thinking is making. The course will be structured like a design workshop and encourage an open context for collaboration. We will focus on design concepts and prototypes that explore the intersections of story, interface, networks, games, and both persistent and mobile platforms in contemporary interactive media. Course work will include reading, writing, design concepts, design documents and prototypes. No previous technical knowledge is required. T580 is about the exploration and development of ideas. Students should finish this course with an entirely new set of thoughts, plans, and goals related to their work as a new or continuing graduate student.

- **MSCH-C792 Advanced Seminar in Media**

**Theory, Topic:** Between Casual and Complicated: Bridging Qualitative and Computational Approaches to Digital Media Studies. Communication and Media Studies scholarship has long struggled with when and how to best weave together quantitative and qualitative approaches to lines of inquiry. Even when they could be used to complement each other, computational and critical methodological tools are often positioned as "at odds" with or epistemologically antithetical to each other. While methodologies always hinge on the research question at hand, no question about the social, political, or personal implications or meaning of emerging media can ignore the need to consider the role of "big data" or presence of digitally-mediated social networks as artifacts of everyday media engagements. Rather than assume that causal inference and qualitative, critical interpretation are epistemological chasms, what could it look like to bridge computational and qualitative divides? Can we identify ways to study Tweets, Likes, and other social media exhaust that integrate rather than polarize robust, quantitative and nuanced, qualitative techniques? This course examines strategies for investigating media rich, data-intensive problems that require sifting and sorting through massive amounts of material generated through engagement with social networks, data sensors, or other disparate, mediated archives. We examine ways to effectively and rigorously extract, interpret, and learn from very large datasets that require a new generation of scalable tools as well as new data management technologies, and interpretative frames.

- **MSCH-C 620: Media, Politics and Power, Topic:** Digital Media Access. "Access" and "openness" have become ubiquitous ways of describing digital media's potential benefits. In this course, we will investigate many of the meanings of "access" and "openness," particularly in relation to digital media. We will look to histories of common carriage and universal service, as well as literature concerning the public sphere, and a range of demographic and theoretical understandings of the Digital Divide. Readings will include material on a range of digital media types, uses, and users, and throughout, we will look to differences in identity such as disability, race, gender, age, and geography. Students are encouraged to bring alternate understandings of access or openness to the class for discussion, as

well. In addition to theoretical and critical analysis of these phenomena, this class will consider how digital texts, tools, and other services might best be made available and usable to various audiences via particular design and coding strategies. Although the standard assessments include a short "access analysis" of a particular digital media example and a final research paper of roughly 7000 words, alternate forms of evaluation are possible at student request, including video essays, podcasts, or community-based projects.

- **THTR-608 Advanced Flat Patterning:** The course objective is to manipulate flat patterns through a variety of methods, including digitizing them and using the program Optitex to adjust them. The ability to see the flat pattern 13 on a 3D rendered model allows the visualization of movement, weight, texture and type of fabric. Optitex works seamlessly between the 2D flat pattern and the 3D digital model allowing for a back and forth that expands the patternmaker's ability to drape and pattern for a designer.
- **THTR-347 Intro to Sound Design and THTR 447 Sound Design I:** Both courses are almost entirely computer-based, and use digital systems for recording, editing, creating sound effects and music that is to be used in theatre, film, multimedia and dance productions. The playback systems we use are now digital in terms of controlling and manipulating the sounds effects, recorded music and controlling and manipulating live actors and musicians. These courses focus heavily on the interactions between sound, music, technology and other art forms.

## Earth and Atmospheric Sciences

College of Arts and Sciences

Departmental E-mail: [geograd@indiana.edu](mailto:geograd@indiana.edu)

Departmental URL: <https://earth.indiana.edu/index.html>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Science in Geological Sciences, Master of Science in Geological Sciences-Atmospheric Sciences; Doctor of Philosophy in Geological Sciences, and in Geological Sciences-Atmospheric Sciences.

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

#### Admission Requirements

An undergraduate degree in the physical or natural sciences is required. It is expected that students will have an undergraduate background that includes course work in allied sciences/mathematics, equivalent to one year of chemistry and physics or biology, mathematics through differential and integral calculus, plus at least 6 credit hours of higher-level courses. Where appropriate,

a substantive foundation course in field geology or comparable independent field experience is also expected. Students with degrees in engineering or other related fields are also encouraged to apply.

### Master of Science Degree Course Requirements

**Geological Sciences:** A minimum of 30 credit hours. At least 22 of the 30 hours must be graduate-level courses (excluding G810) or one of the 400-level courses listed below from the Department of Earth & Atmospheric Sciences that are approved for graduate credit. Twelve of the 22 hours must be from the Department of Earth & Atmospheric Sciences and must include at least 9 hours at the 500 level or above. A minimum of 3 credits of G810 (Research) is required and a maximum of 8 credits of G810 can be applied toward the 30 required credit hours. A subset of 300 and above undergraduate courses in allied sciences are acceptable. Electives include but are not limited to: Mathematics, M301, M312, M343, M344, M365, M415; Physics, P331, P332, P340, P400. Additional courses from other science departments can be substituted with written permission from the Director of Graduate Studies.

#### *Geological Sciences-Atmospheric Sciences:*

Requirements are identical with one exception. At least 9 of the 12 required credits from the Department of Earth and Atmospheric Sciences must be from graduate courses defined as related to the Atmospheric Sciences track, which includes the listing below and other courses (e.g., new additions, including G690 offerings, to the atmospheric sciences curriculum) approved by the faculty

#### Thesis

A thesis or alternative research project is required.

### Dual Master's in Geological Sciences (M.S.) and in Environmental Sciences (M.S.E.S.)

Students must apply to and be accepted by both the School of Public and Environmental Affairs and by the Department of Earth & Atmospheric Sciences. A total of 60 credit hours is required. For specific program requirements, see the Director of Graduate Studies of Earth & Atmospheric Sciences and the School of Public and Environmental Affairs Graduate Programs Bulletin

### Doctor of Philosophy Degree Course Requirements

**Geological Sciences:** A total of 90 credit hours, including dissertation and 35 credit hours of course work approved for graduate credit (excluding G810). A minimum of 12 credit hours must be graduate courses taken from the Department of Earth and Atmospheric Sciences (excluding G810). The subset of allied science courses listed in the M.S. degree requirement applies to the Ph.D. Up to 30 credit hours of graduate classes can be transferred from another institution provided equivalent courses are offered at Indiana University.

#### *Geological Sciences-Atmospheric Sciences:*

Requirements are identical with one exception. At least 9 of the 12 required credits from the department of Earth and Atmospheric Sciences must be from graduate courses defined as related to the Atmospheric Sciences track which includes the listing below and other courses



(e.g., new additions, including G690 offerings, to the atmospheric sciences curriculum) approved by the faculty.

### **Courses Approved for Geological Sciences-Atmospheric Sciences Track**

G540 Physical Meteorology, G547 Atmospheric Instrumentation, G534 Dynamic Meteorology 2, G537 Synoptic Meteorology and Climatology, G538 Air Pollution Meteorology, G556 Wind Power Meteorology, G564 Dynamic Meteorology: Boundary-Layer Meteorology, G570 Micrometeorology, G574 Topics in Micro-and Boundary-layer Meteorology, G576 Climate Change Science.

### **Minor**

Outside minor in a related field (including chemistry, physics, biology, mathematics, statistics, computational science, sustainable energy science, and environmental sciences), or, with approval, a self-designed internal minor in an area of Earth and Atmospheric Science distinct from the major research area.

### **Early Review**

Written initial research plan followed by an oral defense.

### **Qualifying Examination**

Written and oral.

### **Final Examination**

Oral defense of the dissertation.

### **Faculty**

#### **Chairperson**

P. David Polly\*

#### **Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### **Haydn H. Murray Chair in Applied Clay Mineralogy**

Chen Zhu\*

#### **Malcolm and Silvia Boyce Chair**

Douglas A. Edmonds\*

#### **Robert R. Shrock Professorship in Sedimentary Geology**

David Polly\*

#### **Judson Mead Professorship in Geophysics**

Kaj M. Johnson

### **Professors**

Simon C. Brassell\*, Michael W. Hamburger\*, Claudia C. Johnson\*, Kaj M. Johnson\*, P. David Polly\*, Edward M. Ripley\*, Juergen Schieber\*, Chen Zhu\*

### **Associate Professors**

Douglas A. Edmonds\*, Chanh Kieu\*, Jackson K. Njau\*, Brian J. Yanites\*

### **Assistant Professors**

Ben Kravitz\*, Travis O'Brien, Paul W. Staten\*, Andrea L. Stevens Goddard

### **Professors Emeriti**

Abhijit Basu\*, David L. Bish\*, James G. Brophy\*, David L. Dilcher\*, J. Robert Dodd\*, Jeremy D. Dunning\*, Enrique Merino\*, Gregory A. Olyphant\*, Gary L. Pavlis, Lisa M. Pratt, Lee J. Suttner\*, Robert P. Wintsch\*.

### **Senior Scientists**

Chusi Li\*, Arndt Schimmelmann\*

### **Associate Research Scientist**

Edward W. Herrmann

### **Assistant Research Scientist**

Jess Miller-Camp, Peter E. Sauer, Tara M. Smiley

### **Senior Lecturer**

Bruce J. Douglas\*, Erica R. Elswick\*, Cody Kirkpatrick\*

### **Lecturer**

Elizabeth Kenderes

### **Professor of Practice**

Jim Handschy

### **Associated Research Faculty**

Christopher B. Craft\*(SPEA), Lea Florea (Indiana Geological & Water Survey), , Sally L. Letsinger\* ( Geography), Adam V. Maltese\* (Education), Maria Mastalerz\* (Indiana Geological & Water Survey), Pat McGlaughlin (Indiana Geological & Water Survey), , Kathy D. Schick\* (Stone Age Institute), Todd Thompson\* (Indiana Geological & Water Survey), Nick P. Toth\* (Stone Age Institute), Adam S. Ward\* (SPEA), Jeffrey R. White\* (SPEA)

### **Director of Graduate Studies**

Associate Professor, Douglas A. Edmonds\*, Geology Building 107, (812)-856-0522. ([geodgs@indiana.edu](mailto:geodgs@indiana.edu))

### **Courses**

- EAS-E 406 Introduction to Geochemistry (3 cr.) P: G222, MATH M212 or MATH M216, and CHEM C117. Chemistry in the study of the earth, employing elementary chemical thermodynamics, the phase rule, chemical equilibria, redox, reactions, the radioactive decay law, and organic chemistry.
- EAS-E 411 Invertebrate Paleontology (3 cr.) P: BIOL L105 or BIOL S105; and one 300-400-level course in biology or geology. Structure, classification, habitats, and geological history and significance of the invertebrate phyla. Laboratory study of fossils.
- EAS-E 416 Economic Geology (3 cr.) P: G334; CHEM C106, CHEM C117 or consent of instructor. Geologic occurrence and genesis of economic mineral deposits, including petroleum and coal. Introduction to mining, processing, and exploration methods. Two lectures and one 2-hour laboratory meeting per week.

- EAS- X 420 Regional Geology Field Trip (1-2 cr.)  
P: Consent of instructor. Field investigation of selected regions of North America for study of mineralogical, lithological, stratigraphic, structural, paleontological, geomorphological, or other geological relationships. Six to ten days in the field. May be repeated.
- EAS-E 423 Methods in Applied Geophysics (4 cr.)  
P: G413 or equivalent. Application of geophysical principles to field and laboratory experiments, with emphasis on data acquisition, analysis, and geologic interpretation. Experiments include earthquake seismology, electrical resistivity, magnetic and gravity surveys, and reflection and refraction seismology.
- EAS-E 427 Introduction to X-Ray Mineralogy (2-3 cr.) P: G221. Theory and practice of X-ray powder diffraction. Measurement and analysis of digital diffractometer data, including profile fitting and Rietveld refinement, with applications to geological, environmental, and structural-chemical problems.
- EAS- X 429 Field Geology in the Rocky Mountains (5-8 cr.) P: G222, G323. Five to eight weeks, including four to six weeks at the Geologic Field Station in Montana. Geologic reconnaissance, measurement of stratigraphic sections, mapping on aerial photographs, construction of structure sections. Regional geomorphology, stratigraphy, and structure through South Dakota, the Black Hills, Wyoming, Montana, Yellowstone Park, and Glacier Park.
- EAS-G 503 Phase Equilibria (3 cr.) P: CHEM C360, G406, or consent of instructor. Thermodynamic functions and conditions of equilibria in unary, binary, ternary, and multicomponent systems. Mixing properties of crystalline solutions. Chemical potential and activity diagrams.
- EAS-G 504 Metamorphic Petrology (3 cr.) P: G418, G503. The evolution of mineral assemblages and compositions during prograde metamorphism. Reaction mechanisms. Effect of fluid composition on mineral assemblages. Theoretical basis and description of various projection schemes. Appraisal of selected experimental studies.
- EAS-G 506 Principles of Igneous Petrology (3 cr.) P: G418. Origin, composition, classification, phase relationships, and distribution of igneous rocks; economic considerations. Emphasis on province, associations, and facies type.
- EAS-G 509 Theoretical Geochemistry (4 cr.) P: CHEM C360, CHEM C361, PHYS P340, or G406 or the equivalent; consent of instructor. Thermodynamics and solution chemistry as tools in geochemistry; designed for students planning advanced work or research in geochemistry.
- EAS-G 513 Seismology I (3 cr.) P: MATH M343 or M313; PHYS P222. Earthquakes, propagation of elastic waves, interpretation of seismological data, theory of seismological instruments. Core: solid-earth dynamics.
- EAS-G 514 Geophysical Signal Analysis (3 cr.) P: PHYS P222; MATH M343 or MATH M313. Construction, analysis, and interpretation of geophysical signals. Filter theory, spectral analysis, signal-to-noise enhancement, transform theory, seismic wave propagation, computer applications.
- EAS-G 515 Analysis of Earthquake Seismograms (1 cr.) P: G413. Analysis of local, regional, and teleseismic phases recorded on the Indiana University long- and short-period seismographs. Use of seismic records to determine earthquake source parameters, deep earth structure, and near-station structure. Surface wave dispersion and structure of the lithosphere.
- EAS G517 Optical Mineralogy (3 cr.) Use of crystal optics and the petrographic microscope to identify minerals, textures, rocks, and mineral reactions in thin sections of rock.
- EAS-G 520 Mechanics for the Earth Sciences (1 cr.) P: MATH M211, MATH M212. Fundamentals of continuum mechanics with emphasis on the derivation and solution of governing equations in elasticity, viscous flow, heat transfer, and groundwater flow. Problems in faulting, postseismic and postglacial relaxation, flexure of strata and lithosphere, emplacement of dikes/sills, flow of debris and ice, and groundwater flow.
- EAS-G 521 Micropaleontology (3 cr.) P: G404 or G411 or advanced standing in biological sciences. Morphology, biology, ecology, biostratigraphy, and phylogenetic relationships of microfossils. Course will survey the common fossil groups, including cyanobacteria, diatoms, dinoflagellates, acritarchs, foraminifera, and radiolaria.
- EAS-G 524 Carbonate Facies and Environments (3 cr.) P: Graduate standing. Carbonate environments from modern and ancient examples (including subsurface). Various ramp and platform margin depositional models. Emphasis on types and origin of facies. Current and classical literature on carbonates.
- EAS-G 534 Dynamic Meteorology: Synoptic to Global Scale (3 cr.) P: MATH M211, MATH M212, PHYS-P201 or P221 (P221 recommended), GEOG-G304 or G532 or consent of instructor. Introduction to dynamical processes and analysis in the atmosphere. Principles of fluid dynamics and their application to the atmosphere. Basic conservation laws and equations of motion. Circulation and vorticity. Dynamics of synoptic systems: quasigeostrophic analysis; oscillations and waves; baroclinic instability; and cyclogenesis. General circulation. Numerical modeling.
- EAS-G 537 Synoptic Meteorology and Climatology (3 cr.) P: GEOG G304 or G532 or consent of instructor. Analysis and prediction of synoptic scale weather systems, emphasizing the mid-latitudes. Other topics covered include severe weather and atmospheric/ oceanic teleconnections.
- EAS-G 538 Air Pollution Meteorology (3 cr.) P: GEOG G304 or G532 or consent of instructor.

Analysis of the physical laws that govern the transport, transformation, and removal of atmospheric pollutants. Primary emphasis will be on physical and chemical processes, although biological impacts will also be considered as the use of models and remote sensing, are also developed.

- EAS-G 540 Physical Meteorology, Climate, and Paleoclimate (3 cr.) Topics span all the scales of atmospheric processes; from climate change to weather forecasting and surface energy budgets. Students are introduced to the physical processes and properties of the atmosphere. Skills used to study and quantify atmospheric processes, such as the use of models and remote sensing, are also developed.
- EAS-G 544 Methods in Analytical Geochemistry (2 cr.) G544-Methods in Analytical Geochemistry is designed as an overview of basic collection and preparation of water, soil and rock samples for elemental analysis by analytical geochemical techniques used in environmental and exploration geology, as well as, geochemical studies. The course is designed to give background and context to published data sets for critical evaluation. Finally, it is an opportunity to develop scientific writing skills. G544 is taught simultaneously with the undergraduate course G444, with additional written assignment for Graduate Credit.  
EAS-G 550 Surface Water Hydrology (3 cr.)  
P: G451 and MATH M216, or consent of instructor. Mechanics of surface runoff and open channel flow. Rainfall-runoff equations, probability analysis of stream flow, and watershed simulation models. Chemistry of surface waters and stream pollution.
- EAS-G 551 Advanced Hydrogeology (3 cr.) P: G451. Basic principles and quantitative aspects of physical flow systems and chemistry of ground water and surface water. The relationships between water and geologic materials..
- EAS-G 554 Fundamentals of Plate Tectonics (2 cr.) P: Graduate standing in geology or consent of instructor. Synthesis of observations from diverse disciplines of geology leading to the development of modern plate tectonic theory. Applications of plate tectonic principles to fundamental problems of continental and marine geology.
- EAS-G 556 Wind Power Meteorology (3 cr.) P: G304, G362, or consent of instructor. The science of wind power meteorology will be explained with a focus on practical elements of how to measure wind resources, estimate wind turbine loads and wind turbine siting. The class is divided into a lecture and laboratory type format with project work.
- EAS-G 561 Paleoecology (3 cr.) P: G334 and G404 or G411. Relationships between modern and fossil organisms and their physical, chemical, and biological environments; emphasis on techniques for interpreting past environmental conditions.
- EAS-G 562 Geometric Morphometrics (3 cr.) Practical, applied introduction to geometric morphometric analysis of shape. Students learn to collect, analyze, and interpret geometric morphometric data. Shape theory and methods are covered, including Procrustes superimposition and its statistical implications, analysis of curves and outlines, and Monte Carlo modeling of shape.
- EAS-G 563 Quantitative Paleontology (3 cr.) Practical applications of quantitative analysis as they relate to paleontology, including the analysis of diversity through time, analysis of diversity in space, analysis of morphological disparity, and reconstruction of phylogenetic relationships. Skills include Monte Carlo statistical tests, analysis of large data sets, use of relational SQL databases, and the application of GIS to paleontological problems.
- EAS-G 570 Micrometeorology (3 cr.) P: GEOG-G304, G340, G532, G540, MATH-M211-M212, or consent of instructor. Atmospheric processes at the micro and local scale. Topics include energy and mass exchange over simple non-vegetated surfaces, vegetated surfaces, non-uniform terrain, and inadvertent climate modification.
- EAS-G 571 Principles of Petroleum Geology (3 cr.) P: G323. Origin, geochemistry, migration, and accumulation of petroleum; reservoir rocks; types of entrapment; exploration procedures and their rationale; methods and devices for data gathering and detection.
- EAS-G 572 Basin Analysis and Hydrocarbons (3 cr.) P: G323 and G334. Modern concepts of tectonics and sedimentary basin analysis. Geologic application of geophysical logs and seismic stratigraphy to basin analysis, facies distribution, and structural style in a variety of basin types with specific examples from around the world. Techniques of hydrocarbon assessment in basinal settings.
- EAS-G574 Topics in Micro- and Boundary-layer Meteorology (3 cr.) Topics may include surface-vegetation-atmosphere interaction, dynamics of turbulent transport, boundary layer dynamics, turbulent kinetic energy and stability, dimensional analysis and similarity theory, effects of surface inhomogeneity on boundary layer dynamics, patchiness, urbanization, regional aggregation of surface atmosphere exchange, applications to mesoscale modeling, and air pollution dispersion modeling.
- EAS-G 576 Climate Change Science (3 cr.) P: At least two undergraduate courses in the physical sciences or consent of instructor. Evidence for and theories of climate change over a range of time scales. Sources of natural climate forcing are presented, historical evolution of climate change is quantified, and model tools and climate projections are presented along with analyses of climate change impacts.
- EAS-G 581 Surficial Geology (3 cr.) Study of earth surface process, landforms, and unconsolidated deposits is fundamental to several subdisciplines of geology, especially hydrogeology and environmental geology.
- EAS-G 582 Computational Methods for Earth Scientists (3 cr.) P: MATH M211-M212 or equivalent.

Students will develop numerical solutions to ordinary and partial differential equations which describe a wide variety of geologic processes which could include fluid flow, heat transfer, sediment transport, seismic wave propagation through elastic solids, isotopic fluid-rock interactions.

- EAS-G 583 Isotope Geochemistry (3 cr.) Introduction to the theory and application of radiogenic and stable isotopes to a variety of subdisciplines in the earth sciences. Topics include geochronology, tracers, mass balance and mixing, hydrology and environmental applications, water-rock interaction, and biogeochemical cycles.
- EAS-G 586 Geochemical Modeling (3 cr.) P: CHEM C360, C361, PHYS P340, or G406 or the equivalent; consent of instructor. Introduces students to the theories and applications of geochemical modeling. Students will have the opportunity to acquire hands-on experience with popular geochemical codes.
- EAS-G 587 Organic Geochemistry (3 cr.) P: Consent of instructor. Application of organic geochemical methods in determining origins of fossil fuels and in defining biological and environmental histories of rocks.
- EAS-G 588 Paleobiogeography (3 cr.) P: BIOL L318; G404 or BIOL L374; G561 or L473. Introduction to the theory and practice of analyzing the spatial and temporal distribution of past life, with consideration of the biostratigraphic evolution of major life forms. Models of dispersion patterns are analyzed within a plate tectonic and paleoclimate context.
- EAS-G 589 Geomicrobiology (3 cr.) P: Two semesters each of undergraduate biology and chemistry. Geomicrobiology provides an introduction to the diversity and physiology of microbes in soil, sediment, lake, ocean, and ground-water environments. The first half of the course focuses on microbial classification, growth, metabolism, and genetic phylogeny in order to build a conceptual framework and technical vocabulary. The second half of the course integrates lecture with discussion of recently published journal articles.
- EAS-G 590 The Art of Geoscience(1 cr.) An introductory seminar for all incoming graduate students in Earth & Atmospheric Sciences designed to help the transition from undergraduates to active research scientists, focusing on the practical skills required for success. The course engages students in broadening their perspectives of the geosciences via the departmental colloquium series, and practical aspects of research activities including writing publications and proposals.
- EAS-G 591 Physical Sedimentology (3 cr.) P: G415, G501 or equivalent. Dynamics of fluid flow, hydraulics of sediment transport, interaction of physical processes in depositional environments. Field study of selected modern depositional environments.
- EAS-G 600 Advanced Techniques (arr. cr.) P: Consent of instructor. \*\*These courses are eligible for a deferred grade. Training in special geologic methods such as exploration seismology, experimental petrology, X-ray spectroscopy, electron probe microanalysis, isotopic and organic mass spectrometry.
- EAS-G 601 Clay Mineralogy (3 cr.) P: Consent of instructor. Composition, structure, properties, methods of identification, and origin and distribution of clay minerals.
- EAS-G 612 Inverse Methods in Geophysics (3 cr.) P: MATH M301, M303, or equivalent. Mathematical techniques to infer the properties of the deep interior of the earth from geophysical data and to appraise the reliability of the results. Theory of generalized inverses in finite dimensional vector spaces and Hilbert space. Resolving power of data. Nonlinear inverse methods.
- EAS-G 613 Seismology II (3 cr.) P: G513. Theory of wave propagation in layered elastic media: Lamb's problem, Cagnaird's method, and propagator matrices. Body force equivalents and the moment tensor representation of seismic sources. Additional selected topics.
- EAS-G 616 Metalliferous Mineral Deposits (3 cr.) P: G416 and G406, or equivalent. Geological processes controlling ore deposition. Application of stable and radioactive isotopes, fluid inclusions, and thermodynamics to the study of ore deposits. Laboratory study of opaque minerals using reflected light microscopy.
- EAS-G 633 Advanced Geophysics Seminar (1-3 cr.) P: Consent of instructor. S/F grading. Selected topics in earth physics.
- EAS-G 637 Seminar in Tectonics (1 cr.) P: Consent of instructor. Multidisciplinary seminar focusing on regional-scale deformation of the earth's lithosphere.
- EAS-G 685 Evolution of Ecosystems (3 cr.) P: G561 or BIOL L575; G583; statistical methods. Advanced analysis of large-scale, cohesive environmental influences on ecosystem development and persistence through the rock record. Emphasis on paleoecologic grouping at community and higher levels. Analytical methods include advanced statistics and synthesis of published numerical, geochemical, and sedimentologic models.
- EAS-G 690 Advanced Geology Seminar (arr. cr.) P: Consent of instructor. S/F grading. Seminars on critical research issues and topical themes.
- EAS-G 700 Geologic Problems (1-5 cr.) P: Consent of instructor. \*\*These courses are eligible for a deferred grade. Consideration of special geological problems.
- EAS-G 810 Research (arr. cr.) \*\*These courses are eligible for a deferred grade.

## East Asian Languages and Cultures

Hamilton Lugar School of Global and International Studies

College of Arts and Sciences

Departmental E-mail: [ealc@indiana.edu](mailto:ealc@indiana.edu)

Departmental URL: [www.indiana.edu/~ealc/](http://www.indiana.edu/~ealc/)

The Department of East Asian Languages and Cultures is affiliated with the Hamilton Lugar School of Global and International Studies (HLS) in the College of Arts and Sciences, dedicated to providing Indiana University graduate students with the intellectual tools they will need to live, work, and thrive in the globalized world of the twenty-first century. Degree programs associated with HLS emphasize language proficiency, cultural competency, and in-depth training in qualitative and quantitative methodologies. HLS students will enjoy unparalleled access to a stellar faculty and professional development opportunities. For further information regarding the mission, structure and resources of the Hamilton Lugar School of Global and International Studies see <http://hls.indiana.edu/>.

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Arts in Chinese or Japanese, Master of Arts in Chinese or Japanese with Language Pedagogy Track, Master of Arts in East Asian Studies, Dual Degree: Master of Arts in East Asian Studies and Master of Business Administration, Joint Master of Arts Program in East Asian Studies and Master of Public Affairs, Doctor of Philosophy in Chinese or Japanese

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

#### Admission Requirements

Graduate Record Examination General Test is required. International students admitted into departmental programs must demonstrate a high level of proficiency in English or take additional courses to remove deficiencies.

#### Grade

Students must maintain at least a 3.0 (B) grade point average.

#### Master of Arts Degree in Chinese or Japanese Admission Requirement

An undergraduate major in Chinese, Japanese, or East Asian studies or a strong major in any field in the humanities or in the social sciences with general knowledge of the culture of China or Japan. Proficiency in Chinese or Japanese through at least second year is expected.

#### Course Requirements

A total of 30 credit hours, including M.A. project hours, in approved courses. Ordinarily, at least 20 of these credit hours, not counting thesis hours, must be from among the courses listed under "Chinese" or "Japanese" (depending on the student's major) on the list that follows, including at least three at the 500 level or above, of which one must be C511 or J511. Third-year language courses do not count toward the requirement that one take at least 3 courses at the 500 level or above, but do count toward the 20 credit hours required for the major. The remaining credit hours may be taken from other departments at the discretion of the Director of Graduate Studies. Except for overseas study credits, normally a maximum of 3 credit hours of E595 may be counted toward the degree.

#### Language Requirements

Completion of the fourth-year level or equivalent in the student's major language. For some areas of research, proficiency in a classical East Asian language, involving up to one year of coursework, may be necessary. Specific program requirements will be determined in consultation with the Director of Graduate Studies and the student's Advisory Committee, according to departmental guidelines. Language courses at the third year level or above in the major language and at the third year level or above in other East Asian languages may be counted toward the degree. Language courses at the first and second year level will not count toward the degree. Students planning to apply to Ph.D. programs in fields that typically require a second East Asian language are strongly encouraged to begin such language study during M.A. coursework.

#### Project

The student may choose either a thesis or an essay.

#### Thesis

- Normally 50–80 pages
- Demonstrates the student's skills in the use of primary sources and scholarly research
- May be taken for up to 4 credit hours
- The thesis option is strongly recommended to students who wish to be admitted to the Ph.D. program.

#### Essay

- Normally 40–50 pages
- Demonstrating the ability to master, use, and critically evaluate a body of scholarly literature in the student's field
- May be taken for up to 4 credit hours

#### Master of Arts in Chinese or Japanese: Language Pedagogy Track Admission Requirements

An undergraduate degree with at least two years of the student's proposed language of specialization or the equivalent.

#### Course Requirements

A total of 30 credit hours, including M.A. project hours, in approved courses. At least 20 of these credit hours must be from among the courses listed under "Chinese" or "Japanese" (depending on the student's major). Of these,



students in Chinese language pedagogy must take C520, C535, C525, and C527; students in Japanese language pedagogy must take J520, J525, and J527. Also required is one semester of Literary Chinese or Literary Japanese.

The remaining 10 credit hours beyond the 20 required Chinese or Japanese courses may be taken from courses in Linguistics (e.g., L503, L542, L543), Second Language Studies (e.g., S532, S536, S600, T550), and East Asian culture courses, in consultation with the advisor. Except for overseas study credits, normally a maximum of 3 credit hours of E595 may be counted toward the degree.

### Language Requirements

Completion of the fourth year level or equivalent in the student's major language. Language courses at the first and second year level will not count toward the degree.

### M.A. Project

An M.A. project demonstrating the student's pedagogical skills is required. The project may take a variety of forms, ranging from an essay involving empirical study of methodological/language acquisition issues to development of concrete teaching tools with pedagogical analyses. Up to 4 credit hours may be counted toward the degree.

### Master of Arts Degree in East Asian Studies

#### Admission Requirements

An undergraduate major in East Asian studies or a strong major in any field in the humanities or in the social sciences with general knowledge of the culture of East Asia. Entering students who have not had the first two years of an East Asian language must remove this deficiency within the first two years of graduate study.

#### Course Requirements

A total of 30 credit hours, including M.A. project hours, in approved courses. Ordinarily, at least 20 of these credit hours must be from among the courses listed under "Culture and Area Courses" on the list that follows. Students focusing on Japan must complete J511. At least three courses must be at the 500 level or above. Third and fourth year language courses do not count towards the requirement, but do count toward the 20 credit hours required for the major. Except for overseas study credits, normally a maximum of 3 credit hours of E595 may be counted toward the degree.

#### Language Requirement

Satisfactory completion of three years of Chinese, Japanese, or Korean, or the equivalent, as determined by examination. Language courses at the third-year level and above may be counted toward the degree. Language courses at the first- and second-year levels will not count toward the degree. Students planning to apply to a Ph.D. program in fields that typically require a second East Asian language are strongly encouraged to begin language work during the M.A. program.

#### Project

The student may choose either a thesis or an essay.

#### Thesis

- Normally 50–80 pages

- Demonstrates the student's skills in the use of primary sources and scholarly research
- May be taken for up to 4 credit hours
- The thesis option is strongly recommended to students who wish to be admitted to the Ph.D. program.

#### Essay

- Normally 40–50 pages
- Demonstrating the ability to master, use, and critically evaluate a body of scholarly literature in the student's field
- May be taken for up to 4 credit hours

### Dual Degree: Master of Arts in East Asian Studies and Master of Business Administration

#### Admission Requirements

Students must separately apply to and be accepted into both the M.B.A. program in business and the M.A. degree program in East Asian studies. The normal criteria for admission to each program apply. Students may apply for admission to both programs simultaneously. Alternatively, students may begin their studies in either school and then apply to the second program after admission into the first program. Either way, students will likely spend one year in the College of Arts and Sciences, one year at the School of Business and the final year completing the final requirements (including the thesis) of both programs. All dual-degree students should expect to pay University Graduate School tuition rates for approximately half of their enrolled semesters at IU and professional school tuition rates for the other half. Both degrees must be awarded simultaneously.

#### EALC Course Requirements

30 credit hours, including three social science courses, two history courses, and one humanities course. Ordinarily, at least 18 of these credit hours must be from among the courses listed under "Culture and Area Courses" on the list that follows. Students focusing on Japan must complete J511. At least three courses must be at the 500 level or above. Third and Fourth year language courses do not count toward the requirement that one take at least 3 courses at the 500 level or above, but do count toward the 18 credit hours required for the major. Except for overseas study credits, normally a maximum of 3 credit hours of E595 may be counted toward the degree. With the approval of the Director of Graduate Studies, up to 6 of the required 30 credits may be Business classes.

#### Business Course Requirements

Required and elective courses to total 42 credit hours of graduate course work. The possibilities of course combinations are many and will depend on your specific career path. For details, contact the M.B.A program office, 812-855-8006.

#### Language Requirement

Satisfactory completion of three years of Chinese, Japanese, or Korean, or the equivalent, as determined by examination. Language courses at the third- year level and above may be counted toward the degree. Language

courses at the first- and second- year level will not count toward the degree.

### Project

Jointly supervised by EALC and Business faculty, the student may choose either a thesis or an essay, combining expertise in East Asian studies and business.

### Thesis

- Normally 50–80 pages
- Demonstrates the student's skills in the use of primary sources and scholarly research
- May be taken for up to 4 credit hours
- The thesis option is strongly recommended to students who wish to be admitted to the Ph.D. program.

### Essay

- Normally 40–50 pages
- Demonstrates the ability to master, use, and critically evaluate a body of scholarly literature in the student's field
- May be taken for up to 4 credit hours
- Up to 3 credit hours may be counted toward the degree

## Joint Master of Arts in East Asian Studies and Master of Public Affairs

### Admission Requirements

Students must separately apply to and be accepted into both the M.P.A program in the O'Neill School of Public and Environmental Affairs and the M.A. degree program in East Asian Studies. The normal criteria for admission to each program apply. Students may apply for admission to both programs simultaneously. Alternatively, students may begin their studies in either school and then apply to the second program after admission into the first program. All dual-degree students should expect to pay University Graduate School tuition rates for approximately half of their enrolled semesters at IU and professional school tuition rates for the other half. Both degrees must be awarded simultaneously.

### EALC Course Requirements

24 credit hours, including three social science courses, two history courses, and one humanities course. Ordinarily, at least 18 of these credit hours must be from among the courses listed under "Culture and Area Courses" on the list that follows. Students focusing on Japan must complete J511. At least three courses must be at the 500 level or above. Third and fourth year language courses do not count towards the requirement that one take at least 3 courses at the 500 level or above, but do count toward the 20 credit hours required for the major. Except for overseas study credits, normally a maximum of 3 credit hours of E595 may be counted toward the degree.

### SPEA Course Requirements

36 credit hours of graduate course work to be distributed as follows: (1) professional development practicum courses; (2) courses in the SPEA core; (3) specialized concentration course, which may include SPEA, EALC, and other courses, to be selected in consultation with a

SPEA advisor. For details, contact the SPEA graduate student services office, SPEA 260, 812-855-9485.

### Language Requirement

Satisfactory completion of three years of Chinese, Japanese, or Korean, or the equivalent, as determined by examination. Language courses at the third year level and above may be counted toward the degree. Language courses at the first and second year level will not count toward the degree.

### Project

The student may choose either a thesis or an essay.

### Thesis

- Normally 50–80 pages
- Demonstrates the student's skills in the use of primary sources and scholarly research.
- The thesis option is strongly recommended to students who wish to be admitted to the Ph.D. program.

### Essay

- Normally 40–50 pages
- Demonstrates the ability to master, use, and critically evaluate a body of scholarly literature in the student's field
- Up to 3 credit hours may be counted toward the degree

## Doctor of Philosophy Degree in Chinese or Japanese Admission Requirement

An M.A. in Chinese or Japanese or its equivalent is required.

### Course Requirements

A minimum of 30 credit hours, beyond those taken for the M.A., in departmental courses, as follows: five courses (15 credit hours) at the 400 and 500 levels, of which a minimum of two courses must be at the 500 level; one course (3 credit hours) in research methods/bibliography (C511 or J511); and four seminar courses (16 credit hours), including the seminar in East Asian studies scholarship (EALC-E604). Please note that third- and fourth- year language courses do not count toward the five required 400–500-level courses. A dissertation is required.

### Minor

A minor is required in an outside department, such as comparative literature, fine arts, folklore and ethnomusicology, history, political science, religious studies, or other approved departments. Examination in the minor if prescribed by the department or program concerned.

### Language Requirements

Before the qualifying examination, students must demonstrate proficiency, both oral and reading, in the student's major language, as well as reading proficiency in French, German, or another European language relevant to their research area. For some areas of research, proficiency in a second modern East Asian language or a classical East Asian language is necessary. Specific program requirements will be determined in

consultation with the Director of Graduate Studies and the student's Advisory Committee, according to departmental guidelines. Language courses at the first and second year level will not count toward the degree.

### Qualifying Examinations

Upon completion of course work, two written examinations in subject fields (one in the major field of specialization, one in a historical period of the major cultural area) and one oral exam.

### Colloquium

Following approval by the research committee, the candidate will orally present a dissertation proposal to the department in the form of a colloquium detailing and discussing the dissertation plan.

### Dissertation

On an approved subject in the major language or culture. Up to 15 credit hours may be taken for the dissertation.

### Final Examination

Upon completion of the dissertation, a final oral examination on the dissertation and major area.

### Ph.D. Minor in Chinese or Japanese Course Requirements

Doctoral students from other departments may complete a minor in Chinese or Japanese by completing the following:

1. Proficiency in Chinese or Japanese (completion of the third-year level or equivalent).
2. 12 to 15 credit hours, or at least four courses, in courses with a majority of content taught in Chinese or Japanese. These courses will be listed under "Chinese" or "Japanese" in this bulletin.
3. Courses counted toward fulfillment of the language proficiency requirement may not also be counted toward the 12 to 15 hours of Chinese or Japanese content courses. A maximum of 3 credit hours of E595 may be counted toward the minor.

### Ph.D. Minor in East Asian Studies Course Requirements

Doctoral students from other departments may complete a minor in East Asian Studies by completing the following:

1. A minimum of four culture courses in East Asian Languages and Cultures, two of which must be in fields outside the student's major discipline.
2. Proficiency in Chinese, Japanese, or Korean (completion of the third-year level or equivalent).
3. Courses counted toward the fulfillment of the language proficiency requirement may not also be counted toward the culture class requirement. A maximum of 3 credit hours of E595 may be counted toward the minor.

### Faculty

**Chairperson**  
Scott O'Bryan

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Yea-Fen Chen\*, Y. J. Chih\* (Emeritus), Jurgis Elisonas\* (Emeritus), Eugene Eoyang\* (Emeritus, Comparative Literature), Sara Friedman\* (Anthropology, Gender Studies), Yoshio Iwamoto\* (Emeritus, Comparative Literature), Sumie Jones\* (Emerita, Comparative Literature), Gregory J. Kasza\* (Emeritus), Seung-Kyung Kim\*, Paul Kuznets\* (Emeritus, Economics), Susan Nelson\* (Emerita, Fine Arts), Jean Robinson\* (Emerita, Political Science), Michael E. Robinson\* (Emeritus), Richard Rubinger\* (Emeritus), Lynn Struve\* (Emerita, History), Natsuko Tsujimura\*, Margaret Yan\* (Emerita)

### Associate Professors

Heather Blair\* (Religious Studies), Gardner Bovingdon\* (Central Eurasian Studies), Laurel Cornell\* (Sociology, Gender Studies) (Emerita), Stephanie DeBoer (Cinema & Media Studies), Michael Ing\* (Religious Studies), Hyo-Sang Lee\*, Adam Liff\*, Charles Lin\*, Manling Luo\*, Ethan Michelson\*, Scott O'Bryan\*, Morten Oxenboell\* (on leave fall 2020), Edith Sarra\*, Jonathan Schlesinger (History), Aaron Stalnaker\* (Religious Studies), Marvin Sterling\* (Anthropology), Yasuko Ito Watt\* (Emerita), Tie Xiao\*

### Assistant Professors

Hannah Airriess, Hilary Holbrow (spring 2021), Susan Hwang\*, Wendy Leutert, Henghua Su\*, Nozomi Tanaka\*, Nick Vogt\*, Fei-Hsien Wang (History)

### Professors of Practice

Mark Minton (East Asian Languages and Cultures, International Studies)

### Senior Lecturers

Yasuko Akiyama, Yingling Bao, Misako Matsubara, Sue Tuohy (Folklore and Ethnomusicology)

### Lecturers

John Finch, Jiyoung Kim, Xiaoying Liles, Xiang Lyu

### Academic Specialists

Michael Brose, John Finch

### Adjunct Associate Professor

Rick Harbaugh\* (School of Business)

### Director of Graduate Studies

Charles Lin

### Courses

### Chinese Language and Linguistics Courses

- EALC-C 101-102 Elementary Chinese I-II (2-2 cr.)
- EALC-C 201-202 Second-Year Chinese I-II (2-2 cr.)
- EALC-C 533-534 Third-Year Chinese I-II (3-3 cr.)

- EALC-C 543-544 Fourth-Year Chinese I-II (3-3 cr.)  
P: A grade of C or higher in C534 or equivalent proficiency. Emphasis on advanced reading skills.
- EALC-C 451-452 Advanced Classical Chinese I-II (3-3 cr.)
- EALC-C 505 Topics in Chinese Studies (1-4 cr.)  
Graduate colloquium on aspects of Chinese languages, literature, thought, or society. Topics will vary. A substantial portion of course work and readings will be in Chinese. With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.
- EALC-C 506-507 Literary Chinese I-II (3-3 cr.)
- EALC-C 550 Chinese Writing and Rhetoric (3 cr.)  
P: Grade of C or higher in C544 or consent of the instructor. Practice in reading, writing, and speaking through analysis of modern prose and literary texts. Examination of how the Chinese frame discourse, so students may develop their ability to present ideas with precise diction, in appropriate registers, in extended discourse.
- EALC-C 506-507 Literary Chinese I-II (3 cr.)
- EALC-C 508-509 Chinese Language Practice I-II (1-1 cr.)
- EALC-C 520 Introduction to Chinese Linguistics (3 cr.) P: Grade of C or higher in C544 or consent of the instructor. Survey of issues in Chinese linguistics. Topics include phonetics/phonology, morphology, syntax, semantics, pragmatics and selected psychological aspects of Chinese.

### Language Pedagogy Courses

- EALC-C 525 Teaching Chinese as a Foreign/Second Language (3 cr.) Designed for graduate and advanced undergraduate students who have an interest in acquiring knowledge, skills, and experience in teaching Chinese as a foreign language. Taught in a seminar-practice format, the course examines the contemporary paradigms of foreign language instruction, identifies critical issues in language pedagogy, and explores various techniques of teaching the four language skills (speaking, listening, reading, and writing). Active participation in the class is mandatory.
- EALC-C 527 Practicum in Chinese Language Pedagogy (2-3 cr.) This course is eligible for deferred credit. Supervised application of language pedagogy. In an actual classroom students will apply the theories, paradigms, and approaches to language learning they have studied. Practicum experience developed in consultation with the advisor, with approval of the Director of Graduate Studies.
- EALC-C 535 Chinese Curriculum and Material Design (3 cr.) For students interested in exploring the theories, issues, and principles of language curriculum design and acquiring practical experience of applying various syllabus frameworks to design sample Chinese materials. Emphasis on developing students' ability to analyze and synthesize factors

contributing to an effective language learning program.

- EALC-C 598 Pedagogy Project (1-4 cr.) This course is eligible for deferred credit. Demonstration of pedagogical understanding and skills. The project may take either of two forms: empirical study of pedagogical issues or significant materials development (e.g., set of course materials, course Web site, multimedia learning modules, testing instruments). Developed in consultation with the advisor, with approval of the Director of Graduate Studies.

### Literature Courses

- EALC-C 505 Topics in Chinese Studies (1-4 cr.)  
Graduate colloquium on aspects of Chinese languages, literature, thought, or society. Topics will vary. A substantial portion of course work and readings will be in Chinese. With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.
- EALC-C 521-522 Readings in Chinese Literature I-II (3-3 cr.) Readings and discussions of works in Chinese literature of different genres: poetry, prose, and drama. With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.
- EALC-C 557 Chinese in Humanities (3 cr.) P: grade of B or better in C544 (C402) or equivalent proficiency. Advanced language practice associated with authentic academic texts in humanities disciplines. Emphasis on interpreting, analyzing, and presenting Chinese cultural concepts, artifacts, and events from a global perspective for an authentic purpose and within a performance assessment framework.
- EALC-C 558-559 Readings in Chinese Literary Criticism I-II (3-3 cr.) With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.
- EALC-C 561-562 Readings in Chinese Social and Political Texts I-II (3-3 cr.) With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.
- EALC-C 567 Chinese in Social Sciences (3 cr.)  
P: grade of B or better in C544 (C402) or equivalent proficiency. Advanced language practice associated with authentic academic texts in social science disciplines. Emphasis on interpreting, analyzing, and presenting Chinese cultural concepts, practices, and events, from a global perspective for an authentic purpose and within a performance assessment framework.
- EALC-C 571-572 Readings in Chinese Philosophical Texts I-II (3-3 cr.) With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.
- EALC-C 581-582 Readings in Chinese Historical Texts I-II (3-3 cr.) With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.

### Seminars and Research Methods Courses

- EALC-C 511 Basic Reference Works in Chinese Studies (3 cr.) P: C507 or consent of instructor. Instruction in reading and using basic general reference tools for all aspects of Chinese studies.
- EALC-C 600 Seminar in Chinese Studies (3-4 cr.) Graduate seminar on aspects of Chinese literature, thought, or society. Topics will vary. A substantial portion of course work and readings will be in Chinese. With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.
- EALC-C 651 Seminar in Traditional Chinese Literature (4 cr.)
- EALC-C 671 Seminar in Modern Chinese Literature (4 cr.)
- EALC-C 681 Seminar in Chinese Thought (4 cr.)

### Special Research

- EALC-E 595 Individual Readings (1-6 cr.) Intended for advanced students. May be repeated with consent of the Director of Graduate Studies.
- EALC-C 701 M.A. Thesis (arr. cr.) This course is eligible for a deferred credit.
- EALC-C 801 Ph.D. Thesis (arr. cr.)
- EALC-G 901 Advanced Research (arr. cr.)

## Japanese

### Language and Linguistics Courses

- EALC-J 101-102 Elementary Japanese I-II (2-2 cr.)
- EALC-J 201-202 Second-Year Japanese I-II (2-2 cr.)
- EALC-J 533-534 Third-Year Japanese I-II (3-3 cr.)
- EALC-J 543-544 Fourth-Year Japanese I-II (3-3 cr.) P: A grade of C or better in J534 or equivalent proficiency. Emphasis on advanced reading skills.
- EALC-J 506-507 Literary Japanese I-II (3-3 cr.) P: Grade of C or better in J534 or equivalent proficiency. A basic outline of the varieties of written Japanese known collectively as bungotai or "literary Japanese." Initial emphasis on reading and close rhetorical and grammatical analysis of genres from the 10th through 15th centuries, with later attention to other periods and texts.
- EALC-J 520 Introduction to Japanese Linguistics (3 cr.) Linguistic phenomena in Japanese from the descriptive and comparative points of view. Development of linguistic problem-solving skills, including consideration of sociological issues.
- EALC-J 580 Japanese for Sinologists (3 cr.) P: A grade of B or better in J202 or equivalent proficiency. Introduction to Japanese scholarship on China. Emphasis on grammatical structures and stylistic conventions. Can be repeated with different content up to two times for up to nine credits.
- EALC-J 581-582 Modern Academic and Professional Japanese I-II (3-3 cr.)

### Language Pedagogy Courses

- EALC-J 525 Teaching Japanese as a Foreign/Second Language (3 cr.) Designed for graduate and advanced undergraduate students who have an interest in acquiring knowledge, skills, and experience in teaching Japanese as a foreign language. Taught in a seminar-practice format, the course examines the contemporary paradigms of foreign language instruction, identifies critical issues in language pedagogy, and explores various techniques of teaching the four language skills (speaking, listening, reading, and writing). Active participation in the class is mandatory.
- EALC-J 527 Practicum in Japanese Language Pedagogy (2-3 cr.) This course is eligible for deferred credit. Supervised application of language pedagogy. In an actual classroom, students will apply the theories, paradigms, and approaches to language learning they have studied. Practicum experience developed in consultation with the advisor, with approval of the Director of Graduate Studies.
- EALC-J 598 Pedagogy Project (1-4 cr.) This course is eligible for deferred credit. Demonstration of pedagogical understanding and skills. The project may take either of two forms: empirical study of pedagogical issues or significant materials development (e.g., set of course materials, course Web site, multimedia learning modules, testing instruments). Developed in consultation with the advisor, with approval of the Director of Graduate Studies.

### Literature Courses

- EALC-J 505 Topics in Japanese Studies (1-4 cr.) Graduate colloquium on aspects of Japanese literature, thought, or society. Topics will vary. A substantial portion of course work and readings will be in Japanese. With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.
- EALC-J 521 Readings in Traditional Japanese Literature (3 cr.) Examination of major authors, works, genres, and criticism. With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.
- EALC-J 522 Readings in Modern Japanese Literature (3 cr.) Examination of major authors, works, genres, and criticism. With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.
- EALC-J 531-532 Readings in Japanese Social and Political Texts I-II (3-3 cr.)
- EALC-J 541-542 Readings in Japanese Historical Texts I-II (3-3 cr.) With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.
- EALC-J 551-552 Readings in Japanese Literary Criticism I-II (3-3 cr.) With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.



- EALC-J 593 Translating Japanese Literature (3 cr.) This course is a workshop that provides practice in producing polished, literary translations from Japanese to English. Secondary goals include developing skills in literary analysis through close-readings of primary texts, and reading of secondary materials on translation theory, narrative voice, poetic meter and technique. For students beyond third-year proficiency.

### Special Research

- EALC-E 496 Foreign Study (East Asian Exchange Programs) (arr. cr.)
- EALC-E 595 Individual Readings (1-6 cr.) This course is eligible for deferred credit. Intended for advanced students. May be repeated with consent of the Director for Graduate Studies.
- EALC-J 701 M.A. Thesis (arr. cr.) This course is eligible for deferred credit.
- EALC-J 801 Ph.D. Thesis (arr. cr.) This course is eligible for deferred credit.
- EALC-G 901 Advanced Research (arr. cr.) This course is eligible for deferred credit.

### Seminars and Research Methods Courses

- EALC-J 511 Research Methods in Japanese Studies (3 cr.) Basic reference works in Japanese and Western languages, methods, and tools of research.
- EALC-J 600 Seminar in Japanese Studies (3-4 cr.) Graduate seminar on aspects of Japanese literature, thought, or society. Topics will vary. A substantial portion of course work and readings will be in Japanese. With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.
- EALC-J 641 Seminar in Premodern Japanese History (4 cr.) With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.
- EALC-J 642 Seminar in Modern Japanese History (4 cr.) With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.
- EALC-J 651 Seminar in Modern Japanese Literature (4 cr.) Seminar in modern Japanese literature and criticism. The topic will vary depending on the year the course is offered. With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.
- EALC-J 653 Seminar in Traditional Japanese Literature (4 cr.) Seminar in pre-modern Japanese literature and criticism. The topic will vary depending on the year the course is offered. With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.
- EALC-J 681 Seminar in Japanese Thought (4 cr.)

### Korean

- EALC-K 101-102 Elementary Korean I-II (2-2 cr.)

- EALC-K 201-202 Second-Year Korean I-II (2-2 .)
- EALC-K 431-432 Readings in Modern Korean Literature I-II (3-3 .)
- EALC-K 501-502 Fourth-Year Korean I-II (3-3 cr.) P: A grade of C or better in EALC K302 or equivalent proficiency. Emphasis on advanced reading skills, featuring authentic writings such as newspaper editorials, essays, movie scenarios, and television news.
- EALC-K 505 Topics in Korean Studies (1-4 cr.) Graduate colloquium on aspects of Korean literature, thought, or society. Topics will vary. A substantial portion of course work and readings will be in Korean. With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.
- EALC-K 520 Introduction to Korean Linguistics (3 cr.) This course will survey the linguistic structure of Korean, from a typological and function-oriented perspective. The topics dealt with include: word order, basic sentence structure, semantics and pragmatics of noun-particles, clause connectors and sentence-final modal suffixes, the temporal system, causatives and passives, conversational styles, speech styles and honorifics. First-year Korean (or its equivalent) is recommended; otherwise, consult the instructor.
- EALC-K 527 Practicum in Korean Language Pedagogy (2-3 cr.) Supervised application of language pedagogy. In an actual classroom, students will apply the theories, paradigms, and approaches to language learning they have studied. Practicum experience developed in consultation with the advisor, with approval of the Director of Graduate Studies.
- EALC-K 533-534 Third-Year Korean I-II (3 cr.)
- EALC-K 598 Pedagogy Project (1-4 cr.) Demonstration of pedagogical understanding and skills. The project may take either of two forms: empirical study of pedagogical issues or significant materials development (e.g., set of course materials, course Web site, multimedia learning modules, testing instruments). Developed in consultation with the advisor, with approval of the Director of Graduate Studies.
- EALC-K 600 Seminar in Korean Studies (3-4 cr.) Graduate seminar on aspects of Korean literature, thought, or society. Topics will vary. A substantial portion of course work and readings will be in Korean. With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.

### Culture and Area Courses

- EALC-E 394 Business and Public Policy in Japan (3 .)
- EALC-E 496 Foreign Study (East Asian Exchange Programs) (arr. .)
- EALC-E 505 Topics in East Asian Studies (1.5-4 cr.) With consent of the Director of Graduate Studies,

may be repeated for no more than 12 hours of credit when topic varies.

- EALC-E 526 Computer-Enhanced East Asian Language Learning (3 cr.) P: Basic computer literacy. An examination of research and findings on the effectiveness of technology in language-skill development, and an exploration of the use of computer technology in foreign language learning, to equip students with concepts and tools to improve language studies.
- EALC-E 530 Studies in Japanese Film (3 cr.) Study of Japanese film in the context of its history and culture. Topics will vary depending on the year the course is offered. Some examples include: an introduction to Japanese film; gender and sexuality in Japanese film. May be repeated with a different topic for a maximum of 6 credit hours.
- EALC-E 533 Studies in Chinese Cinema (3 cr.) Critical and historical perspectives on Chinese cinema from the 1930s to the 1990s, including Taiwan and Hong Kong. Lectures and readings on the silent era, melodrama, musical, minority film, adaptation, the fifth generation, ideology, sexuality, urban cinema, and women's cinema.
- EALC-E 553 Hiroshima: History, City, Event (3 cr.) Uses the history of the city of Hiroshima as a lens on urban history in Japan and globally, with examination of origin of cities; early modern political and economic arrangements leading to Hiroshima's success; modern change and continued importance; its place in modern war; the atomic bombing and aftermath; memory of the bomb and wider atomic cultures in Japan and the United States.
- EALC-E 554 Society and Education in Japan (3 cr.) Survey of social change in Japan with a focus on educational institutions, patterns of learning, educational thought, and the spread of literacy.
- EALC-E 555 Visual Culture of Modern Japan (3 cr.) History of visual culture in modern Japan in the context of social and cultural change. Emphasis on print cultures and painting and on the rise of photography and lithography during the emergence of modern mass consumerism. Considerable focus on the post-WWII era and the globalization of Japanese visual culture.
- EALC-E 574 Early Chinese Philosophy (3 cr.) Origins of Chinese philosophical tradition in the classical schools of Confucianism, Taoism, Mohism, and Legalism. Explores contrasting agendas of early Chinese and Western traditions.
- EALC-E 590 Contemporary Chinese Politics (3 cr.) In-depth introduction to the scholarly study of Chinese politics. Important topics include elites, institutions, political culture, ideology, policy making, protest, and center-local relations. Attention paid to issues of research methodology and primary resources.
- EALC-E 592 Political Economy of East Asia (3 cr.) Examines the relationship between political circumstances and economic development through the experience of East Asia since World War II.

Particular attention is given to the question of the state's role in promoting growth. Comparisons of countries throughout East Asia are combined with transnational and international perspectives.

- EALC-E 593 China's Political Economy (3 cr.) Examination of China's development trajectory, the policy process, the political activism of marginalized groups and the emerging middle class, and signs that economic change is alternatively promoting democratization, political decay, or the entrenchment of the Communist Party. Historic and comparative perspectives ranging from case studies to macro analyses will be used.
- EALC-E 595 Individual Readings (1-6 cr.) This course is eligible for deferred credit. Repeatable with consent of graduate advisor.
- EALC-E 596 Readings in Pedagogy (1-3 cr.) Individualized readings in contemporary paradigms, critical issues, and techniques of teaching Asian languages. With consent of the Director of Graduate Studies, may be repeated for a maximum of 6 credit hours.
- EALC-E 597 M.A. Essay (1-4 cr.) This course is eligible for deferred credit. A capstone project recommended only for students pursuing a terminal M.A.; the essay is intended to strengthen and demonstrate control over the variety of scholarly skills learned through graduate course work, rather than to demonstrate potential to undertake doctoral work. Developed in consultation with the student's advisor with the approval of the Director of Graduate Studies.
- EALC-E 598 International Relations of East Asia (3 cr.) Graduate seminar exploring East Asian international relations. Students will develop tools to think critically about the foreign policy opportunities and challenges facing the major countries within the region, including the United States. Topics include security issues, political affairs, and economic relations, which are experiencing rapid change in the 21st century. With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.
- EALC-E 600 Seminar in East Asian Studies (4 cr.) Studies in history, social sciences, and culture. Topics vary by semester depending on student needs and interests. With consent of the Director of Graduate Studies, may be repeated for no more than 12 hours of credit when topic varies.
- EALC-E 604 Seminar in East Asian Studies Scholarship (4 cr.)
- EALC-E 700 M.A. Thesis (arr. cr.) This course is eligible for deferred credit.

### Cross-Listed Courses

#### Anthropology

P600 Seminar in Prehistoric Archaeology (3 cr.)

#### Central Eurasian Studies

R595 Politics of Identity in China and Inner Asia (3 cr.)

### Comparative Literature

C546 Sexuality and the Arts (4 cr.)

C574 Japanese-Western Studies (4 cr.)

C575 Chinese-Western Studies I (4 cr.)

C576 Comparative Approaches to Chinese Literature (4 cr.)

### Fine Arts

A560 Special Studies in Chinese Art (4 cr.)

A564 Art and Archaeology of Early China (4 cr.)

A566 Early Chinese Painting (4 cr.)

A567 Later Chinese Painting (4 cr.)

A662 Problems in Chinese Painting (4 cr.)

### Folklore and Ethnomusicology

F600 Asian Folklore/Folk Music (3 cr.)<sup>1</sup>

### History

G529 Modern Japan (3 cr.)

H675 Colloquium in East Asian History (4 cr.)

H775 Seminar in East Asian History (4 cr.)<sup>1</sup>

### Political Science

Y333 Chinese Politics (3 cr.)

Y334 Japanese Politics (3 cr.)

Y557 Comparative Politics Approaches and Issues (3 cr.)<sup>1</sup>

Y657 Comparative Politics (3 cr.)<sup>1</sup>

### Religious Studies

R554 Religions of East Asia (3 cr.)

R654 The Taoist Tradition (3 cr.)

R655 East Asian Buddhism (3 cr.)

R657 Religion in Japan (3 cr.)

### Theatre, Drama, and Contemporary Dance

T468 Asian Performance (3 cr.)<sup>1</sup>

<sup>1</sup> This course will count toward fulfilling departmental requirements when it deals substantially with East Asian materials.

## Economics

### College of Arts and Sciences

Departmental E-mail: [econgrad@indiana.edu](mailto:econgrad@indiana.edu)

Departmental URL: <https://economics.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Science, Doctor of Philosophy, Master of Arts, Master of Arts for Teachers in Economics

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

### Master of Science (M.S.) in Economics

#### Admission Requirements

Undergraduate major or substantial course work in Economics, Engineering, Mathematics, Statistics or Physics. Students seeking admission may apply to the Department of Economics online. In addition to a completed application, prospective students must include at least three letters of recommendation, official undergraduate transcripts, and scores on the Graduate Record Examination General Test.

#### Grades

Students must maintain a minimum GPA of B (3.0) in order to remain in good standing in the Graduate School. Courses to be counted toward the degree must be passed with a grade of B- (2.7) or better.

#### Course Requirements

A total of 30 credit hours is required for this degree. All students take the same set of three classes in each of the first two semesters. The required academic core includes:

- ECON-M500: Mathematics for Economists
- ECON-M501: Microeconomic Theory I
- ECON-M504: Econometrics I
- ECON-M511: Microeconomic Theory II
- ECON-M502: Macroeconomics
- ECON-M514: Econometrics II

In the third semester, all students will take ECON-M517, Computational Economics.

Students will choose either the Game Theory Track (Track 1) or the Financial Economics (Track 2) in their third semester.

Courses Required for Game Theory Track (Track 1):

- ECON-M516: Game Theory
- ECON-M518: Econometrics: Big Data

Courses Required for Financial Economics (Track 2):

- ECON-M513: Financial Economics
- ECON-M524: Financial Econometrics

Thesis:

No thesis is required

### Doctor of Philosophy (Ph.D.) in Economics

#### Admission Requirements

Twenty-five (25) credit hours of social science and business, including intermediate economic analysis. First-year differential and integral calculus and one semester of linear algebra are required for the Ph.D. and the M.A. Deficiencies in economics must be removed without graduate credit. Graduate Record Examination General Test required.

#### Grades

At least a B (3.0) average in work taken for an advanced degree.

#### Fields of Study

Choices of fields offered for qualifying examinations must be approved by the Graduate Studies Committee. Fields of study currently available within the department are advanced economic theory, development economics, development and transition economics, econometrics, games and experimental methods, growth theory, industrial organization, international trade, macroeconomics, monetary economics, and public economics. In addition, a supporting field in finance is available in partnership with the Kelley School of Business. Information about other fields may be obtained from the Director of Graduate Studies.

### Course Requirements

A total of 90 credit hours, including the theory sequence E520, E521, E522, E621, E622, and the econometrics-statistics sequence E571, E572, E671. All Ph.D. students join a workshop after passing their core theory exams. In addition, starting in their third year, students have to formally enroll in a workshop course for three semesters. There is a minimum requirement of 60 credit hours of course work. A minimum of 57 credit hours must be taken in economics. Up to 6 credit hours taken outside of the economics department in fulfillment of a supporting field approved by the DGS (such as finance) will count toward the 57 credit hours in economics.

### Research-Skill Requirement

Proficiency in mathematics, operations and decision technologies, computer science, or econometrics/applied statistics. Courses used to fulfill a research skill requirement do not carry graduate credit.

### Core Theory Examination

Core theory examinations in macroeconomics and microeconomics are taken at the end of the first year in residence. A maximum of two attempts will be permitted on each section. The exams are given in May, and retakes are administered later in the summer.

### Qualifying Field Examinations

The Ph.D. candidate must successfully complete at least three fields: one primary field and two supporting (secondary) fields. With approval of the Director of Graduate Studies, one of the two supporting fields may be taken outside the Department of Economics. A qualifying examination must be taken in the primary field; courses in all fields must be passed with grades of B or better. Consult the economics department's Graduate Study Guide for further information.

### Third-Year Paper Requirement

Ph.D. students are required to write a substantial research paper before the end of the spring semester of their third year. The paper will be presented at a departmental conference at the end of April or the beginning of May of the third year. The goal should be that this paper is of sufficient quality to be the first essay of the dissertation.

### Dissertation Proposal

The proposed research for the dissertation must be approved by the research committee and presented at a department workshop.

### Final Examination

Oral defense of the dissertation.

### Master of Arts (M.A.) Degree

(The department currently is not accepting students in this program.)

### Admission Requirements

Twenty-five (25) credit hours of social science and business, including intermediate economic analysis. First-year differential and integral calculus and one semester of linear algebra are required for the Ph.D. and the M.A. Deficiencies in economics must be removed without graduate credit. Graduate Record Examination General Test required.

### Course Requirements

A minimum of 30 credit hours, 24 of which must be taken in the Department of Economics, including 9 credits of theory and 6 credits of statistics. A minimum of 18 credit hours of course work in economics must be numbered E500 or above. Consult the Director of Graduate Studies for specific courses. Up to 6 credit hours are allowable for a thesis. In lieu of writing a thesis, a student may complete 6 credit hours of course work (beyond the required 30 credit hours) in one of the following research skills: operations and decision technologies, computer science, mathematics, or econometrics beyond E572. Courses used to fulfill a research skill requirement do not carry graduate credit.

### Master of Arts for Teachers (M.A.T.) Degree

(The department currently is not accepting students in this program.)

### Admission Requirements

Twenty-five (25) credit hours of social science and business, including intermediate economic analysis. Deficiencies in economics must be removed without graduate credit. Graduate Record Examination General Test required. An individual study program of 36 credit hours will be developed for each student, normally including only courses that may be taken for graduate credit.

### Doctor of Philosophy (Ph.D.) Minor in Economics

A candidate for a graduate degree in another department who elects to take Economics as an outside minor must take at least 12 hours of Economics from Indiana University Bloomington. Within these 12 hours, the candidate must take at least one semester each of Ph.D.-level microeconomic theory and macroeconomic theory. In most cases, ECON-E 521 and ECON-E 522 must be taken to meet these respective requirements. In exceptional cases approved by the Director of Graduate Studies, based on a student's prior record, the ECON-E 521/ECON-E 522 requirement may be waived and the higher level ECON-E 621/ECON-E 622 will satisfy the micro/macro theory requirement.

Within the 12 hours, the candidate must also take six additional hours of courses which carry credit for graduate degrees in Economics as listed in the Graduate School Bulletin. These courses must be selected in consultation with the Director of Graduate Studies. All courses taken to satisfy the requirements for an outside minor in Economics

must be passed with a grade of B (3.0) or better. A separate written or oral examination will not be required.

**Microeconomic and macroeconomic theory courses which may be used toward the minor:**

ECON-E 521 Theory of Prices and Markets I  
(Microeconomic Theory I)

ECON-E 621 Theory of Prices and Markets II  
(Microeconomic Theory II)

ECON-E 522 Macroeconomic Theory I

ECON-E 622 Macroeconomic Theory II

**Courses**

- **ECON-E 471 Econometric Theory and Practice I (3 cr.)**P: E370 or either MATH M119 or M211 or consent of instructor. Emphasis is on the probability and statistical theory underpinning the classical linear regression model. Special topics include finite and asymptotic properties of point and interval estimation, hypothesis testing and model building. Several software packages are used in computer lab applications.
- **ECON-E 472 Econometric Theory and Practice II (3 cr.)**P: E471. Emphasis is on the matrix formulation and computer estimation methods for single and multiple equation models using economic and business data. Attention is given to the assumptions required for testing sets of coefficients and model structures. Special topics include heteroscedasticity, multicollinearity, errors in variables, simultaneity, time-series analysis, limited dependent variables, sample selection, and alternatives to least-squares estimation.
- **ECON-E 501 Seminar in Economics (3 cr.)**P: Consent of instructor. Advanced topics in economics ranging across all fields.
- **ECON-E 502 Teaching Undergraduate Economics (3 cr.)**Planning, presenting, and evaluating undergraduate economics teaching. Content includes learning theory, instructional objectives, course planning, textbook selection, lecturing and discussion techniques, visual aids and simulation, constructing test and homework problems, grading, student evaluation of instruction, practical classroom teaching problems, and survey of evaluation literature.
- **ECON-E 520 Optimization Theory in Economic Analysis (3 cr.)**P: Calculus and linear algebra. Introduction to concepts and techniques of optimization theory applied in modern micro- and macroeconomics. Theory and application of Lagrange multipliers, comparative statics analysis, value functions and envelope theorems. Elements of dynamic programming and other methods of economic dynamics.
- **ECON-E 521 Theory of Prices and Markets I (3 cr.)**Develops the methodology of economic analysis and teaches the tools and language of price theory. Fundamental elements of consumer theory, producer theory, and economics of uncertainty.
- **ECON-E 522 Macroeconomic Theory I (3 cr.)**Introductory course on macroeconomic dynamics; covers growth models and asset pricing theories, endogenous growth theories, optimal growth problems, and competitive dynamic equilibrium models. Dynamic programming tools introduced as needed. All models are cast in a discrete time setup; presents deterministic and stochastic theories.
- **ECON-E 529 Economic History (3 cr.)**P: E521 or consent of instructor. Use of economic analysis and econometric techniques to examine topics in the development and institutions of the U.S. and European economies.
- **ECON-E 530 International Trade (3 cr.)**P: E521, E621, or consent of instructor. Introduction to theories of international trade (including such topics as pattern of trade, gains from trade, testing trade theories) and analysis of trade policies (including such topics as tariffs, quotas, and strategic trade policy).
- **ECON-E 541 Labor Market Analysis (3 cr.)**P: E520 or E521, or consent of instructor (Bloomington); P: Consent of instructor (Indianapolis). An analytical approach to the labor market. Theoretical underpinning and statistical testing of issues in demand and supply of labor, household decision making, human capital, contract theories, unionism, minimum wages, and discrimination.
- **ECON-E 550 Monetary Theory and Organization (3 cr.)**Theory and practice of monetary control; supply and demand functions for money; instruments of monetary control; channels through which money exerts an influence on the economy.
- **ECON-E 551 Monetary Economics II (3 cr.)**Introduces alternative models of monetary economies; covers topics in monetary economics such as money and growth and optimal money growth. The course takes a unified approach to macroeconomic policy, treating monetary and fiscal policy as jointly determining macroeconomic equilibria. May include discussion of empirical work on money.
- **ECON-E 571 Econometrics 1—Statistical Foundations (3 cr.)**P: Undergraduate courses in statistics and calculus. The probability bases for statistical estimation and testing are introduced in the context of issues, theories, and data found in economics. The classical linear regression model is presented as the starting point for multivariate analyses in econometrics. Students work with various computer programs in and out of the scheduled class periods.
- **ECON-E 572 Econometrics 2—Regression and Time Series (3 cr.)**P: E571 or equivalent.



Regression and time series. Departures from classical regression. Generalized least squares; heteroskedastic models; dynamic regression. Basic asymptotics. Measurement errors and instrumental variables. Some standard nonlinear models. Course covers theory and data analysis.

- **ECON-E 585 Industrial Organization and Control (3 cr.)**P: Consent of instructor (Indianapolis only). Analysis of interrelated structure, behavior, and performance in industrial markets and multi-market corporations; multidimensional nature of competitive processes. Public controls. Topics include patterns of oligopoly, vertical integration, entry barriers; “cartelized” coalescence, limit pricing, price discrimination, long-term contracts; capacity expansion and utilization, resource reallocation, and innovation.
- **ECON-E 591 Macro Topics in Economic Development (3 cr.)**P: E521, E522, or consent of instructor. Analysis of new theories of economic growth and various issues related to macroeconomic policy in less-developed countries. Topics include fiscal reform, exchange rate policy, financial liberalization, and money vs. exchange rate–based stabilization programs.
- **ECON-E 592 Trade Policy and Economic Development (3 cr.)**Examines the major issues surrounding the conduct of trade policy in less-developed countries. Covers arguments for and against import-substituting vs. export-promoting policies, the nature of optimal commercial policy, alternative strategies for liberalization of the trade regime, and the pros and cons of direct foreign investment.
- **ECON-E 621 Theory of Prices and Markets II (3 cr.)**P: E521, calculus, and linear algebra. Analysis of equilibrium, first- and second-order conditions; statistical derivation of demand and cost curves; activity analysis; general equilibrium; welfare economics; microeconomics of capital theory; pure oligopoly and game theory.
- **ECON-E 622 Macroeconomic Theory II (3 cr.)**P: E522, calculus, and linear algebra. Extends general equilibrium models from E522 by introducing nominal variables, monetary and fiscal policies; some exposure to alternative dynamic models, nominal and real rigidities, market imperfections, dynamically consistent policies. Numerical methods introduced to simulate dynamic stochastic general equilibrium models. Time series methods presented to discuss empirical implications of aggregate models.
- **ECON-E 624 Mathematical Economics I (3 cr.)**P: One year of calculus, one semester of linear algebra, or consent of instructor. Introduction to stochastic control theory with applications to economics. Covers Wiener process, stochastic integration, Ito’s lemma and the stochastic Bellman equation. Applications to economics include optimal growth theory, the inverse optimal problem, adjustment cost theory of supply, exhaustible resources, optimal consumption and portfolio rules, and transactions demand for money.
- **ECON-E 625 Mathematical Economics II (3 cr.)**P: One year of calculus, one semester of linear algebra, or consent of instructor. Mathematical analysis of problems of motion via Central Principle of Motion; dynamic efficiency of centralized and decentralized economic systems; differential games.
- **ECON-E 626 Game Theory (3 cr.)**P: E521, E621. Mathematical analysis of strategic interaction. Noncooperative games played once or repeatedly, with perfection or imperfect information. Necessary condition for a solution (equilibrium), as well as sufficient conditions (refinements). Cooperative games, such as bargaining and market games. Numerous applications, including experimental games.
- **ECON-E 627 Experimental Economics (3 cr.)**P: Intermediate microeconomics and statistics. Focuses on the use of laboratory experimental methods in applied microeconomics. Specific application areas will include the analysis of resource allocation mechanisms for both private and public goods and individual choice under uncertainty using both human and nonhuman subjects.
- **ECON-E 628 Advanced Macroeconomic Theory (3 cr.)**P: E622 or equivalent. The course provides an in-depth treatment of major areas in macroeconomics, advancing to the several frontiers at which its theory is currently most tested. These include convergence to rational expectations equilibrium, near-rational solutions, non-Walrasian equilibrium, and the management of incentives and macroeconomic disturbances through contractual arrangements.
- **ECON-E 629 Open Economy Macroeconomics (3 cr.)**P: E622. Combines international finance and open-economy macroeconomics with history and current functioning of the international financial system and the policy and exchange regime choices of countries within it. Explorations include determinants of current-account balances and exchange-rate dynamics as well as implications of the international mobility of goods, financial services, and capital, international portfolio and direct investment behavior, and financial derivatives.
- **ECON-E 630 International Trade II (3 cr.)**P: E530. Second part of the graduate sequence in international trade. Focuses on analyzing strategic situations in an international context. Topics include imperfect competition in international trade, strategic trade policy, trade policy under incomplete information, and tariff and quota games.
- **ECON-E 641 Quantitative Studies in Labor Economics (3 cr.)**P: E541, E571, and at least concurrent registration in E572 or consent of instructor. Emphasis on the application of statistical and econometric theory and methods in the analysis of current issues in labor economics. The application of models involving discrete choice, search, screening, signaling, contracts, tournaments, and

Markov processes to explain various labor market phenomena will be reviewed.

- **ECON-E 660 Public Economics I (3 cr.)**P: E621 or concurrent registration. Analysis of public expenditures and taxation from a microeconomic viewpoint. Topics include externalities, pure and impure public goods, efficiency and distributional effects of taxation, optimal taxation theory, benefit-cost analysis.
- **ECON-E 661 Public Economics II (3 cr.)**P: E660. In-depth analysis of selected aspects of public expenditures and taxation. Illustrative topics: intertemporal and aggregative effects of tax and expenditure policies, emphasizing saving and investment incentives; taxation of risky assets; taxation of imperfectly competitive industries; benefit-cost analysis under uncertainty; public choice.
- **ECON-E 671 Econometrics 3—Nonlinear and Simultaneous Models (3 cr.)**P: E572 or equivalent. Introduction to econometric theory. Parameter estimation for single and multiple equation systems. Inference and hypothesis testing. Monte Carlo studies.
- **ECON-E 672 Macroeconometrics (3 cr.)**P: E671 or equivalent. Advanced topics in econometrics. Estimation of dynamic equation systems. Spectrum analysis. Problems of design for large macroeconomic models.
- **ECON-E 673 Microeconometrics (3 cr.)**P: E572 or equivalent. Microeconometrics with applications to labor, health, and public economics. Extensive coverage of limited dependent variable and panel data models. Empirical implementation is an essential component of the course.
- **ECON-E 685 Advanced Industrial Organization (3 cr.)**P: E585. Extends the coverage in E585. Provides greater in-depth coverage of contemporary industrial organization problems from a theoretical perspective and provides coverage of important industrial organization topics not discussed in E585. Topics include mechanism design, signaling and screening, merger theory, incomplete contracting and the firm, and antitrust and regulation.
- **ECON-E 698 Comparative Economics and Economics of Transition (3 cr.)**P: Consent of instructor. Modern approaches to analysis of nonmarket economic systems and mechanisms. Emphasis on the incentives generated by these mechanisms and information flows in the system. Since the field of comparative economics is both theoretical and institutional, students are required to read both analytical pieces containing formal models and descriptive papers.
- **ECON-E 713 Seminar in Economic History (3 cr.)**P: E529 or consent of instructor. Advanced topics in economic history (U.S. and European) with particular emphasis on recent debates in the literature of the new economic history. Application of economic theory and econometric techniques to historical problems.
- **ECON-E 724 Seminar in Economic Theory (3-6 cr.)**Advanced topics in business cycles, general equilibrium, growth, mathematical economics, and welfare economics. Offered periodically.
- **ECON-E 730 Seminar in International Trade (3 cr.)**Third part of the graduate sequence in international trade; intended for those writing theses in the field. Focuses on a deeper understanding of topics such as the political economy of protection, cooperation in repeated tariff games, trade negotiations, and multinational enterprises.
- **ECON-E 748 Seminar in the Economics of Labor and Human Resource Development (3 cr.)**P: E541 or consent of instructor. Selection from current issues in labor: labor markets, comparative labor economics, human capital, workforce planning, and labor relations.
- **ECON-E 752 Seminar in Money (3 cr.)**Current topics in advanced monetary and banking theory. Preparation of a research paper and oral presentation to a seminar.
- **ECON-E 762 Seminar in Public Economics (3 cr.)**Advanced topics in public economics. Preparation of a research paper and oral presentation to the seminar.
- **ECON-E 770 Seminar in Econometrics (3 cr.)**Advanced topics in econometrics in time series and/or cross-sectional data analysis.
- **ECON-E 785 Seminar in Industrial Organization (3 cr.)**Third course in the graduate industrial organization sequence; intended for those writing in the field. Topics include bargaining, reputation, oligopoly, research and development, vertical restraints, entry deterrence, transaction costs, and international industrial organization.
- **ECON-E 792 Workshops in Problems of Development (3 cr.)**In-depth study of specific underdeveloped area or specific topic in problems of underdevelopment.
- **ECON-E 793 Seminar in Planning Strategies and Techniques (3 cr.)**P: E591. Analysis of strategic choices and planning methods in Western economies and socialist economies in transition. Theory and practice of planning in underdeveloped countries.
- **ECON-E 800 Research in Economics (1-6 cr.)**This course is eligible for a deferred grade.
- **ECON-E 808 Thesis (M.A.) (1-6 cr.)**This course is eligible for a deferred grade.
- **ECON-E 809 Thesis (Ph.D.) (1-12 cr.)**This course is eligible for a deferred grade.
- **ECON-E 810 Readings in Economic History (1-6 cr.)**This course is eligible for a deferred grade.

- **ECON-E 824 Readings in Economic Theory (1-6 cr.)** This course is eligible for a deferred grade.
- **ECON-E 830 Readings in International Trade (1-6 cr.)** This course is eligible for a deferred grade.
- **ECON-E 840 Readings in Economics of Labor and Human Resource Development (1-6 cr.)** This course is eligible for a deferred grade.
- **ECON-E 850 Readings in Monetary Economics (1-6 cr.)** This course is eligible for a deferred grade.
- **ECON-E 860 Readings in Public Economics (1-6 cr.)** This course is eligible for a deferred grade.
- **ECON-E 870 Readings in Advanced Econometrics (1-6 cr.)** This course is eligible for a deferred grade.
- **ECON-E 880 Readings in Industrial Organization (1-6 cr.)** This course is eligible for a deferred grade.
- **ECON-E 890 Readings in Development and Economics of Transition (1-6 cr.)** This course is eligible for a deferred grade.
- **ECON-M 500 Mathematics for Economists (3 cr.)** P: Calculus. Introduction to concepts and methods of constrained and unconstrained optimization theory applied in modern economics. Theory and application of Lagrange multipliers, comparative statics analysis, value functions and envelope theorems. Elements of dynamic programming and other methods of economic dynamics.
- **ECON-M 501 Microeconomic Theory I (3 cr.)** P: Calculus. The course develops the methodology and language of price theory. Partial equilibrium analysis of consumer theory, producer theory, and economics of uncertainty. Emphasis on comparative statics and the duality theory. Topics include welfare analysis, the theory of price indices, quality of goods, revealed preferences, the theory of derived demand, expected utility theory, attitudes toward risk, and various measures of riskiness.
- **ECON-M 502 Macroeconomics (3 cr.)** P: Calculus. General equilibrium modelling of economic growth, business cycle fluctuations, evolution of income and wealth inequality and technological progress. Analysis of monetary and fiscal policy and its effects on aggregate economic outcomes.
- **ECON-M 504 Econometrics I (4 cr.)** P: Calculus. Emphasis is on the probability and statistical theory underpinning the classical linear regression model used in economic applications. Special topics include finite and asymptotic properties of point and interval estimation, hypothesis testing and model building. Several software packages such as Stata or R are used in computer lab applications.
- **ECON-M 511 Microeconomic Theory II (3 cr.)** P: Calculus. General equilibrium theory; welfare economics; microeconomics of capital theory; monopoly, oligopoly and game theory, product differentiation, monopolistic competition. Price discrimination. Economics of Information including adverse selection, moral hazard and principal agent models.
- **ECON-M 513 Financial Economics (3 cr.)** P: ECON-M 501. The class covers theory and empirical evidence relevant to understanding the functioning of modern financial-asset markets. Topics include: present value, analysis of risk and return, asset pricing, modern portfolio theory, equilibrium in asset markets, arbitrage pricing theory, the capital asset pricing model, the efficient markets hypothesis, price bubbles and crashes, futures markets, derivative securities and option pricing models.
- **ECON-M 514 Econometrics II (4 cr.)** P: Calculus. Emphasis is on the matrix formulation and computer estimation methods for single and multiple equation models using economic and business data. Attention is given to the assumptions required for testing sets of coefficients and model structures. Special topics include heteroscedasticity, multicollinearity, errors in variables, simultaneity, time-series analysis, limited dependent variables, sample selection, and alternatives to least squares estimation.
- **ECON-M 516 Game Theory (3 cr.)** P: Calculus. Rigorous analysis of strategic interaction. Focus on non-cooperative games in normal and extensive form. Static and repeated games. The role of information in strategic interaction. Topics include mechanism design, auction theory and one and two sided matching.
- **ECON-M 517 Computational Economics (4 cr.)** P: Calculus. The course will begin with a solid introduction to programming in Matlab. The topics to be covered include first of all: calculation of value functions in discrete and in continuous time, solving Hamilton-Jacobi-Bellman equations, diffusions, Ito's Lemma, solving for asset prices implied by theoretical models. The second set of topics to be covered include computing best responses and Nash equilibria.
- **ECON-M 518 Econometrics: Big Data (3 cr.)** P: E 370, E 371 or equivalent. The course consists of discussion of how to import, clean and visualize data on the computer, an introduction to popular tools from machine learning and an overview on recent advances on combining machine learning methods with economic models to conduct causal inference. Use of software package R to analyze large models and large economic data sets.
- **ECON-M 524 Financial Econometrics (3 cr.)** P: ECON-M 504, ECON-M 514. The course covers the econometrics toolboxes that are useful to analyze financial market data, in particular, time series data. The goal is to understand and implement state-of-the-art econometric methods with the data at hand, providing answers to empirical questions. While the course intends to put more emphasis on implementation, and less on rigorous theory, learning some heuristics behind the theory is important part of the course. Topics include stationary time series analysis, persistency,

predictive regression, model selection, factor models, and advanced topics.

## Faculty

### Chairperson

Professor Michael Kaganovich\*

### Associate Chairperson

James M. Walker\*

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Distinguished Professors

Pravin Trivedi\* (Emeritus)

### Rudy Professor

Eric Leeper\* (Emeritus), Pravin Trivedi\* (Emeritus), George von Furstenberg\* (Emeritus)

### Walter Professor of Economics

Todd B. Walker\*

### Wisnewsy Professor of Human Studies

Joon Park\*

### Professors

Michael Alexeev\*, Lee Alston\*, Robert Becker\*, William Becker\* (Emeritus), Edward Buffie\*, Fwu-Ranq Chang\* (Emeritus), Yoosoon Chang\*, Gerhard Glomm\*, Michael Kaganovich\*, Paul Kuznets\* (Emeritus), Dean Lueck\*, Frank Page Jr.\*, Daniela Puzzello\*, James M. Walker\*, Elmus Wicker\* (Emeritus), Arlington Williams\* (Emeritus), Keli Xu\*

### Associate Professors

Mostafa Beshkar\*, Filomena Garcia\*, Bulent Guler\*, Volodymyr Lugovskyy\*, Christian Matthes\*, Elyce Rotella\* (Emeritus), Gustavo Torrens\*, Willard Witte\* (Emeritus), Ruli Xiao\*

### Assistant Professors

Ala Avoyan\*, Joshua Bernstein\*, Rupal Kamdar\*, Ahmad Lashkaripour\*, Laura Liu\*, Emerson Melo\*, Stefan Weiergraeber\*

### Director of Graduate Studies

Associate Professor Volodymyr Lugovskyy\*, Wylie Hall 229, (812) 855-8453

### Director of Master of Science Program

Professor Michael Alexeev\*, Wylie Hall 229, (812) 855-8453

## Educational Leadership and Policy Studies

### School of Education

Departmental E-mail: [elaps@indiana.edu](mailto:elaps@indiana.edu)

Department URL: <https://education.indiana.edu/faculty/departments/ELPS.html>

Departmental Phone Number: (812) 856-8370

Graduate Studies Office E-Mail: [educate@indiana.edu](mailto:educate@indiana.edu)

School of Education URL: [education.indiana.edu/](https://education.indiana.edu/)

Degrees and Programs: [education.indiana.edu/graduate/programs/index.html](https://education.indiana.edu/graduate/programs/index.html)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degree Offered

The Doctor of Philosophy (Ph.D.) degree is offered through the University Graduate School. In addition, the School of Education offers the Master of Science (M.S.) in Education, the Specialist in Education (Ed.S.), and the Doctor of Education (Ed.D.) degrees. For details, see the School of Education Graduate Bulletin.

#### Doctor of Philosophy Degree

##### Fields of Study

Higher Education; and History, Philosophy and Policy Studies in Education.;

##### Plan of Studies

The Ph.D. degree with a major in education is pursued under the direction of a committee appointed by the University Graduate School and the School of Education. As with other Graduate School doctoral programs, a minimum of 90 credit hours of course work is required. This includes a major (selected from the fields of study listed previously), a minor, a series of research courses, and a dissertation. Written and oral qualifying examinations are taken following course work; a final oral defense of the dissertation completes the program. Up to 30 credit hours of graduate course work may be transferred from other universities, with the approval of the advisory committee and the Graduate Studies Office.

### Admission

Admission recommendations are made by program area and School of Education admission committees and are based on graduate and undergraduate grades (especially in academic courses), scores on the General Test of the Graduate Record Examination (GRE), and letters of recommendation. The TOEFL examination is required for all international applicants. Online applications may be accessed through the School of Education Office of Graduate Studies Web site at the above URL.

Students earning a Ph.D. degree in education must fulfill all requirements of the University Graduate School (as found in this bulletin) and of the School of Education (as found in the School of Education Graduate Bulletin).

### Ph.D. in Higher Education

For more information about this degree, please visit the degree page.

<https://education.indiana.edu/programs/graduate/doctoral/phd-higher-education.html>

### Degree Requirements (90 cr.)

### Major Requirements (36 cr.)

These courses must be approved on the Plan of Studies by the student's doctoral advisory committee, Department Chair, and the Associate Dean for Graduate Studies. The courses in the major should include:

Higher Education Core Courses (15 cr.)

Early Inquiry Experience and Inquiry Linkage (6 cr.)  
Electives in the Major (15 cr.)

### Inquiry Core Requirements (12 cr.)

The Inquiry Core includes a survey course in research methodologies, and beginning courses in statistics, measurement, program evaluation, or in ethnographic, qualitative, quantitative, and historical research methods. Inquiry Core courses are to lay a rudimentary methodological foundation for applied inquiry courses in the major, and for dissertation research.

### Minor Requirements (12 cr.)

Course work should focus on the research and scholarship of an academic discipline that provides a useful perspective on the study of higher education. This perspective often influences the topic or methodology used in the dissertation. The minor may be any University Graduate School approved minor outside of the HESA program.

Alternatively, any twelve credits that form a single interdisciplinary minor may be approved by the University Graduate School. For this alternative, a faculty member from outside the higher education program (e.g., Sociology, Law, Educational Inquiry, Educational Policy, and Organizational Studies) must be a member of the student's Advisory Committee. A Minor Justification form must be submitted and approved by the Graduate Studies Office.

### Elective Requirements (15 cr.)

Fifteen hours can be used to further study an appropriate field, complete a second minor (minimum of 12 credit hours), or gain other professionally relevant knowledge.

Students are encouraged to enroll in six credit hours that provide a breadth of understanding of higher education as a field of study.

With Advisory Committee approval a student may use courses from other academic areas appropriate to research interests and professional objectives.

### Dissertation Requirements (15 credits)

795 Dissertation Proposal Preparation\* (3 cr.)

\*795 should be taken near the end of program of study, after passing the qualifying exam.

799 Doctoral Thesis (12 cr.)

### Ph.D. in History, Philosophy, and Policy in Education-Specialization in Education Policy Studies

For more information about this degree, please visit the degree page.

<https://education.indiana.edu/programs/graduate/doctoral/phd-history-philosophy-and-policy-in-education-spec-in-education-policy-studies.html>

### Degree Requirements (90 cr.)

#### Major Requirements (36 cr.)

These courses must be approved on the Plan of Studies by the student's doctoral advisory committee, Department Chair, and the Associate Dean for Graduate Studies. The courses in the major should include:

Policy Core (18 cr.)

Policy Context (12 cr.)

Students will select one of the following three concentrations:

- Higher Education Concentration
- Educational Leadership Concentration
- International and Comparative Education Concentration
- Individualized

Inquiry in the Major (6 cr.)

#### Inquiry Requirements (12 cr.)

The Inquiry Core includes a survey course in research methodologies, and beginning courses in statistics, measurement, program evaluation, or in ethnographic, qualitative, quantitative, and historical research methods. Inquiry Core courses are to lay a rudimentary methodological foundation for applied inquiry courses in the major, and for dissertation research.

#### Minor Requirements (12 cr.)

The minor must have integrity in its own right and must complement the major. The minor field must demonstrate wholeness within itself and contribute to the student's overall doctoral program. Minors are normally formulated within a single program area. However, an interdisciplinary or individualized minor is also possible. Interdisciplinary or individualized minors require a written description of the minor's underlying theme along with a rationale for each course's contribution to that theme through the Minor Justification form. This form should be submitted and approved by the Graduate Studies Office prior to enrolling in the minor courses. Major area courses may not be used in the minor.

#### Elective Requirements (minimum of 6 cr. but normally 15 cr.)

Courses in policy-relevant fields inside or outside the School of Education selected in consultation with the Advisory Committee. May be used for a second minor.

#### Dissertation Requirements (15 cr.)

795 Dissertation Proposal Preparation (3 cr.)

799 Doctoral Thesis (12 cr.)

### Ph.D. in History, Philosophy, and Policy in Education-Specialization in History of Education

For more information about this degree, please visit the degree page.

<https://education.indiana.edu/programs/graduate/doctoral/phd-history-philosophy-and-policy-in-education-spec-in-history-of-education.html>

### Degree Requirements (90 cr.)



### Major Requirements (36 cr.)

These courses must be approved on the Plan of Studies by the student's doctoral advisory committee, Department Chair, and the Associate Dean for Graduate Studies. The courses in the major should include:

- Required Major Courses (12 cr.)
- Electives in the Major (18 cr.)
- Inquiry Linkage and Early Inquiry Experience (6 cr.)

### Inquiry Requirements (9 cr.)

The Inquiry Core includes a survey course in research methodologies, and beginning courses in statistics, measurement, program evaluation, or in ethnographic, qualitative, quantitative, and historical research methods. Inquiry Core courses are to lay a rudimentary methodological foundation for applied inquiry courses in the major, and for dissertation research.

### Minor Requirements (12 cr.)

The minor must have integrity in its own right and must complement the major. The minor field must demonstrate wholeness within itself and contribute to the student's overall doctoral program. Minors are normally formulated within a single program area. However, an interdisciplinary or individualized minor is also possible. Interdisciplinary or individualized minors require a written description of the minor's underlying theme along with a rationale for each course's contribution to that theme through the Minor Justification form. This form should be submitted and approved by the Graduate Studies Office prior to enrolling in the minor courses. Major area courses may not be used in the minor.

### Elective Requirements (6-18 cr.)

A minimum of six (6) credits hours of electives must be taken, although you may exceed that total up to 18 credits with the approval of the advisory committee. You may choose a second minor field, which requires a minimum of 12 hours. All electives and courses for a second minor must be approved by the advisory committee.

### Dissertation Requirements (15 cr.)

795 Dissertation Proposal Preparation (3 cr.)  
799 Doctoral Thesis (12 cr.)

### Ph.D. in History, Philosophy, and Policy in Education-Specialization in Philosophy of Education

For more information about this degree, please visit the degree page.

<https://education.indiana.edu/programs/graduate/doctoral/phd-history-philosophy-and-policy-in-education-spec-in-philosophy-of-education.html>

### Degree Requirements (90 cr.)

### Major Requirements (36 cr.)

These courses must be approved on the Plan of Studies by the student's doctoral advisory committee, Department Chair, and the Associate Dean for Graduate Studies. The courses in the major should include:

- Core Requirements (6 cr.)
- Philosophy of Education and Other Foundations (12-15 cr.)

- Philosophy (9-12 cr.)
- Inquiry in the Major (6 cr.)

### Inquiry Requirements (9 cr.)

The Inquiry Core includes a survey course in research methodologies, and beginning courses in statistics, measurement, program evaluation, or in ethnographic, qualitative, quantitative, and historical research methods. Inquiry Core courses are to lay a rudimentary methodological foundation for applied inquiry courses in the major, and for dissertation research.

### Minor Requirements (12 cr.)

The minor must have integrity in its own right and must complement the major. The minor field must demonstrate wholeness within itself and contribute to the student's overall doctoral program. Minors are normally formulated within a single program area. However, an interdisciplinary or individualized minor is also possible. Interdisciplinary or individualized minors require a written description of the minor's underlying theme along with a rationale for each course's contribution to that theme through the Minor Justification form. This form should be submitted and approved by the Graduate Studies Office prior to enrolling in the minor courses. Major area courses may not be used in the minor.

### Elective Requirements (18 cr.)

Courses in fields relevant to philosophy of education selected in consultation with the advisory committee.

### Dissertation Requirements (15 cr.)

795 Dissertation Proposal Preparation (3 cr.)  
799 Doctoral Thesis (12 cr.)

### Ph.D. Minor in College Pedagogy Minor Requirements (12 cr.)

#### Required Courses (9 cr.)

C675 Supervised College Teaching\* (1-3 cr.)  
C750 Topical Seminar: Curriculum in Higher Education (1-6 cr.)  
C750 Topical Seminar: Learning and Teaching on the College Campus (1-6 cr.)

\*A course on teaching or teaching practicum within the student's department may be substituted to fulfill this requirement, but if so, an additional elective must be taken so that all 12 credits for the minor are out of department.

Students using this option would be taking 15 credits for the minor, 3 in department and 12 in Higher Education and Student Affairs.

#### Additional Required Course (3 cr.)

If all three required courses are taken, one elective course is needed. If a student does not need to take C675, the student needs to take two elective courses.

The doctoral minor in College Pedagogy does not require a minor qualifying exam.

### Ph.D. Minor in Education Law

The minor in Education Law is a 12-credit hour minor designed to meet the needs of PhD students in all areas of the IU School of Education and other degrees on campus.

The 12 credit hours of course work required for this minor cannot duplicate those taken in the major field.

### **Minor Requirements (12 cr.)**

#### **Required Courses (9 cr.)**

A608 Legal Perspectives on Education (3 cr.)

A615 Advanced School Law (3 cr.)

A675 Leadership in Special Education (3 cr.)

#### **Additional Required Courses (3 cr.)**

One relevant course (e.g., H520, H504, U553, C705, A720) from other departments or programs may be counted as education law courses at the discretion of the minor advisor, though no more than one such course may be counted toward the 12 credit minimum.

The doctoral minor in Education Law does not require a minor qualifying exam.

### **Ph.D. Minor in Educational Leadership**

Ph.D. students may minor in Educational Leadership by completing at least 12 credit hours of coursework in the program. Each minor student works with a faculty advisor from the program to help in the selection of four A-prefix courses that best contributes to the educational goals of the student. It is recommended that students try to include courses at the 600-level.

The doctoral minor in Educational Leadership does not require a minor qualifying exam.

### **Ph.D. Minor in Education Policy Studies**

The Minor in Education Policy Studies permits doctoral students majoring in other education fields or academic fields outside the School of Education to learn basic concepts, analytic techniques, and issues in the study of contemporary education policy at the state, national, and international levels.

### **Minor Requirements (12 cr.)**

#### **Required Courses (6 cr.)**

H605 Educational Policy and Reform (3 cr.)

And one of the following:

- H620 Seminar in Educational Policy Studies (3 cr.)
- H622 Seminar: Issues in Education Policy (3 cr.)

#### **Additional Required Course (6 cr.)**

Students pursuing this minor select two additional courses that help to acquaint them with fundamental areas relevant to policy studies: the context of policy, the politics of the policy process, the legal and financial aspects of policy, and topical issues courses.

Select two courses from the following:

A560 Political Perspectives on Education (3 cr.)  
 A608 Legal Perspectives on Education (3 cr.)  
 A631 Microeconomic Applications of Education (3 cr.)  
 C670 Problems in Financing Higher Education (3 cr.)  
 C705 Legal Aspects of Higher Education (3 cr.)  
 H504 History of American Education (3 cr.)  
 H525 Anthropology of Education (3 cr.)  
 H540 Sociology of Education (3 cr.)  
 H560 Education and Social Change (3 cr.)  
 H631 Social and Political Philosophy and Education (3 cr.)

H637 Topical Seminar (3 cr.)

Courses selected for the minor may not be used to meet substantive core requirements, and may not be from the student's primary field of specialization.

The doctoral minor in Education Policy Studies does not require a minor qualifying exam.

### **Ph.D. Minor in Foundations of Education**

This minor introduces students to the use of sociological and anthropological research in the study of education. It encompasses the intellectual foundations of these social sciences, the educational theories and findings of scholars in these disciplines, and the research methodologies of these disciplines that are relevant to educational research.

The twelve (12) credit hours of course work required for this minor cannot duplicate those taken in the major field. Courses may not be counted toward core and elective credit requirements.

### **Minor Requirements (12 cr.)**

#### **Required Course (6 cr.)**

Select two courses from the following:

H504 History of American Education (3 cr.)

H525 Anthropology of Education (3 cr.)

H530 Philosophy of Education (3 cr.)

H540 Sociology of Education (3 cr.)

#### **Additional Required Course (6 cr.)**

Select two other courses in consultation with your advisor.

The doctoral minor in Foundations of Education does not require a minor qualifying exam.

### **Ph.D. Minor in Higher Education**

Ph.D. students may minor in Higher Education and Student Affairs by completing at least 12 credit hours of coursework in the program. Each minor student works with a faculty advisor from the program to help in the selection of a set of courses that best contributes to the educational goals of the student. No more than 6 credit hours will be accepted by transfer of graduate credit from another university.

The doctoral minor in Higher Education does not require a minor qualifying exam.

### **Ph.D. Minor in History of Education**

The minor in History of Education requires at least 12 semester hours of courses approved by a faculty advisor in the program area. The course work required for this minor cannot duplicate those taken in the major field. Courses may not be counted toward core and elective credit requirements.

### **Minor Requirements (12 cr.)**

#### **History of Education Core (6 cr.)**

H504 History of American Education (3 cr.)

C654 Higher Education in the United States (3 cr.)

In special circumstances, the advisor for the minor may approve a substitute for the second foundations core course, such as an additional 600-level H-course in the history of education taught in the School of Education

beyond what is required for the history of education specialization.

### **Specialization (6 cr.)**

Select 6 hours from the following courses:

H590 Independent Study or Research in History, Philosophy, and Comparative Education (3 cr.)  
H601 Historical Methods (3 cr.)  
H637 Topical Seminar on a history of education topic (3 cr.)

In special circumstances, the advisor for the minor may approve the substitution for one of the two specialization courses a relevant graduate course in history taught in the History Department or another relevant department.

No more than 3 transfer credits may be applied to fulfilling the requirements for the minor.

The doctoral minor in History of Education does not require a minor qualifying exam.

### **Ph.D. Minor in International and Comparative Education**

#### **Minor Requirements (12 cr.)**

#### **Required Courses (6 cr.)**

H551 Comparative Education I (3 cr.)

Select one course from the following:

H552 Comparative Education II (3 cr.)  
H637 Topical Seminar (3 cr.)

#### **Additional Required Course (6 cr.)**

Select two courses from the following:

H525 Anthropology of Education (3 cr.)  
H540 Sociology of Education (3 cr.)  
H552 Comparative Education II (if not taken in the core) (3 cr.)  
H560 Education and Change in Societies (3 cr.)  
H620 Seminar in Educational Policy Studies (3 cr.)  
H631 Social and Political Philosophy and Education (3 cr.)  
H637 Topical Seminar (if not taken in the core) (3 cr.)

At least one of the four total courses must be at the 600 level.

The doctoral minor in International and Comparative Education does not require a minor qualifying exam.

### **Ph.D. Minor in Philosophy of Education**

#### **Minor Requirements (12 cr.)**

#### **Educational Foundations Core (6 cr.)**

H530 Philosophy of Education (3 cr.)  
One other 500-level H-course in the School of Education approved by the advisor for the minor (3 cr.)

For most students, the second foundations core course should be:

H504 History of American Education (3 cr.)

For students whose Ph.D. major already includes H504, the second foundations core course may be:

H510 Foundations of Educational Inquiry (3 cr.)  
H525 Anthropology of Education (3 cr.)

H540 Sociology of Education (3 cr.)  
H560 Education and Change in Societies (3 cr.)

In special circumstances, the advisor for the minor may approve a substitution for the second foundations core course, such as an additional 600-level H-course in the philosophy of education taught in the School of Education beyond what is required for the philosophy of education specialization.

### **Philosophy of Education Specialization (6 cr.)**

In most instances, the specialization will consist of two 600-level H-courses in the philosophy of education taught in the School of Education.

In special circumstances, the advisor for the minor may approve the substitution for one of the two specialization courses a relevant graduate course in philosophy taught in the Philosophy Department or a 500-level H-course in the philosophy of education taught in the School of Education.

In all cases, the student must complete at least one 600-level H-course in the philosophy of education taught in the School of Education.

The doctoral minor in Philosophy of Education does not require a minor qualifying exam.

### **Ph.D. Minor in Foundations of Education**

This minor introduces students to the use of sociological and anthropological research in the study of education. It encompasses the intellectual foundations of these social sciences, the educational theories and findings of scholars in these disciplines, and the research methodologies of these disciplines that are relevant to educational research.

The twelve (12) credit hours of course work required for this minor cannot duplicate those taken in the major field. Courses may not be counted toward core and elective credit requirements.

#### **Minor Requirements (12 cr.)**

#### **Required Course (6 cr.)**

Select two courses from the following:

H504 History of American Education (3 cr.)  
H525 Anthropology of Education (3 cr.)  
H530 Philosophy of Education (3 cr.)  
H540 Sociology of Education (3 cr.)

#### **Additional Required Course (6 cr.)**

Select two other courses in consultation with your advisor.

The doctoral minor in Foundations of Education does not require a minor qualifying exam.

### **Ph.D. Minor in Race and Racism in Education**

#### **Minor Requirements (12 cr.)**

#### **Required Course (3 cr.)**

EDUC-C 750 Topical Seminar: Critical Race Theory in Education (3 cr.)

#### **Elective Courses (9 cr.)**

Elective courses involve substantial critical analysis of race and racism in education. Approved courses include:

EDUC-C 692 Equity in Higher Education (3 cr.)

EDUC-H 637 Topical Seminar: History of African American Education or EDUC-A 552 (cross-listed with AAAD-A 552) History of the Education of Black Americans (3 cr.)

EDUC-H 637 Topical Seminar: History of Latino Education (3 cr.)

EDUC-J 664 Contemporary Curriculum Discourses (3 cr.)

EDUC-N 716 Topical Seminar in Mathematics Education: Equity in Mathematics Education (3 cr.)

EDUC-P 674 Topical Seminar: Equity-Centered Research course (3 cr.)

EDUC-P 674 or 633 Topical Seminar: Funds of Knowledge (3 cr.)

EDUC-P 674 Topical Seminar: Race Culture, Trauma & Learning (3 cr.)

EDUC-P 681 Psychology of Cultural Diversity: Equity and Opportunity in Public Education (3 cr.)

Any other relevant course approved by student's Advisory Committee.

The doctoral minor in Race and Racism in Education does not require a minor qualifying exam.

## Faculty

### Dean

Professor Anastasia Morrone

### Associate Dean for Graduate Studies

Professor Sarah Theule Lubieniski

### Department Chair

Professor Vasti Torres

## Graduate Faculty

Please visit the Faculty Directory on the School of Education website for an updated listing of faculty.

<https://education.indiana.edu/about/directory/index.html?status=Faculty>

## English

### College of Arts and Sciences

Departmental E-mail: [engdept@indiana.edu](mailto:engdept@indiana.edu)

Departmental URL: [www.indiana.edu/~engweb/](http://www.indiana.edu/~engweb/)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

## Curriculum

### Degrees Offered

Master of Arts, Master of Fine Arts, and Doctor of Philosophy

### Special Departmental Requirements

(See also general University Graduate School requirements.)

## Admission Requirements

The application deadline for the M.F.A. in Creative Writing and the M.A./Ph.D. and M.A. programs in English is January 2 of each year for the following fall. Undergraduate major or its equivalent is required. The Graduate Record Examination is no longer required for admission. Submission of scores is purely optional and the department will continue to review any scores provided.

A potentially superior student who has not majored in English may be admitted conditionally, but must remove deficiencies without graduate credit. Students who wish to be admitted for the M.A./Ph.D., M.A., or M.F.A. in Creative Writing must submit samples of their work.

## Foreign Language Requirements

For specific M.A. concentrations (see descriptions) and the Ph.D. with Concentration in Rhetoric, students will demonstrate reading proficiency in one foreign language. For the Ph.D. with a Concentration in Literature, students will demonstrate either (a) proficiency in depth in one foreign language, or (b) reading proficiency in two foreign languages. Students will select their foreign language(s) in consultation with the Director of Graduate Studies. With the approval of the Director of Graduate Studies, students may substitute an approved research skill in lieu of a second foreign language proficiency.

Students may, subject to the approval of the Director of Graduate Studies, fulfill the research-skill requirement by completing two graduate-level courses (or their equivalent) in the areas of Ancient Languages, Specialized Archival Research, or Technology Assisted Research Methodologies. Such courses may be counted for graduate credit in a student's program of study provided such courses are listed in this bulletin as carrying graduate credit. Each course must be passed with a grade of B (3.0) or higher to satisfy the proficiency requirement.

## Combined B.A. and M.A.

Candidates for a combined degree must fulfill all requirements for the M.A. (including where necessary the language requirement), as well as general and major requirements for the B.A. in English. Upon completion of the 116 credits, including fulfillment of requirements for the English major, students with a minimum GPA of 3.5 overall and 3.7 in English may apply for conditional admission to the graduate program their senior year, which may be counted toward the completion of the M.A. degree in a fifth year of study. (At the discretion of the Director of Graduate Studies, an otherwise qualified student who is still completing an honors thesis may apply for conditional admission.) No courses used to satisfy the B.A. requirements may be applied toward the M.A.

## Grades

M.A. students must maintain a 3.0 (B) grade point average; M.F.A. and Ph.D. students, a 3.5 grade point average. Admission to the Ph.D. normally requires a 3.7 grade point average and the recommendations of graduate faculty.

## Master's Degrees

### Master of Arts Degree with Concentration in Literature Course Requirements

A minimum of 30 credit hours, including:



1. One 700-level seminar
2. At least two courses in fields of literature and culture before 1800
3. At least two courses in fields of literature and culture after 1800

Up to 8 credit hours in graduate courses outside the department may, with the prior approval of the Director of Graduate Studies, be counted toward the degree.

**Foreign Language:** One, reading proficiency. Language competency will be verified by the relevant foreign language department or program.

**Thesis:** Optional; if elected, 4 hours of credit.

**Final Examination:** None.

### **Master of Arts Degree with Special Field Concentration**

#### **Course Requirements**

A minimum of 30 credit hours, including

1. One 700 level seminar
2. At least three courses in a single area of concentration to be chosen in consultation with the director of graduate studies (for example, a genre such as the novel, a period such as the Middle Ages, a specialty such as postcolonial studies, American literature and culture, feminist theory, or composition, literacy, and culture).

Up to 8 credit hours in graduate courses in a related field outside the department may, with the prior approval of the Director of Graduate Studies, be counted toward the degree.

**Foreign Language:** One, reading proficiency. Language competency will be verified by the relevant foreign language department or program.

**Thesis:** Optional; if elected, (4 hours of credit).

**Final Examination:** None.

**Note:** Students wishing to enter the doctoral program on completion of this M.A. must apply for admission. For admission to the Ph.D. program with concentration in literature, candidates must satisfy the distribution requirements for the M.A. in literature.

### **Master of Arts Degree with Concentration in Writing**

#### **Course Requirements**

W611–W612 or W613–W614; five departmental courses in literature, literary criticism, or English language. Poets may substitute Comparative Literature C570 Theory and Practice of Translation for one of the five required departmental courses; writers of fiction may substitute Theatre and Drama T453 or T454 Playwriting or T458 Playwriting.

**Thesis:** Required; the candidate must submit, for 4 hours of credit, a body of creative writing of high literary merit and genuine promise.

**Final Examination:** None.

### **Master of Arts Degree with Concentration in Language**

#### **Course Requirements**

A minimum of 30 credit hours, including

1. G500, G780.
2. At least 12 further credit hours in English language courses, of which at least one course must be selected from G601, G602, G651, and G655.

**Thesis:** Optional; if elected, 4 hours of credit.

**Final Examination:** A four-hour written examination. See Director of Graduate Studies for details.

### **Master of Arts for Teachers Degree**

**Prerequisite**  
Public school certification in English. Applicants lacking no more than 6 credit hours for certification may be permitted to complete the certification requirements as part of the degree program.

#### **Course Requirements**

A total of 30 credit hours, in graduate English courses (at least 24 of these 30 credit hours must be taken on the Bloomington campus); if a minor is to be professionalized, at least 12 credit hours in the subject area. No undergraduate courses will be counted toward the degree.

Students interested in this program should contact the Director of Graduate Studies prior to submitting an application.

**Thesis and Final Examination:** None.

### **Dual Master of Arts in English and Master of Library Science Degree**

#### **Admission Requirements**

Undergraduate major or its equivalent. A superior student who has not majored in English may be admitted conditionally, but must remove deficiencies without graduate credit. Admission to each of the two master's programs is approved separately on the same basis as for other applicants not in the dual program.

#### **Course Requirements**

Study for these two degrees can be combined for a total of 54 credit hours rather than the 66 credit hours required for the two degrees taken separately. Students take 24 credit hours in English. All students must fulfill the core requirements as outlined in the English department's Master of Arts with Concentration in Literature or Special Field Master of Arts degree requirements. No thesis or examination is required for the M.A. degree in English. Students take 30 credit hours in library science, including 18 credit hours of M.L.S. Foundation coursework, 3 credit hours of Z521, and the remaining 9 credit hours of Information and Library Science (ILS) electives selected in consultation with the ILS advisor.

**Foreign Language Requirements:** For the M.A., students will demonstrate reading proficiency in one foreign language. Students will select their foreign language(s) in consultation with the director of graduate studies

**Prerequisites:** None.



### **Master of Fine Arts in Creative Writing Course Requirements**

A total of 60 credit hours, including 16 credit hours of writing workshops (W611–W612 or W613–W614); four courses in literature, culture and language (12–16 hours), at least two of which are on the 600 level or above, from offerings from English, African American and African Diaspora Studies, Comparative Literature, and/or Communication and Culture (courses from other departments to be approved on an individual case basis by the Director of Creative Writing in consultation with the Director of Graduate Studies); and W554; and W664, or W680. Those teaching in W103 Introductory Creative Writing are required to take W554 in their first semester of teaching. Students can take up to 12 credit hours in W699 M.F.A. Thesis. The remaining credit hours are elective. At least 48 credit hours of the degree requirements must be completed in residence.

#### **Thesis**

Required; the student must submit, for 4–12 hours of credit, a book-length manuscript.

### **Concurrent Master of Fine Arts in Creative Writing and Master of Arts with Concentration in Literature OR Special Field**

Students may choose to pursue a Master of Arts with Concentration in Literature or a Master of Arts with Special Field Concentration while pursuing the Master of Fine Arts in Creative Writing. Such students must submit a letter of application and two letters of recommendation, preferably from faculty in literature, to the Director of Graduate Studies. Once admitted to both degrees, students may count a MAXIMUM of 20 credit hours towards both the M.A. and the M.F.A. Students must fulfill all requirements for each degree. No MFA workshops (W511, W513, W610, W611, W612, W613, W614, or W615) may count toward the M.A. degree.

Please note when pursuing dual, combined, or concurrent degrees, credit cannot be simultaneously applied to more than two degrees and only in the manner outlined in the Graduate Bulletin. For example: students who apply coursework from the Master of Arts with a Concentration in Literature or Special Field toward the Master of Fine Arts cannot also apply that coursework toward the Ph.D. in Literature or Rhetoric.

### **Dual Master of Fine Arts in Creative Writing and Master of Arts in African American and African Diaspora Studies M.F.A. Requirements**

(At least 60 credit hours--48 in residence)

- 16 hours of workshops (poetry or fiction)
- Four courses (12-16 hours) in AAADS literature, culture, and history, at least two of which must be at the 600 level or above
- W554 Teaching Creative Writing
- W664 Topics in Current Literature or W680 Theory and Craft of Writing
- 10 elective graduate hours
- Maximum of 12 hours for thesis credit
- Thesis

### **M.A. in African American and African Diaspora Studies**

Requirements (26 credit hours minimum)

- Required courses in AAADS (10-12)
- Electives (12 credits minimum): Students should take courses organized around a topical concentration, whether specifically regional or comparative. These courses are to be selected from the range of AAADS and those cross-listed AAADS in the College and several professional schools with the approval of the student's major advisors in CW and AAADS.
- A698 Field Study Seminar (4-8): research and preparation of thesis essay. Students can take two semesters of A698 at four hours per semester. (One semester in thesis research and one semester for thesis writing).
- Language requirement (two semesters – 6 hours)

Foreign Language Requirements (two semesters)

- MFA/MA students may satisfy the foreign language requirement by showing satisfactory completion of course work or passing a language proficiency exam. Language requirements should be met as soon as possible, beginning immediately after graduate studies have begun. A student is expected to be working on fulfilling the requirement every semester until it is completed.

Please see director of creative writing for course approval or AAADS Director of Graduate Studies for courses outside the College of Arts and Sciences.

### **Dual Master of Fine Arts in Creative Writing and Doctor of Philosophy with Concentration in Literature or Concentration in Rhetoric Requirements**

A total of 124 hours required; of these up to 12 hours may be MFA thesis credit, 44 hours must be doctoral research credit.

- MFA core (18): 4 primary genre workshops (W611-W612 or W613-W614; 16 credits) + the Creative Writing Pedagogy course (W554; 2 credits).
- Doctoral core (20): 5 courses (20 credits) in doctoral field beyond the requirements for the MFA. At least four of these must be at the 700-level. At the discretion of the Director of Graduate Studies, one seminar substitution may be allowed. Such substitutions may include but are not limited to the use of one transferred seminar, one seminar-level equivalent course from a relevant Indiana University department, OR a 600-level English department course with verified seminar-level work.
- Up to 16 hours of graduate coursework in the Literature program or the Rhetoric program may count toward both the MFA lit-culture-and language requirement AND the 30 hours graduate literature MA/PhD requirements (see respective degree descriptions).
- Up to 12 hours of graduate W- credit may count towards both the PhD CW minor requirement and toward the total MFA credit hour requirement; four of these credits must be in a craft course (W664 Topics

in Current Literature or W680 Theory and Craft of Writing).

- In conjunction, the two preceding guidelines allow for a MAXIMUM of 28 graduate credit hours in English that may be counted toward BOTH the MFA and PhD degrees
- For the MFA: Thesis
- For the PhD: Dissertation

### **Doctor of Philosophy Degrees Admission**

**Requirements:** Students are eligible for admission to the Ph.D. programs upon successful completion of the M.A. with Concentration in Literature requirements.

### **Doctor of Philosophy Degree with Concentration in Literature**

#### **Course Requirements**

A total of 90 credit hours; students will be required to take 16 credit hours in English beyond the 30 credit hours required for the M.A. At least four 700-level seminars in English are required for the Ph.D. At the discretion of the Director of Graduate Studies, one seminar substitution may be allowed. Such substitutions may include but are not limited to the use of one transferred seminar, one seminar-level equivalent course from a relevant Indiana University department, OR a 600-level English department course with verified seminar-level work. Students must also satisfy course requirements for a graduate minor (see below). Students transferring into the department with M.A. degrees from other universities may be required to take several more courses than the minimum.

**Foreign Language:** Two languages, reading proficiency, OR one language, reading proficiency, plus the fulfillment of the research skill requirement, OR one language at the level of in-depth proficiency. Language competency will be verified by the relevant foreign language department or program. Per the department's policy, students may, with the approval of the Director of Graduate Studies, substitute an approved research skill in lieu of the second foreign language proficiency.

Students may, subject to the approval of the Director of Graduate Studies, fulfill the research-skill requirement by completing two graduate-level courses (or their equivalent) in the areas of Ancient Languages, Specialized Archival Research, or Technology Assisted Research Methodologies. Such courses may be counted for graduate credit in a student's program of study provided such courses are listed in this bulletin as carrying graduate credit. Each course must be passed with a grade of B (3.0) or higher to satisfy the proficiency requirement.

### **Doctor of Philosophy Degree with Concentration in Rhetoric**

#### **Course Requirements**

A total of 90 credit hours, including at least 16 credit hours beyond the 30 credit hours required for the M.A. degree, to include at least four 700-level departmental seminars. The total must include R546 (Rhetoric and Public Culture); R607 (History of Rhetorical Theory I); and R608 (History of Rhetorical Theory II). Information about relevant courses, including those offered by other departments, is available from the chair of the Composition Committee and the student's advisory committee.

### **Periodic Review**

Each year the graduate faculty will examine the grades and instructors' reports on all students and will discourage from further work those whose achievements and potential are below standard. Students who fail to maintain a 3.7 GPA or who accumulate three or more grades of Incomplete will be placed on departmental probation.

### **Minors**

Ph.D. students in English may take minors in the following departments and programs: American studies, African American and African Diaspora studies, art history, comparative literature, cultural studies, English and German philology, film studies, folklore, French, gender studies, German, Greek, history, Italian, journalism, Latin, linguistics, medieval studies, performance studies, philosophy, religion, Renaissance studies, Slavics, Spanish, theatre, drama and contemporary dance, Victorian studies, and European studies. Minors in additional departments may also be accepted at the discretion of the Director of Graduate Studies. Internal minors in a field outside the student's major field concentration may also be considered. Requirements for outside minors are set by the minor department.

Among the specific minors the English Department offers are the following: American Literature, British Literature, Creative Writing, English and Germanic Philology, Feminist Critical Studies, History of the Book, Literary Theory, and Pedagogy. Minors within the department must be approved by the Director of Graduate Studies. For candidates earning double degrees (e.g. MFA & PhD; MA & MLIS), coursework toward the second degree (the degree that is not the English PhD) replaces the minor.

### **Qualifying Examination**

Upon completion of doctoral course work, students will prepare and take a doctoral qualifying examination. The examination consists of two parts: an oral examination based upon a reading list and the defense of a written dissertation prospectus. Assuming the student enters the program without an M.A., the exams are taken in his or her fourth year in the program. The oral examination tests a student's qualifications as a specialist in his or her chosen field; the prospectus and defense test a student's qualifications and readiness for undertaking the dissertation. Part one of the exam is taken in September; the prospectus should be completed the following spring and defended by the second week of May. Students pursuing a dual-degree PhD are allowed some flexibility in the timing of the qualifying exam. Further details of the procedure are available from the Director of Graduate Studies.

### **Dissertation Prospectus/Research Proposal**

Following the successful completion of the first part of the qualifying examination, the student names his dissertation committee and may register for W795, the dissertation prospectus writing workshop taught each spring by the Director of Graduate Studies. The prospectus and bibliography are written in consultation with supervisory faculty and with the instructor of W795. When the prospectus is ready to be approved, the student submits it to his committee and arranges a time for the defense.

of the prospectus (which constitutes the final part of the Qualifying Exam). In this two-hour oral exam, members of the dissertation committee examine the claims of the prospectus as well as the dissertation research proposed, and assess the student's preparedness to undertake a long-term independent research project. The committee may ask for further revisions of the prospectus. The student must revise the prospectus as needed and submit it to the Director of Graduate Studies no later than the end of May. The prospectus may be re-submitted and the defense repeated once within 6 months of the first attempt.

### Research Proposal

After the dissertation proposal has been approved, the student will nominate a research committee consisting of no fewer than three members of the English department faculty and a representative of the minor.

**Final Examination:** Oral dissertation defense, at the completion of the dissertation project.

### Ph. D. Minor in English

Minimum of twelve hours (at least three courses) in English Department coursework in a chosen field within English Literature (examples may include, but are not limited to, English Language, 20<sup>th</sup> Century Fiction, Transatlantic literature, Digital English, the Novel, Literature and the Environment, etc.). Consultation with the Director of Graduate Studies is required to declare the minor and determine field of study. Approved transfer credit may, with the approval of the DGS, be used to replace one course in the minor.

### Ph.D. Minor in American Literature

Minimum of twelve hours (at least three courses) in English Department coursework concentrated in American Literature and related topics. Consultation with the Director of Graduate Studies is required to declare the minor. Approved transfer credit may, with the approval of the DGS, be used to replace one course in the minor.

### Ph.D. Minor in British Literature

Minimum of twelve hours (at least three courses) in English Department coursework concentrated in British Literature and related topics. Consultation with the Director of Graduate Studies is required to declare the minor. Approved transfer credit may, with the approval of the DGS, be used to replace one course in the minor.

### Ph.D. Minor in Creative Writing

Three courses, to be chosen from W511 (Writing Fiction), W513 (Writing Poetry), W550 (Teaching Creative Writing in the Community), W615 (Writing Creative Nonfiction), W664 (Topics in Current Literature), and W680 (Theory and Craft of Writing). Students who want to pursue this minor must submit to the Creative Writing Director a brief personal statement outlining your wish to pursue this minor and a writing sample (10 poems for poets and 25 pages for fiction writers).

### Ph.D. Minor in English Language

Three courses in English Language, to be chosen from G601 [Medieval Languages] (may be taken more than once for credit), G602 [Readings in Language, History, and Culture], G655 [History of the English Language], L746 [Research in Textual and Media Studies], and L742

[Research in Structure, History and Use of English and Related Languages]. Relevant offerings of, [Individual Readings in English] and L790 [Independent Study] may also count.

### Ph.D. Minor in English and Germanic Philology

Four courses, to include G601 Old English and at least one of the other older Germanic languages; i.e., German G632 Gothic, G635 Old Icelandic, G638 Old High German, G639 Old Saxon, and G640 Middle High German. The remaining courses may be chosen from English G602 Middle English, G655 History of the English Language, L760 Research in Specific Author(s) or Work(s) (when topic is appropriate L742 [Research in Structure, History and Use of English and Related Languages]; German G532 History of the German Language, and G625 Colloquium in Germanic Linguistics (when the topic is appropriate), G640 Reading Middle High German, G636 Old Icelandic Literature, G835 Seminar in Germanic Linguistics (when the topic is appropriate), and any of the remaining older Germanic languages listed above.

### Ph.D. Minor in Feminist Critical Studies

The Minor in Feminist Critical Studies emphasizes feminist criticism and theory. It requires four courses (at least 15 hours of credit), including English [Readings in Feminist, Gender, and Sexuality Studies] and at least one course outside the Department of English; each course must be passed with a grade of B+ (3.3) or higher. Courses may include English L657, L 752, L740, L756, and L764; Fine Arts A474 and A674; Cultural Studies C601 and C602; Telecommunications T651; and other courses with relevant topics as approved by the Director of Graduate Studies. Students should consult with the minor advisor in the English department about specific courses of study.

### Ph.D. Minor in Literacy Studies

Jointly administered by the Department of English and the School of Education, the minor requires a minimum of four courses, including English L502, Education L630, and two courses selected from an approved list, at least one of which must be outside the English department. For School of Education students, three of the four courses must be outside the student's major area. Students should confer with one of the advisors of the Literacy Studies minor; their names can be obtained from the director of graduate studies.

### Ph.D. Minor in Literary Theory

Jointly administered by the Departments of English and Comparative Literature, the minor requires a minimum of three courses, including at least one selected from Comparative Literature C503, C504, C601, or C602; and one from English G660. Other courses approved for the minor are French and Italian F584 and G560; Germanic Studies G800; Slavics and East European Languages and Cultures R521; Spanish and Portuguese S473 and S512; and Theatre and Drama T555 and T556. Courses other than those listed previously may also be acceptable toward completion of the requirement; written consent to count such courses must be obtained in advance from the graduate advisor in the Department of English or Comparative Literature.

### Ph.D. Minor in Literature and Science

The literature and science minor consists of four courses. Two of the four will be Department of English courses

from the area of literature and science. One of those English courses will be L769 Research in Literature and Science, the “core” course for the minor. The non-English department courses will come from a relevant science, from the Department of History and Philosophy of Science, or from some other relevant (nonliterary) discipline. The minor will be administered by the director of graduate studies in English, in consultation with the literature and science faculty as necessary.

### **Ph.D. Minor in Critical Race and Postcolonial Studies (CRPS)**

Jointly administered by the departments of English and American Studies, this minor requires four courses, (12-16 credits): the Introduction to Critical Race and Postcolonial Studies (ENGL L 648 Readings in Critical Race & Postcolonial Studies) and three additional courses drawn from at least two departments, chosen in consultation with the CRPS supervisor. To complete the minor, the student must present her/his research in a forum organized by the CRPS Advisory Committee.

### **Ph. D. Minor in Performance Studies**

Four courses to include Introduction to Performance Studies (Folklore F750 or its cognate in another department) and three others from such departments and programs as English, Anthropology, Film Studies, Fine Arts, Comparative Literature, Ethnomusicology, and Folklore.

### **Ph. D. Minor in Rhetoric**

The PhD Minor in Rhetoric will consist of at least three courses (12 credit hour minimum). These three courses must include at least one of the following: R546 [Rhetoric & Public Culture], R607 [Rhetorical Theory I], R608 [Rhetorical Theory II]. Other courses may be approved to count toward the minor if they include a substantive focus on rhetoric, or if the student has completed a substantive project that focuses on rhetoric as a part of fulfilling the requirements of the course.

### **Ph. D. Minor in English Pedagogy**

The PhD Minor in English Pedagogy will consist of at least three courses (12 credit hour minimum) in pedagogy, which may include W500 [Teaching Composition: Issues & Approaches], W602 [Contemporary Theories of Rhetoric and Composition], L508 [Practicum on Teaching Literature in College], and/or a seminar in Composition, Rhetoric, or Literacy [L707, L762, L790]. Other courses may be approved to count toward the minor if they include a substantive focus on pedagogy, or if the student has completed a substantive project that focuses on pedagogy as a part of fulfilling the requirements of the course.

### **Graduate Area Certificate in English and Germanic Philology**

Also offered is a certificate in English and Germanic philology, requiring four courses in addition to the four required for the minor. These may include any of the courses listed previously, as well as courses in other departments (e.g., linguistics, folklore, classical studies, and anthropology) that are relevant to the history and prehistory of the Germanic languages, and to early Germanic literature and culture. For information about

relevant courses, see the graduate advisor in the Department of English.

## **Faculty**

### **Chairperson**

Michael Adams

### **Associate Chairperson**

Monique Morgan

### **Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

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Philip Appleman\* (Emeritus), Susan D. Gubar\* (Emerita), James Justus\* (Emeritus), Terence Martin\* (Emeritus), Scott R. Sanders\* (Emeritus)

### **Chancellor's Professors**

Judith H. Anderson (Emerita)\*, Anthony Ardizzone\* (Emeritus), Robert Fulk\* (Emeritus), James Naremore\* (Emeritus)

### **Rudy Professor/COAS Distinguished Professor**

Patrick Brantlinger\* (Emeritus)

### **Susan Gubar Chair of American Literature**

Stephanie Li\*

### **Ruth N. Halls Professors**

Paul John Eakin\* (Emeritus), Karma Lochrie\*

### **Emeritus Professors**

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### **Associate Professors**

Dana Larson Anderson\*, Penelope Anderson\*, John Arthos\*, Scot Barnett, , Judith Christine Brown\*, Jennifer Fleissner\*, , Shannon Gayk\*, D. Rae Greiner\*, Vivian



Halloran, Justin Hodgson, DeWitt Douglas Kilgore\*, Ivan Kreilkamp\*, Lara Kriegel\*, Joan Pong Linton\*, Jesse Molesworth\*, Monique Morgan\*, Walton Muyumba\*, Ranu Samantrai\*, Rebekah Sheldon, Brando Skyhorse, Nikki Skillman, Albert Varon\*, Shane Vogel\*, Nicholas Mark Williams\*,

### Assistant Professors

Stacey Brown, Katherine Silvester, A. Freya Thimsen,

### Adjunct Professors

Oscar Kenshur\* (Emeritus, Comparative Literature), Barbara Klinger\* (Communication and Culture), John McCluskey Jr.\* (Emeritus, African American and African Diaspora Studies),

### Adjunct Associate Professors

Herbert Marks\* (Comparative Literature), Melvin Plotinsky\* (Emeritus)

### Director of Graduate Studies

Associate Professor Ivan Kreilkamp, Lindley Hall 205A, (812) 855-1543

## Courses

### 500 Level

- ENG-G 500 Introduction to the English Language (4 cr.) An introduction to the English language: its nature, structure, and development.
  - ENG-L 500 Introduction to Graduate Study for International Students (4 cr.) The methods and assumptions of graduate study in English and American literature, with special emphasis on classroom participation, the preparation and delivery of reports, and the writing of critical essays based on individual research. Admission must be approved by the departmental advisor for international students.
  - ENG-L 501 Professional Scholarship in Literature (4 cr.) Materials, tools, and methods of research.
  - ENG-L 502 Contexts for the Study of Writing (2-4 cr.) Historical and cognitive effects of writing, reading, and language use, and the implication of these effects for the teaching and study of literature and writing.
  - ENG-L 503 Teaching of Literature in College (2-4 cr.) Classroom teaching of literature in the light of current approaches.
  - ENG-L 504 Practicum on Research Techniques (2-4 cr.) Introduction to a range of general and specialized methods for advanced research in literary and cultural studies. Topics include methods for research in the History of the Book, codicology, research in popular cultural archives, digital research environments, etc.
  - ENG-L 505 Teaching Children's Literature at the Post-Secondary Level (2 cr.) Classroom teaching of children's literature in the light of current approaches.
  - ENG-L 506 Introduction to Methods of Criticism and Research (4 cr.) The conditions and assumptions of studying English, with emphasis on criticism and research on a culturally and historically diverse range of texts.
  - ENG-L 507 English Outside the Academy (4 cr.) Primarily for Special Field M.A. candidates. Explores discourses and domains of thought and language use that link the academy with areas of expertise outside it, including law, publishing, the media, advertising, health, and counseling.
  - ENG-L 508 Practicum on Teaching Literature in College (2-4 cr.) Topics include syllabus construction, lecture and discussion techniques, use and evaluation of written work.
  - ENG-L 509 Practicum on Critical Writing (2-4 cr.) A practice-based course on the historical and current grounds and techniques of critical writing in the academy. Topics include issues of rhetoric and idiom, the problem of voice in scholarly writing, the genres of academic prose, and the publication of academic work.
  - ENG-L 512 Practicum on Theoretical Bases for Advanced Research in Literary and Cultural Studies (2-4 cr.) A practice-based class in the identification and manipulation of the theoretical assumptions and motivations of contemporary criticism.
  - ENG-L 553 Studies in Literature (1-3 cr.) Primarily for secondary-school and junior-college teachers of English. Emphasis on thematic, analytic, and generic study. With consent of instructor, may be repeated once for credit.
  - ENG-L 599 Internship in English (1-4 cr.) Primarily for Special Field M.A. candidates. Students will define a project and secure both a faculty and an external sponsor. Likely external sponsors will include the IU Foundation, the IU Press, advertising agencies, charities, legal or political offices, health agencies, and writing centers. Number of credit hours depends on length of commitment.
- ENG-R 546 Rhetoric and Public Culture (4 cr.) Introduction to rhetoric as a critical mode of a cultural production that addresses collective social and political life.
- ENG-W 500 Teaching Composition: Issues and Approaches (4 cr.) Consideration of fundamental issues in the teaching of writing and the major approaches to composition instruction. Specific topics include teaching invention and revision, diagnosing errors, teaching style and organization, making assignments, and evaluating student writing.
  - ENG-W 501 Practicum on the Teaching of Composition in College (1-3 cr.) Practical teaching of composition; current theories and policies. May be offered as a practicum for new instructors of regular and basic sections of W131 or as a practicum for those teaching the non-native sections.
  - ENG-W 511 Writing Fiction (4 cr.) Either W511 or W513 may count once for the M.A. or M.F.A., but not toward specified course requirements for the Ph.D.



- ENG-W 513 Writing Poetry (4 cr.) Either W511 or W513 may count once for the M.A. or M.F.A., but not toward specified course requirements for the Ph.D.
- ENG-W 550 Practicum in Teaching Creative Writing in the Community (3 cr.) P: Permission of Instructor required. Practicum in community-based pedagogies, community literacy and arts collaboration.
- ENG-W 553 Theory and Practice of Exposition (1-3 cr.) Primarily for secondary-school and junior-college teachers of English.
- ENG-W 554 Practicum on the Teaching Creative Writing (2 cr.) Theory and practice of teaching the writing of poetry and fiction at the college level, with attention to matters of curricular design and classroom technique. Required of those teaching W103 for the first time. Open also to graduate students not in the creative writing program.

### 600 Level

- ENG-G 601 Medieval Languages (4 cr.) Introductory language instruction in the vernacular medieval languages of the British Isles. Course may cover Old English, Middle English, Old Irish, or Middle Welsh.
- ENG-G 602 Readings in Language, History, and Culture (4 cr.) Consideration of the structure, use, and attitudes toward English in relationship to relevant historical or cultural contexts. Course topics may include the structural development of English, social or regional varieties of English, stylistics, usage controversies, language in history, lexicography.
- ENG-G 603 Celtic Languages and Literature (4 cr.) P: G500 or its equivalent. Introduction to such languages as Old Irish and Welsh, or literatures in these languages. Topic varies.
- ENG-G 651 American English (4 cr.) Growth and development of the English language in America from the first settlements to the present; dialectal diversity of American English.
- ENG-G 655 History of the English Language (4 cr.) A survey of the evolution of the English language from its earliest stages to the present, with reference to its external history and to its phonology, morphology, syntax, and vocabulary.
- ENG-G 660 Stylistics (3-4 cr.) Survey of traditional and linguistic approaches to the study of prose and poetic style. Attention will center on the description of the verbal characteristics of texts, what those characteristics reflect about the author, and how they affect the reader.
- ENG-L 605 Critical and Interpretive Theory (4 cr.) Introduction to one or more major modes of contemporary criticism or critical theory.
- ENG-L 607 Hist of Lit Crit to Enlightenment (4 cr.) A survey of the history of literary criticism and theory from Plato and Aristotle to the Enlightenment, including works by Greco-Roman, medieval, and Renaissance figures.
- ENG-L 608 History of Literary Criticism from 1750 to 1960 (4 cr.) A survey of the history of literary criticism and theory from the late Enlightenment or early Romantic periods to 1960, including a variety of modern literary critics and theorists.
- ENG-L 609 Readings in Early Medieval Literature and Culture (4 cr.) Variable topics in the cultures and literatures of post-conquest Britain (11th through the 13th centuries) including Anglo-Norman, Latin, early Middle English, and related writings.
- ENG-L 610 Readings in Late Medieval Literature and Culture (4 cr.) Variable topics in the cultures and literatures of the fourteenth and fifteenth centuries. May include poetry, drama, prose, performance and non-literary texts.
- ENG-L 611 Readings in Early Modern English Literature and Culture, 1500–1660 (4 cr.) Variable topics in the cultures and literatures of the sixteenth and seventeenth centuries. May include poetry, drama, prose, performance, and non-literary texts.
- ENG-L 612 Chaucer (4 cr.) Critical analysis of *The Canterbury Tales*, *Troilus and Criseyde*, and selected shorter poems.
- ENG-L 613 Middle English Literature (4 cr.) P: L612 or G602 or equivalent.
- ENG-L 615 Readings in Poetry and Poetics, to 1800 (4 cr.) Extensive reading in the theories and practices of early English poetry. May survey the development of poetics or study a singular mode, genre, or school.
- ENG-L 616 English Drama to the 1590s, Exclusive of Shakespeare (4 cr.)
- ENG-L 617 Readings in Poetry and Poetics, from 1790 to the Present (4 cr.) A study of styles, techniques, forms, and conceptions of poetry.
- ENG-L 621 English Literature 1500–1660 (4 cr.) Extensive reading in non-dramatic literature.
- ENG-L 622 Spenser and Milton (4 cr.) Critical analysis of the major texts.
- ENG-L 623 Eng Drama 1590-1800 Exc Shakespr (4 cr.) P: Familiarity with half a dozen plays of Shakespeare.
- ENG-L 625 Readings in Shakespeare (4 cr.) Critical analysis of selected texts.
- ENG-L 626 British Lit & Cltr, 1660-1790 (4 cr.) Selected readings of text written in English from the Restoration to the U.S. Constitution. May include all genres and relevant secondary works.
- ENG-L 627 Readings in Nineteenth-century British Literature and Culture, 1790-1900 (4 cr.) Selected readings of nineteenth-century British texts both literary and non-literary.

- ENG-L 628 Readings in Narrative Literature to 1800 (4 cr.) Selected readings of narrative texts composed before 1800, with an emphasis on prose fiction.
- ENG-L 629 Readings in Narrative Literature, from 1800 (4 cr.) Selected readings of narrative texts composed since 1800, with an emphasis on prose fiction.
- ENG-L 631 English Literature 1660–1790 (4 cr.) Extensive reading in poetry and nonfictional prose.
- ENG-L 632 Readings in 19th century American Literature and Culture (4 cr.) Study of American Literature and culture from 1800–1900.
- ENG-L 634 Readings in 20th- and 21st-century American Literature and Culture (4 cr.) Study of American Literature and Culture from 1900 to the present.
- ENG-L 635 Readings in American Ethnic Literature and Culture (4 cr.) In-depth comparative study of African-American, Asian American, Latino/a, Chicano/a, Native American, and/or other American ethnic literature and culture.
- ENG-L 636 Readings in Drama and Performance, to 1800 (4 cr.) Historical and critical study of dramatic literature and performance through 1800.
- ENG-L 637 Readings in Drama and Performance, 1800 to the present (4 cr.) Historical and critical study of modern dramatic literature and performance (British, Irish, American, and/or other English language drama).
- ENG-L 638 Readings in Contemporary Literature (4 cr.) Readings in late-20th and early 21st-century literature and its historical, cultural, and theoretical contexts.
- ENG-L 639 English Fiction to 1800 (4 cr.)
- ENG-L 640 Readings in Transatlantic Literature (4 cr.) Study of Literature on both sides of the Atlantic.
- ENG-L 641 English Literature 1790–1900 (4 cr.) Extensive reading in poetry and nonfictional prose.
- ENG-L 643 Readings in Colonial and Postcolonial Literatures (4 cr.) Study of literatures within the historical, cultural, and political context of European colonialism and anti- or post-colonial resistance.
- ENG-L 644 Readings in Performance Studies (4 cr.) Introduction to major works, methods, issues, and developments in performance theory and criticism.
- ENG-L 645 English Fiction 1800–1900 (4 cr.)
- ENG-L 646 Readings in Media, Literature, and Culture (4 cr.) Introductory study of issues in literary editing, textual cultures, or digital humanities.
- ENG-L 648 Readings in Comparative Ethnic and Postcolonial Studies (4 cr.) Introduction to the major works, methods, issues, and developments in comparative ethnic and postcolonial cultural studies.
- ENG-L 649 British Literature since 1900 (4 cr.) Extensive reading in all genres.
- ENG-L 651 American Literature 1609–1800 (4 cr.) Intensive historical and critical study of all genres from John Smith through Charles Brockden Brown.
- ENG-L 652 Readings in 20th and 21st century British Literature and Culture (4 cr.) Study of British Literature from 1900 to the Present.
- ENG-L 653 American Literature 1800–1900 (4 cr.) Intensive historical and critical study of all genres from Washington Irving through Frank Norris.
- ENG-L 655 American Literature and Culture 1900–1945 (4 cr.) Study of American literature and culture from the turn of the century to 1945.
- ENG-L 656 American Literature and Culture 1945 to the Present (4 cr.) Studies in American literature and culture from 1945 to the present.
- ENG-L 657 Readings in Literature and Critical Theory (4 cr.) Study of major movements, figures, or topics in literary and/or critical theory.
- ENG-L 663 Readings in Feminist, Gender, and Sexuality Studies (4 cr.) An introduction to and examination of major works, methods, issues, and developments.
- ENG-L 666 Survey of Children's Literature (4 cr.) Survey of literature written for children and adolescents from the medieval period to the present.
- ENG-L 671 Modern British and Irish Drama (4 cr.)
- ENG-L 672 Modern American Drama (4 cr.)
- ENG-L 673 Studies in Women and Literature (4 cr.) Women's literary accomplishments and representations of women in English from the sixteenth century to the present.
- ENG-L 674 Studies in International English Literature (4 cr.) Literatures from Africa, the Caribbean, Australia, New Zealand, the Pacific islands, the Indian subcontinent, or Canada.
- ENG-L 680 Special Topics in Literary Study and Theory (4 cr.) Readings in sociological, political, psychological, and other approaches to literature.
- ENG-L 695 Individual Readings in English (1-4 cr.)
- ENG-L 699 M.A. Thesis (arr. cr.)
- ENG-R 607 History of Rhetorical Theory I (4 cr.) First semester of overview of rhetorical theory from the ancients to the present.
- ENG-R 608 History of Rhetorical Theory II (4 cr.) Second semester of overview of rhetorical theory from the ancients to the present.
- ENG-R 611 Rhetorical Theories of Cultural Production (4 cr.) Examines theories of rhetoric as a primary source of cultural production. Possible topics include Giambattista Vico on poetic wisdom, Friedrich Nietzsche on metaphor and the will to power, Chaim Perelman on the the problem of

justice, and Kenneth Burke on identification and the drama of human relations.

- ENG-R 612 Constituting Democracy in Rhetorical Discourse (4 cr.) Compares the role of rhetoric in liberal, deliberative democracy to its function in radical, participatory, and agonistic democracy. Considers problematic constructions of democracy in U.S. political culture and explores the potential for rhetoric to reconstitute the image of democracy from a diseased to a healthy political practice.
- ENG-R 615 Rhetoric of Protest in America (4 cr.) Presents key instances of protest discourse both in their historical contexts and through the lenses of rhetorical theories of dissent. The focus is illuminating the problematic and constitutive role of protest in the public culture of the United States, as manifest across a range of electronic and print media.
- ENG-R 617 Rhetoric and Visual Culture (4 cr.) Examination of the relationship between rhetoric and visual culture. Key topics to be considered include the relationship between visual rhetoric and collective memory, social and political controversy and dissent, political, style and representation, postmodern media communities, race gender, identity politics, etc.
- ENG-R 619 Feminism and Rhetorical Theory (4 cr.) Explores the relationship between feminism and rhetoric by examining advocacy by/for women, patriarchal patterns of oppression, and the development of critical perspectives that have arisen out of desires to politically reevaluate contemporary gendered norms. May be structured as a survey or focused on a specific tension, theme, or trajectory.
- ENG-R 688 Rhetorics of Transgression and/or Resistance (4 cr.) This seminar compares and contrasts choices to identify, name, and imagine certain rhetorical acts as transgression or resistance. Engaging a range of contemporary theories, methods, and vocabularies, it explores which approaches are productive depending on the particular situation, practices, and actors involved, as well as the questions one is studying.
- ENG-W 601 Development of Rhetoric and Composition (4 cr.) Traces the development of rhetorical theory from Plato through the Renaissance and up to the present; puts special emphasis on exploring how present-day composition programs and practices reflect the past.
- ENG-W 602 Contemporary Theories in Rhetoric and Composition (4 cr.) An introduction to current research in rhetoric and composition. Draws on insights from linguistic theory, cognitive theory, and rhetorical theory to develop greater understanding of the writing process and build pedagogical applications.
- ENG-W 610 Indiana Writing Workshop (2 cr.) P: Acceptance to the Indiana Writers' Conference held in June of each year. Intensive training in various forms of writing at the conference;

submission of significant body of writing before the end of the last summer session.

- ENG-W 611-612 Writing Fiction I-II (4-4 cr.) May be repeated once for credit.
- ENG-W 613-614 Writing Poetry I-II (4-4 cr.) May be repeated once for credit.
- ENG-W 615 Writing Creative Nonfiction (4 cr.) Writing workshop in such modes as personal essay, autobiography, and documentary. Open also to graduate students not in the creative writing program.
- ENG-W 664 Topics in Current Literature (4 cr.) The study of recent poetry and prose, emphasizing special formal, technical, and intellectual concerns of author and work. Open also to graduate students not in the creative writing program.
- ENG-W 680 Theory and Craft of Writing (4 cr.) Elements of poetic prosody or the major fictive techniques or both: nature of stress, concepts of meter, nature of rhythm, prosodic use of syntax, theories of fictive realism, nature of fictive romance, point of view, etc. Students will do some writing. Open also to graduate students not in the creative writing program.
- ENG-W 697 Independent Study in Writing (1-4 cr.) P: two semesters of W611, W612, W613 or W614.
- ENG-W 699 M.F.A. Thesis (arr. cr.)

## 700 Level

- ENG-G 780 Special Studies in English Language (4 cr.) P: G500 or equivalent.
- ENG-L 700 Topics in Feminist Critical Studies (4 cr.) Readings in feminist theories of representation, gender, sexuality, the institution, or other areas of feminist critical endeavor.
- ENG-L 701 Descriptive Bibliography and Textual Problems (4 cr.)
- ENG-L 705 Problems in Composition, Literacy, and Culture (4 cr.)
- ENG-L 707 Studies in Literary Theory and Criticism (4 cr.)
- ENG-L 710 Beowulf (4 cr.) P: G601. Critical reading of the text of the poem, with consideration of its relationship to other writings in Old English and the heroic tradition in literature.
- ENG-L 711 Old English Literature (4 cr.) P: G601 or equivalent.
- ENG-L 712 Chaucer (4 cr.) P: L612 or L613 or equivalent.
- ENG-L 713 Middle English Literature (4 cr.) P: L612 or L613 or equivalent.
- ENG-L 715 English and Scottish Popular Ballads (4 cr.) Student investigation of principal problems met in ballad scholarship. Special attention to textual relationships, dissemination, and unique qualities of genre.

- ENG-L 721 Spenser (4 cr.)
- ENG-L 723 Elizabethan and Jacobean Drama (4 cr.)
- ENG-L 725 Shakespeare (4 cr.)
- ENG-L 730 Renaissance Poetry and Prose (4 cr.)
- ENG-L 731 Milton (4 cr.)
- ENG-L 733 Restoration and Augustan Literature (4 cr.)
- ENG-L 736 Age of Johnson (4 cr.)
- ENG-L 738 Research in Literary Histories and Theories of History (4 cr.) Issues and methods in literary histories and historiography. Direct research can include a range of specific topics and historical periods.
- ENG-L 739 English Fiction to 1800 (4 cr.)
- ENG-L 740 Research in Aesthetics, Genre, and Form (4 cr.) Analysis of literary and cultural aesthetics, literary form, and /or genre. Includes directed research on relevant issues across a range of historical periods.
- ENG-L 741 Romantic Literature (4 cr.)
- ENG-L 742 Research in Structure, History and Use of English and Related Languages (4 cr.) Research in all aspects of English Language Studies, including comparative philology of early Germanic languages, literary stylistics, lexicography, social and regional variation, usage and language attributes.
- ENG-L 743 Victorian Literature (4 cr.)
- ENG-L 744 Research in Drama and Performance (4 cr.) Selected topics in the study of dramatic literature, theater studies, and performance studies.
- ENG-L 745 English Fiction 1800-1900 (4 cr.)
- ENG-L 746 Research in Textual and Media Studies (4 cr.) Training and research in descriptive and analytical bibliography, textual theory and criticism, textual editing, or text technology and media theory/media studies.
- ENG-L 748 Research in Colonial and Postcolonial Studies (4 cr.) Issues and methods in colonial and postcolonial literary and cultural studies, including directed research on relevant topics from a range of historical periods.
- ENG-L 749 Twentieth-Century British Literature (4 cr.)
- ENG-L 750 Research in Race and Ethnicities (4 cr.) Issues and methods in research on race and ethnicities and literary and critical studies, including directed research on relevant topics from a range of historical periods.
- ENG-L 751 Major American Writers 1700–1855 (4 cr.) Two or three writers. Techniques and thematic comparisons.
- ENG-L 752 Research in Gender and Sexuality (4 cr.) Issues and methods in gender and sexuality and literary and cultural studies, including directed research on relevant topics from a range of historical periods.
- ENG-L 753 Major American Writers 1855 to the Present (4 cr.) Two or three writers. Techniques and thematic comparisons.
- ENG-L 754 Research in Literary Geographies (4 cr.) Intensive study of literature in relation to space and geography. Topics might include relations between political and aesthetic conceptions of space, literary forms across space and time, or notions of national, transnational, transatlantic, hemispheric, and global space as they impact cultural expression.
- ENG-L 756 Research in Rhetorical Studies (4 cr.) Advanced research in rhetoric. Draws on insights from linguistic, cognitive, and rhetorical theories.
- ENG-L 758 Research in Interdisciplinary Studies (4 cr.) Social, political, and psychological studies in literature written in English.
- ENG-L 760 Research in Specific Author(s) or Work(s) (4 cr.) Critical reading and research into a single text or author, or a closely related group of texts or authors.
- ENG-L 761 American Poetry (4 cr.)
- ENG-L 762 Research in Composition, Literacy, and Culture (4 cr.) Advanced study of selected topics in the history of writing practices, with attention to how culture influences theories of rhetoric and literacy.
- ENG-L 764 Research in Literature and Critical Theory (4 cr.)
- ENG-L 766 Children's Literature (4 cr.) Issues in the critical and historical study of literature for children or young adults.
- ENG-L 769 Research in Literature and Science (4 cr.) Major developments in modern science, the philosophical issues they raise, and their influence on modern thought and literature.
- ENG-L 773 Topics in Feminist Literary History (4 cr.) Feminist critical research on literary texts in cultural contexts; or focusing on a particular historical period, theme, genre, or author.
- ENG-L 774 Topics in International English Literature (4 cr.) Topics in English literature from Africa, the Caribbean, Australia, New Zealand, the Pacific Islands, the Indian subcontinent, or Canada.
- ENG-L 775 Studies in Modern Drama (4 cr.)
- ENG-L 776 Comparative Drama (4 cr.) Selected topics in comedy or tragedy.
- ENG-L 779 Literature and Society (4 cr.) Analysis of representative works of different periods to illustrate the study of literature in relation to its age, or as a social product. Consideration of economic, political, class, and other cultural influences.
- ENG-L 780 Special Studies in English and American Literature (4 cr.)

- ENG-L 790 Independent Study (arr. cr.) Consent of the instructor required. Open to Ph.D. candidates in English only.
- ENG-L 799 Ph.D. Thesis (arr. cr.)
- ENG-R 713 Rhetorical and Socio-Political Judgment (4 cr.) Exploration of the role that rhetoric plays in the production and performance of collective or socio-political judgment. The focus will be on the tension between modern and late or postmodern conceptions of judgment as they implicate the problems and possibilities of rhetorical praxis in contemporary democratic policy.
- ENG-R 714 Rhetoric, Ideology, and Hegemony (4 cr.) Examination of the relationship between rhetoric, ideology, and hegemony in contemporary social and political thought. The emphasis will be on conceptions of "hegemony" as a site of praxis for negotiating the tensions between rhetoric and ideology in the production of social and political change (or permanence) in late or postmodernity.
- ENG-R 716 Rhetorical Critiques of War (4 cr.) Rhetoric as a heuristic for critically engaging discourses of war and transforming the legitimization of war into a cultural problematic. Focuses on the problem of war in U.S. political culture.
- ENG-R 770 Rhetoric in Contemporary Theory (4 cr.) Examines the role of rhetoric in emerging social, political, aesthetic, and cultural theories and on the implications of such theories for rhetorical inquiry.
- ENG-W 780 Special Studies in Composition (4 cr.)
- ENG-W 795 Dissertation Prospectus Workshop (2 cr.) Provides models of successful prospectuses and guidance in the actual writing of prospectuses.

## Environmental Change

**Center for the Study of Institutions, Population, and Environmental Change**

Departmental E-mail: [evans@indiana.edu](mailto:evans@indiana.edu)

Departmental URL: <http://www.indiana.edu/~cipec/hdgc/index.php>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff uses those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Ph.D. Minor in the Human Dimensions of Global Environmental Change

The graduate minor will instruct students in theories and methods that combine the physical and social sciences on human dimensions of global environmental change (HDGEC). The curriculum, as described below, will familiarize students with (1) understand the history and concerns of human dimensions of global change research; (2) core theoretical dimensions of the study of coupled natural-human systems; and (3) fundamental methodological tools for human-environment research. Students will be expected to become familiar with GIS and/or remote sensing as tools in the analysis of global

environmental change through both formal courses and hands-on apprenticeship as part of team research projects.

### Course Requirements

The Minor in Human Dimensions of Global Environmental Change requires 12 credit hours of approved courses. The core course GEOG-G561 is required. Three credit hours of methods courses are required. To complete the HDGEC Ph.D. minor, students must (1) complete the required credit hours in good standing and (2) have at least one member of the HDGEC Ph.D. minor core faculty serve on the student's Ph.D. advisory committee. The director of the HDGEC Ph.D. minor can approve course substitutions for the core skills or elective requirements.

### Faculty

#### Director

Professor Tom Evans\*

#### Core Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Professors

Eduardo Brondizio\* (Anthropology), Dan Cole (Public and Environmental Affairs, Maurer School of Law), Tom Evans\* (Geography), Scott Robeson\* (Geography)

#### Associate Professors

Vicky Meretsky\* (Public and Environmental Affairs), Todd Royer (Public and Environmental Affairs), Catherine Tucker\* (Anthropology)

#### Assistant Professor

Rinku Roy Chowdhury\* (Geography), Rebecca Lave\* (Geography), Majed Akhter\* (Geography), Shahzeen Attari (Public and Environmental Affairs)

#### Associated Graduate Faculty

#### Professors

Jerome Busemeyer\* (Psychology), Chris Craft\* (Public and Environmental Affairs), Michael Hendryx\* (School of Public Health), Dan Knudsen\* (Geography), J. Scott Long\* (Sociology), Michael McGinnis\* (Political Science), David Parkhurst\* (Emeritus, Public and Environmental Affairs), Barry Rubin\* (Public and Environmental Affairs), Jeanne Sept\* (Anthropology), James Walker\* (Economics), Richard Wilk\* (Anthropology)

#### Associate Professor

Heather Reynolds\* (Biology), Michael Muehlenbein\* (Anthropology)

#### Assistant Professors

James Farmer (School of Public Health), Darren Ficklin\* (Geography), Justin Maxwell\* (Geography), Rich Phillips\* (Biology)

#### Clinical Professor

Burnell C. Fischer\* (Public and Environmental Affairs)

#### Academic Advisors



Professor Tom Evans\* (812) 856-4587, Email [evans@indiana.edu](mailto:evans@indiana.edu)

## Courses

### Core Course

**GEOG-G 561 Human Dimensions of Global Environmental Change (3 cr.)** Introduction of global environmental change (GEC), focusing on the human causes and consequences of biophysical transformations of land systems. Emphasis on socioeconomic, political, institutional and environmental dimensions of land change; tropical forests, grasslands and urbanizing areas; international environmental regimes; spatial methodologies in GEC research, and integrated approaches.

### Methods Elective Courses

**ANTH-E 606 Research Methods in Cultural Anthropology (3 cr.)**

**ANTH-E 622 Empirical Theory & Methodology: International Forest Resources & Initiatives (3 cr.)** This course trains participants in the International Forestry Resources and Institutions Research Program (IFRI), which explores how communities influence forest conditions. Theories of institutional analysis and human dimensions of environmental change underlie the course. Methods include participatory techniques, interviews, forest mensuration. Participants conduct fieldwork in an Indiana community.

**GEOG-G 535 Environmental Remote Sensing (3 cr.)** Principles of remote sensing of the earth and its atmosphere, emphasizing satellite data in visible, infrared, and microwave portions of the electromagnetic spectrum. Emphasis on practical applications and digital image analysis. A satellite data analysis project is required.

**GEOG-G 536 Advanced Remote Sensing: Digital Image Processing (3 cr.)** Advanced remote sensing theory and digital image processing techniques with an emphasis on environmental science applications. Hands-on computer exercises provide significant experience in digital image processing techniques for extraction of qualitative and quantitative information about Earth's terrestrial and aquatic environments.

**GEOG-G 538 Geographic Information Systems (3 cr.)** Overview of the principles and practices of Geographic Information Systems (GIS). Spatial data models, database design, introductory and intermediate GIS operations, and case studies of real-world GIS applications. Laboratory exercises will provide significant hands-on experience. Lecture and laboratory.

**GEOG-G 539 Advanced Geographic Information Systems (3 cr.)** Intermediate and advanced topics in geographic information science and spatial analysis techniques using GIS software. This advanced course is for graduates who seek a greater understanding of this rapidly developing field and to learn how to construct, manage and analyze their own GIS data and models.

**GRAD-G 591 Methods of Population Analysis & Applications (3 cr.)** Techniques of measuring and analyzing population size and trends, fertility and mortality patterns, migration flows. Population estimates and projections. Major models of formal demography.

**POLS-Y 673 Empirical Theory & Methodology (3 cr.)**

**POLS-Y 773 Empirical Theory & Methodology (3 cr.)**

**SPEA-E 518 Vector-based Geographic Information Systems (3 cr.)** Geographic information systems using vector data structure. Vector GIS capabilities and uses. Data structure and file management of spatial data. Laboratory exercises using vector-based GIS software such as ARC/INFO.

**SPEA-E 527 Applied Ecology (3 cr.)** Ecosystem concepts in natural resource management. Techniques of ecosystem analysis. Principles and practices of ecological natural resource management.

**SPEA-E 528 Forest Ecology & Management (3 cr.)** Field and laboratory exercises in quantitative analysis of forest ecosystems. Sampling and data collection methodologies, data analysis and interpretation. Concepts in forest ecology and forest management.

### Minor Elective Courses

#### University Graduate School

**GRAD-G 513 Topics Seminar in Human Dimensions of Environmental Change (3 cr.)** Topical courses related to the study of institutions, population, and environmental change will be arranged in light of recent scientific developments and student and faculty interests. Analysis of human roles in environmental change is contextualized by attention to biophysical and ecosystematic relationships.

**GRAD-G 514 Fieldwork Practicum in Human Dimensions of Environmental Change (12 cr.)**

P: Approval from director of the Center for the Study of Institutions, Population, and Environmental Change. Topical courses related to the study of institutions, population, and environmental change will be arranged in light of recent scientific developments and student and faculty interests. Analysis of human roles in environmental change is contextualized by attention to biophysical and ecosystematic relationships.

**GRAD-G 517 Seminar in Cultural Ecology: The Amazon in Crisis: Ecology and Development (3 cr.)**

Provides an introduction to the ecology of the Amazon Basin of South America, focusing on its habitats, the use and conservation of the environment by its native inhabitants, and examining the forces of development that threaten its very existence.

**GRAD-G 591 Methods of Population Analysis and Applications (3 cr.)** P: An undergraduate course in statistics. This is a course about methods of measuring and projecting population dynamics. We focus on describing the three basic demographic processes (mortality, fertility, and migration) and showing how each one affects population size and age structure. An understanding of these basic processes is fundamental for studying behavioral aspects of population change.

**GRAD-G 593 International Perspectives on Population Problems (3 cr.)** International trends in population growth, characteristics, and structure with attention to major social, environmental, economic, and political implications. Comparisons between industrially advanced economies and less developed countries in Latin America, Africa, and Asia. Special emphasis will be placed on local and national circumstances affecting fertility, mortality,

migration, and emerging roles of population policies in development planning.

### Anthropology

#### **ANTH-E 527 Environmental Anthropology (3 cr.)**

Graduate course on theory and method in the study of human-environment interactions. Emphasis on contemporary debates and approaches and on research design in environmental research.

#### **ANTH-E 600 Topic Seminar: Land-Use and Land-Cover Change (3 cr.)**

This course focuses on the relationship between land-use systems, human settlement patterns, and their impact on land cover and landscape structure. It aims to link the theoretical and methodological approaches that human ecology and landscape ecology bring to land use and production system analysis. The links between production system, land use, land cover, and landscape structure will be discussed in the context of contemporary problems, such as deforestation, agriculture intensification, and human dimensions of global environmental change.

#### **ANTH-E 600 Topic Seminar: Remote Sensing for Social Scientists (3 cr.)**

This course combines a historical review on the use of remote sensing in the social sciences, conceptual discussions on applications of remote sensing to social science problems, and a formal introduction to remote sensing techniques based on hands-on laboratory sessions. The course will consist of a conceptual and a laboratory session each week.

#### **ANTH-E 600 Topic Seminar: People and Forest: Contemporary Issues on Deforestation, Forest Management, and Agroforestry (3 cr.)**

The main goal of this seminar is to provide a semester-long "environment" in which the student's individual research interest (research paper, proposal, etc. related to "people and forest") can be "nurtured" and discussed with an interdisciplinary group of graduate colleagues. The goal is to work on a single research paper or dissertation proposal or dissertation chapter during the whole semester while interacting with colleagues in class.

**ANTH-E 621 Food and Culture (3 cr.)** Discusses the political economy of food production, trade and consumption on a global basis. Gives a cross cultural and historical perspective on the development of cooking and cuisine in relationship to individual, national, and ethnic identity. Relates cuisine to modernity, migration and forms of cultural mixing and Creolization.

#### **ANTH-E 644 People and Protected Areas: Theories & Realities of Conservation (3 cr.)**

Explores major theories and approaches to conservation, from "fortress conservation" to community-based and participatory strategies. It considers the implications of protected areas for local human populations and cultural diversity. It evaluates outcomes and unintended consequences of protected areas, and controversies over the "best" way to protect natural resources.

### Geography

#### **GEOG-G 511 Sustainable Development Systems (3 cr.)**

P: G208 or consent of instructor. An examination of the notion of sustainable development and its meaning and implementation in the areas of resources, agriculture, water, transport, cities, and tourism. Also considers

how such systems can be implemented in developed countries.

#### **GEOG-G 517 Geography and Development: Critical Perspectives (3 cr.)**

Critical analysis of development theory, development practice, and the discourse of development, particularly within the context of the Third World. Geographic approach to the study of neoliberalism and globalization, commodity chains, transnational corporations, multi-lateral organizations, labor relations, NGOs, consumption practices, sustainability, gender, and culture.

#### **GEOG-G 520 Migration and Population Redistribution (3 cr.)**

P: G314 and G320, or consent of instructor. Examines the history of geography. Particular reference is made to the use of philosophical traditions of positivism, structuralism, humanism and postmodernism within geography and to the major debates about philosophy and methodology in the last two centuries within the discipline.

#### **GEOG-G 535 Environmental Remote Sensing (3 cr.)**

P: G314 and G320, or consent of instructor. Principles of remote sensing of the earth and its atmosphere, emphasizing satellite data in visible, infrared, and microwave portions of the electromagnetic spectrum. Emphasis on practical applications and digital image analysis. A satellite data analysis project is required.

#### **GEOG-G 536 Advanced Remote Sensing: Digital Image Processing (3 cr.)**

P: G535 or consent of instructor. Advanced remote sensing theory and digital image processing techniques with an emphasis on environmental science applications. Hands-on computer exercises provide significant experience in digital image processing techniques for extraction of qualitative and quantitative information about Earth's terrestrial and aquatic environments.

#### **GEOG-G 538 Geographic Information Systems (3 cr.)**

Overview of the principles and practices of geographic information systems (GIS). Spatial data models, database design, introductory and intermediate GIS, operations and case studies of real-world GIS applications. Laboratory exercises will provide significant hands-on experience. Lecture and laboratory.

#### **GEOG-G 539 Advanced Geographic Information Systems (3 cr.)**

P: G538 or consent of instructor. Intermediate and advanced topics in geographic information science and spatial analysis techniques using GIS software. This advanced course is for students who seek a greater understanding of this rapidly developing field and to learn how to construct, manage, and analyze their own GIS data and models.

#### **GEOG-G 549 Political Ecology (3 cr.)**

P: G315, G320, G341, G343 or consent of instructor. This seminar introduces political ecology, an approach which focuses on the political-economic context of natural resource conflicts with particular attention to issues of equity, justice and power. This course covers the theoretical lineage of political ecology, its development over the last twenty years, and current hot topics in the field.

#### **GEOG-G 551 Water Resources (3 cr.)**

P: One introductory physical science course and at least one 300-level physical/biological science course or consent of instructor. Introduction to hydrological processes occurring

at multiple spatial and temporal scales. Principles of water resources such as infiltration, runoff, surface- and groundwater flow will be explored. Topics covered also include the environmental, economic, and social implications of floods, droughts, dams, and water usage as well as current and future issues in water quality, water pollution, and water-resource regulation.

**GRAD-G 578 Global Change, Food and Farming Systems (3 cr.)** P: G208 or consent of instructor.

Introduction to systems of food production and consumption, emphasizing linkages to globalization and environmental change. Reviews the origins of agriculture, contemporary farming systems, and agricultural adaptation and sustainability, with attention to the impacts of changing climate, land use, and social systems (including industrialization, urbanization, population growth, and economic liberalization). Additional topics include agricultural decision making; farming livelihoods; gender and poverty; prospects and challenges of biotechnology; agroecology; and food security and global health.

**GEOG-G 639 Topical Seminar in Geographic Information Science (3 cr.)** Applications of geographic information science principles in the collection and analysis of spatial data. Integration of GIS, remote sensing, and GPS technologies. Review of current literature on technique, theory, technology, and applications with an emphasis on environmental topics. Discussion, laboratory, and research project.

**Political Science**

**POLS-Y 669 International Relations: International Political Economy (3 cr.)** Illustrative topics: approaches and issues; international conflict; international organization; quantitative international relations; analysis and evaluation of policy making; U.S. foreign policy; Soviet foreign policy; international and comparative communism.

**POLS-Y 773 Empirical Theory and Methodology: Revisiting Collaborative Forest Communities in Indiana (3 cr.)**

**School of Public and Environmental Affairs**

**SPEA-E 465 Environmental Management in the Tropics (3 cr.)** Historical examination of land use in tropical, non-Western cultures. Resource use in physical and cultural settings is explored through an interface with ecology, economics, and policy analysis. Common principles of analysis are used to help the students understand the cultural and historical dimensions of how people relate to their environment.

**SPEA-E 518 Vector-Based Geographic Information Systems (3 cr.)** Geographic information systems using vector data structure. Vector GIS capabilities and uses. Data structure and file management of spatial data. Laboratory exercises use ARC/INFO software.

**SPEA-E 522 Urban Forest Management (2-3 cr.)** Originally an outgrowth of arboriculture, urban forestry now encompasses the broader concepts of managing the trees, forests, and other natural resources of cities for ecological, economic, and social benefits. Lectures, discussion, and field projects will be supplemented by outside speakers. (IUB and Bloomington will be the field laboratory.)

**SPEA-E 527 Applied Ecology (3 cr.)** P: One introductory-level ecology course. Ecosystem concepts in natural resource management. Techniques of ecosystem analysis. Principles and practices of ecological natural resource management.

**SPEA-E 528 Forest Ecology and Management (3 cr.)** P: E538 or V506. Field and laboratory exercises in quantitative analysis of forest ecosystems. Sampling and data collection methodologies. Data analysis and interpretation. Concepts in forest ecology and forest management.

**SPEA-E 534 Restoration Ecology (3 cr.)** P: E538 or V506. The course will cover basic concepts of ecosystem restoration, including development of energy flow and nutrient cycles, soil formation, mechanisms of species dispersal, and colonization and mutualistic relationships. Restoration of specific terrestrial and aquatic ecosystems, including grasslands, forests, lakes, rivers and streams, and wetlands, will be covered.

**SPEA-E 555 Topics in Environmental Science: Sustainable Forestry (2-3 cr.)** This class will review and discuss the science base for sustainable forestry, the human-dimensions interactions, and the political realities. The course format will be discussion-based with students leading the discussion on various assigned articles and publications. Each student will write and present several papers based on literature reviews and analyses.

**SPEA-E 557 Conservation Biology (3 cr.)** P: One 300-level ecology course. Ecological principles associated with rare species and with biodiversity, laws and statutes used to conserve biodiversity, and land and species management practices. Our aim is to understand scientific and political complexities of conservation biology and to study different methods used to conserve living resources and resolve conflicts associated with conservation.

## Environmental Programs

**School of Public and Environmental Affairs**  
Departmental E-mail: [speainfo@indiana.edu](mailto:speainfo@indiana.edu)

Note: Be sure to specify which program you are interested in when sending mail.

Departmental URL: [www.indiana.edu/~spea/](http://www.indiana.edu/~spea/)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Program Information

The environmental programs described below are cooperative undertakings of the School of Public and Environmental Affairs (SPEA), the College of Arts and Sciences, and the University Graduate School. They are administered by SPEA or the University Graduate School or both and provide courses and degree programs for students not only in SPEA, but across the university.

#### Degrees Offered

Dual master's degrees in environmental science (M.S.E.S.) and chemistry (M.S.), dual degrees in



environmental science (M.S.E.S.) and geological sciences (M.S.), dual master's degrees in environmental science (M.S.E.S.) and physics (M.S.), (all three dual degrees are offered jointly with SPEA), and the Doctor of Philosophy in environmental science. In addition, SPEA offers the Master of Science in Environmental Science (M.S.E.S.), the Master of Public Affairs (M.P.A.) with a concentration in environmental policy and natural resources management, a combined M.S.E.S./M.P.A. degree, a combined M.S.E.S. and Doctor of Jurisprudence, and a combined M.P.A. and Doctor of Jurisprudence. The latter two combined degrees are offered jointly with the Maurer School of Law. For information regarding ecology and evolutionary biology and geological sciences, consult the respective department listings elsewhere in this bulletin; for information regarding the degrees offered exclusively or jointly by the School of Public and Environmental Affairs and the School of Law, see their respective bulletins or call (812) 855-2840.

### Dual Master Degrees

The student must apply to and be accepted by both the School of Public and Environmental Affairs and either the program in ecology and evolutionary biology of the Department of Biology, the Department of Geography, the Department of Geological Sciences, or the Department of Physics.

### Requirements

For the dual master's degree in environmental science (M.S.E.S.) and geological sciences (M.S.) a total of 60 credit hours that qualify the student for two master's degrees are required. For specific program requirements, see the departmental listings in this bulletin and the School of Public and Environmental Affairs Graduate Programs Bulletin.

The combined Master of Science in Environmental Science (M.S.E.S.) and Physics (M.S.) is a two-year, 51-credit hour sequence of courses and research that provides depth and breadth in both environmental science and physics. The student must complete a minimum of 21-credit hours in each program. Students design their dual curriculum in consultation with the graduate advisor of both programs from six components (physics core; environmental science core; economics, policy, and law competencies; tool skills; environmental chemistry concentration; and professional experience).

Each student must take a 3-credit hour course in which they participate in a team to carry out an integrative project that addresses a multidisciplinary problem.

Capstone course credit may be double-counted in either concentration or tool skill requirements. The capstone requirement may be met by (1) SPEA-V 600, Capstone in Public and Environmental Affairs, sections with an environmental focus, or (2) an alternative course with a similar structure, such as SPEA-E 560, Environmental Risk Analysis or another approved course. Both degrees are awarded when the student meets the degree requirements of the Department of Physics and the School of Public and Environmental Affairs.

### Doctor of Philosophy in Environmental Science Degree

This doctoral program is administered by the School of Public and Environmental Affairs in cooperation with the

Departments of Biology, Chemistry, Geography, and Geological Sciences. The Ph.D. in environmental science degree is awarded by the University Graduate School.

The program provides a rigorous, comprehensive education in environmental science. The specific objectives of the program are:

- to conduct advanced research and scientific analysis of environmental events, issues, and problems
- to further understanding of the nature and management of natural and human environments
- to provide an opportunity for students and faculty members in several departments to engage in collaborative environmental research in an interdisciplinary mode.

### Admission

A student must apply to the School of Public and Environmental Affairs for doctoral studies; those accepted will be recommended to the University Graduate School for formal admission into the Ph.D. program. Applicants to this program must have completed at least a bachelor's degree in science, mathematics, engineering, or a related field. Prospective students are required to submit:

- a statement of purpose, which should be as specific as possible and, preferably, should refer to potential research mentors by name
- official transcripts of all undergraduate and graduate course work completed; and
- three letters of recommendation. Applicants whose native language is not English must also submit results of the Test of English as a Foreign Language (TOEFL).

### Degree Requirements

- substantial knowledge in a primary environmental science concentration
- breadth in related environmental science and policy
- an understanding of research methods
- an in-depth knowledge of the dissertation topic
- a dissertation that demonstrates the student's ability to analyze, explain, and interpret research clearly and effectively.

### Advisory Committee

During the first semester of enrollment, each student must organize an advisory committee. Normally this committee consists of at least four faculty members: at least two should be from the School of Public and Environmental Affairs; the others may be from other departments or from outside the university. Membership of the advisory committee is approved by the director of the Doctoral Program in Environmental Science and the dean of the University Graduate School. At least three members of the advisory committee must be full members of the graduate faculty.

### Fields of Study

Each student should define a principal field of study which may be interdisciplinary. The student should prepare a proposal outlining a program of course work that the student believes lies within that principle field.

Each student should also prepare a program of course work that fulfills the requirement of breadth in environmental science and policy. The breadth requirement may be fulfilled by using a wide spectrum of environmentally related courses, including areas such as economics, law, and management, in addition to other science courses.

Each student is also required to prepare a statement of courses or activities for meeting the research methods requirement. Normally these include subjects such as computer science, geographic information systems, remote sensing, statistics, and mathematical modeling, although other technical skill areas such as electronics and analytical chemical techniques may be appropriate for some students.

### **Narrative Statement**

Each student must prepare a narrative statement that includes a discussion of the student's previous education experiences, a statement of career objectives, a statement of research interests, and a proposed program of course work.

Each student must submit the narrative statement to the advisory committee for approval, usually during the first semester in the program.

### **Course Requirements**

The exact nature and amount of course work in each of three areas—principal field of study, breadth in environmental science and policy, and research methods—is determined by the advisory committee after review and approval of the student's proposed plan of study in each of these areas. Selection of specific courses is based on obtaining

- adequate knowledge for qualifying examinations
- appropriate preparation for a research project
- a mixture of courses that meet the individual professional goals of the student.

The Ph.D. requires the completion of at least 90 credit hours in advanced study and research beyond the bachelor's degree. A student must complete a minimum of 30 credit hours of advanced course work in environmental science and policy. Students must also complete a minimum of 30 credit hours of research, normally taken as SPEA-E 625 or SPEA-E 890. The student, with approval of the advisory committee, should complete some combination of additional course work and research sufficient to meet the 90 credit hour requirement.

Students are required to enroll in SPEA-E 680 Seminar in Environmental Science and Policy for a total of 4 credit hours (1 credit hour/semester) during the course of their degree program. In the event of an extenuating circumstance, in consultation with their major advisor and approval of the program director, a student could enroll in 2 credit hours of SPEA-E 680 during a semester. Students must give at least one seminar presentation in SPEA-E 680 as part of their Ph.D. in environmental science requirement.

Students should note that all 30 credit hours of advanced course work, if properly selected, and 6 credit hours of research, may be applied toward the Master of Science in Environmental Science (M.S.E.S.) degree. With an

additional 12 credit hours of approved course work, a student may be awarded the M.S.E.S. degree while completing the requirements for the Ph.D. degree in environmental science. Completion of the M.S.E.S. degree as part of this doctoral program is not a requirement; however, this option may be appropriate for some students.

### **Qualifying Examinations**

Before a student is admitted to candidacy, all requirements determined by the advisory committee must be met and the qualifying examinations passed. A student who fails qualifying examinations may retake them only once.

The decision to admit a student to doctoral candidacy is made by the advisory committee, which evaluates the student's performance in the written examination, research proposal, and oral examination.

### **Written Examination**

This examination should be taken by the end of the student's fifth semester in the Ph.D. program. The exam focuses on topics covered by the student's course work and related to the student's research interests. The examination is written and graded by the student's advisory committee. The written examination is graded as pass, conditional pass, or fail.

### **Research Proposal**

No later than the end of the fifth semester, the student should submit a written research proposal for review by the advisory committee. The proposal should be documented, clearly stating a research objective, the approach to be taken, and the significance of the work.

### **Oral Examination**

Each candidate is examined orally by the advisory committee. The oral examination expands upon the written examination and covers the student's research proposal.

### **Research Committee**

Upon the student's successful completion of the qualifying examinations, a research committee is formed. Normally this committee consists of at least four faculty members: at least two should be from the School of Public and Environmental Affairs; the others may be from other departments. The director of the Doctoral Program in Environmental Science recommends the student's research committee to the dean of the University Graduate School. At least three members of the research committee must be full members of the graduate faculty.

### **Dissertation**

A dissertation is required and must be of sufficient value to warrant publication. The dissertation must represent a substantial research effort, both in quality and quantity. The dissertation requirement may be met by preparing a traditional dissertation or by preparing a portfolio of research documents including publications, manuscripts in press, and a completed manuscript suitable for submission to a journal. These documents may have multiple authors, although the doctoral candidate must demonstrate that he or she made significant contributions to at least two of the publications or manuscripts submitted



for review. The research portfolio must have introductory and concluding chapters to integrate across the topics. The research portfolio also must be prepared to meet the University Graduate School's requirements for dissertations. A public presentation of the dissertation research is required. The dissertation must be approved by the research committee.

### **Ph.D. Minor in Environmental Science**

(9 credit hours)

Students in Ph.D. programs at Indiana University may, with the consent of their advisory committee, choose environmental science as an outside minor. The minor is flexible and is usually designed by students in accordance with their needs.

#### **Requirements**

1. The doctoral candidate must secure a faculty advisor in consultation with the director of the Doctoral Program in Environmental Science. The advisor may not be from the candidate's major department. The candidate's ES minor advisor serves as the representative in all examinations or other requirements of the candidate's Ph.D. program that relate to the minor. The advisor decides on the character of the examination, if any, in the minor field and certifies that the candidate has met the requirements of the minor.

2. The candidate must take at least 9 credit hours of graduate-level courses related to environmental science. The minor will consist of 3 total courses, 9 total credits. The minor will have at least two Environmental courses from SPEA and one elective course. The choice of courses should be made in consultation with the candidate's advisor and must be approved by the director of the Doctoral Program in Environmental Science. Acceptance of the proposed minor is based on two criteria: (1) the courses must have a direct relationship to environmental science, and (2) the courses must not normally be required as part of major or tool skill options in the student's major department. Courses in the minor program should be selected according to the student's interest.

3. A minimum cumulative grade point average of 3.0 (B) must be attained in all courses used for the minor.

### **Ph.D. Minor in Environmental Studies**

(12 credit hours)

Students in Ph.D. programs at Indiana University may, with the consent of their advisory committee, choose environmental studies as an outside minor. The minor is flexible and is usually designed by students in accordance with their needs.

#### **Requirements**

1. The doctoral candidate must secure a faculty advisor in consultation with the director of the Doctoral Program in Environmental Science. The advisor may not be from the candidate's major department. The candidate's advisor serves as the representative in all examinations or other requirements of the candidate's Ph.D. program that relate to the minor. The advisor decides on the character of the examination, if any, in the minor field and certifies that the candidate has met the requirements of the minor.

2. The candidate must take at least 12 credit hours of graduate-level courses related to environmental studies. These courses must be from at least two different disciplines outside the candidate's major department. The choice of courses should be made in consultation with the candidate's advisor and must be approved by the director of the Doctoral Program in Environmental Science. Acceptance of the proposed minor is based on two criteria: (1) the courses must have a direct relationship to environmental studies, and (2) the courses must not normally be required as part of major or tool skill options in the student's major department. Courses in the minor program should be selected according to the student's interest. Students majoring in areas other than the natural sciences, for example, may wish to consider course offerings in the natural sciences; similarly, natural science students might consider course offerings in the social and behavioral sciences.
3. A minimum cumulative grade point average of 3.0 (B) must be attained in all courses used for the minor.

### **Faculty**

#### **Graduate Faculty**

Unless otherwise noted in parentheses, the faculty member's primary affiliation is with the School of Public and Environmental Affairs.

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### **Distinguished Professors**

Gary Hieftje\* (Chemistry), Ronald Hites\* (Public and Environmental Affairs)

#### **Professors**

Randall Baker\* (Emeritus), Simon Brassell\* (Geological Sciences), Sharon Brehm\* (Emeritus, Psychology), Edward S. Brondizio\* (Anthropology), Keith Clay\* (Biology), Chris Craft\*, Jeremy Dunning\* (Geological Sciences), George Ewing\* (Emeritus, Chemistry), Burnell C. Fischer\* (Clinical Emeritus), Robert L. Fischman\* (Law), Hendrik Haitjema\* (Emeritus), Daniel C. Knudsen\* (Geography), Vicki Meretsky\*, Emilio Moran\* (Emeritus, Anthropology), Flynn Picardal\*, Lisa Pratt\* (Geological Sciences), Sara Pryor\* (Geography), J. C. Randolph\* (Emeritus), Edwardo Rhodes (Emeritus)\*, Scott Robeson\* (Geography), Philip Stevens\*, Jeffrey White\*, Donald Whitehead\* (Emeritus, Biology)

#### **Associate Professors**

Shahzeen Attari, Sanya Carley\*, David H. Good\*, Diane Henshel\*, David Konisky, Kerry Krutilla\*, Kimberly Novick, Jonathon Raff, Ingrid Ritchie\* (I), Joe Shaw, Todd Royer, Catherine Tucker\*, Chen Zhu\* (Geological Sciences)

#### **Assistant Professors**

Michael Muehlenbein (Anthropology), Adam Ward

An (I) after a faculty member's name indicates that the person teaches at Indiana University–Purdue University Indianapolis.

### Academic Advisor

Professor Kimberly Novick\*, MSB II 316 , (812) 855-4953

### Doctoral Student Advisor

Professor Kimberly Novick\*, MSB II 316 , (812) 855-4953

### Courses

For descriptions of courses offered by the School of Public and Environmental Affairs, see the School of Public and Environmental Affairs Graduate Programs Bulletin.

## Institute for European Studies

**Hamilton Lugar School of Global and International Studies**

**College of Arts and Sciences**

**Departmental E-mail:** [euoinst@indiana.edu](mailto:euoinst@indiana.edu)

**Departmental URL:** <http://euro.indiana.edu/>

The Institute of European Studies is affiliated with the Hamilton Lugar School of Global and International Studies (HLS). Located in the College of Arts and Sciences, HLS is dedicated to providing Indiana University graduate students with the intellectual tools they will need to live, work, and thrive in the globalized world of the twenty-first century. Degree programs associated with HLS emphasize language proficiency, cultural competency, and in-depth training in qualitative and quantitative methodologies. HLS students will enjoy unparalleled access to a stellar faculty and professional development opportunities. For further information regarding the mission, structure and resources of the Hamilton Lugar School of Global and International Studies see <http://hls.indiana.edu/>.

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Academic Advising

Global and International Studies Building 4017, (812) 855-3280

#### Program Information

The Institute for European Studies (EURO) offers a Master of Arts (M.A.) degree in European Studies, and five dual degree programs: an M.A./M.B.A. (Master of Business Administration) with the Kelley School of Business; an M.A./M.P.A. (Master of Public Affairs) with the O'Neill School of Public and Environmental Affairs; an M.A./M.I.S. (Master of Information Science) with the Luddy School of Informatics, Computing, and Engineering; an M.A./M.P.H (Master of Public Health) with the School of Public Health; and an M.A./J.D. (Doctor of Jurisprudence) with the Maurer School of Law.

The European Studies Master's program offers a flexible yet rigorous approach to the study of modern Europe that combines courses in the social sciences, humanities, and languages to give students a broad understanding of the politics, economics, history, and cultures of the countries of Europe and the European Union, while allowing the

student to tailor the program to their interests. Students may focus on a particular country or region in Europe or on the European Union. The dual degrees add a level of professional training. M.A. graduates have in-depth knowledge about Europe and are prepared to work in a wide variety of positions in the public and private sector. Students may also choose to follow the Master's degree with advanced graduate studies.

The Institute for European Studies is affiliated with the Hamilton Lugar School of Global and International Studies. Located in the College of Arts and Sciences, HLS is dedicated to providing Indiana University graduate students with the intellectual tools they will need to live, work, and thrive in the globalized world of the twenty-first century. Degree programs associated with HLS emphasize language proficiency, cultural competency, and in-depth training in qualitative and quantitative methodologies. HLS students will enjoy unparalleled access to a stellar faculty and professional development opportunities. For further information regarding the mission, structure and resources of the Hamilton Lugar School of Global and International Studies see:

### Degrees Offered

Master of Arts, Master of Arts/Master of Business Administration (jointly with the Kelley School of Business), Master of Arts/Master of Public Affairs (jointly with the O'Neill School of Public and Environmental Affairs), Master of Arts/Master of Information Science (jointly with the Luddy School of Informatics, Computing, and Engineering), Master of Arts/Master of Public Health (jointly with the School of Public Health), Master of Arts/Doctor of Jurisprudence (jointly with the Maurer School of Law).

European Studies also offers a Graduate Certificate and a Ph.D. minor for doctoral students.

### Special Program Requirements

(See also general University Graduate School requirements.)

### Master of Arts Degree Admission

Bachelor's degree and completion of the Graduate Record Examination. No language proficiency is required for admission, although intermediate or advanced knowledge of one European language is recommended.

### Course Requirements

A total of 30 credit hours of graduate course work, distributed over three categories. Category I consists of four required courses including Research Seminar (3 cr.); one approved graduate course in European studies from History (3 to 4 cr.); one approved graduate course on the politics of Europe or the European Union (3 cr.); and one approved course pertaining to Europe in the World (3 cr.).

Category II consists of five courses (min. 15 cr.) in electives from the following four areas: literature or culture from the European region or area where the student's language of specialization is spoken (3 cr.); one approved graduate elective course in the humanities; one approved graduate elective course in the social sciences; and 5-6 credit hours in approved graduate elective coursework.

Category III consists of a minimum of at least 3 credit hours devoted to the thesis (EURO-800).

### Language Requirement

Proficiency at the intermediate-mid to intermediate-high level of one approved European language appropriate to the student's program is required. Language requirements are explained in detail in the "Academic Regulations" section of this bulletin. Language proficiency exams are administered by the respective language departments.

### Thesis

Required. The student must select a thesis advisory committee of at least three faculty members. A faculty member affiliated with European Studies should be selected as chair. The Institute for European Studies adheres to thesis format and printing requirements set by the University Graduate School. Master's theses range in length from 50 to 75 pages, not to exceed 100 pages. A European Studies Master's thesis should draw on resources from the language of specialization. (3 cr.).

### Dual Degree: Master of Arts in European Studies and Master of Business Administration

The Institute for European Studies and the Kelley School of Business jointly offer a three-year program that qualifies students for two Master's degrees. Study for these two degrees can be combined for a total of 66 credit hours rather than the 84 credit hours required for the two degrees taken separately. The European Studies component of the degree requires 30 hours of credit, 6 of which are taken through Kelley School of Business and count toward both degrees. The other 24 hours of credit must be in accordance with the requirements of the Master of Arts in European Studies. Dual M.A./M.B.A. students should expect to pay University Graduate School tuition rates for one academic year (two semesters) and the Kelley School of Business M.B.A. flat fee for two years (four academic semesters) of the program. Both degrees must be awarded simultaneously.

### Admission

To be eligible for the joint M.A./M.B.A. program, students must apply to the two Master's programs separately. A student must submit an application to and be accepted by the Kelley School of Business for study toward the Master of Business Administration and by European Studies in the Graduate School for study toward the Master of Arts degree. See "Master of Arts Degree" for admission requirements.

### European Studies Course Requirements

Students take 24 graduate credits in European Studies under the course requirements for the M.A., including: all four Category I courses (12 cr.); two out of three courses from the following (6 cr.): literature or culture from the European region or area where the student's language of specialization is spoken, one approved graduate elective course in the humanities, or one approved graduate elective course in the social sciences; plus one general elective (3 cr.) and 3 thesis hours.

### Business Course Requirements

Forty-two graduate credit hours for the M.B.A. degree under the course requirements for the M.B.A. Full

information about the M.B.A. program should be obtained from the Kelley School of Business M.B.A Program Office.

### Language Requirements

Proficiency at the intermediate-mid to intermediate-high level of one approved European language appropriate to the student's program is required. Language requirements are explained in detail in the "Academic Regulations" section of this bulletin. Language proficiency exams are administered by the respective language departments.

### Thesis

Required. The student must select a thesis advisory committee of at least three faculty members representing both European Studies and the Kelley School of Business. European Studies adheres to thesis format and printing requirements set by the University Graduate School. Master's theses range in length from 50 to 75 pages, not to exceed 100 pages. It is strongly advised that the student spend the first year of the three-year program completing requirements for the M.A. part of the program, and that the second year be spent in the first year of the M.B.A. program, thus allowing the third year to focus on electives and the thesis.

### Dual Degree: Master of Arts in European Studies and Master of Public Affairs

European Studies and the O'Neill School of Public and Environmental Affairs jointly offer a three-year program that qualifies students for two Master's degrees. Study for these two degrees can be combined for a total of 60 credit hours rather than the 78 credit hours required for the two degrees taken separately.

### Admission

To be eligible for the joint M.A./M.P.A. program, students must apply to the two Master's programs separately. A student must submit an application to and be accepted by the O'Neill School of Public and Environmental Affairs for study toward the Master of Public Affairs degree and by European Studies in the Graduate School for study toward the Master of Arts degree. See "Master of Arts Degree" for admissions requirements.

### European Studies Course Requirements

Students take 24 graduate credits in European Studies under the course requirements for the M.A., including: all four Category I courses (12 cr.); two out of three courses from the following (6 cr.): literature or culture from the European region or area where the student's language of specialization is spoken, one approved graduate elective course in the humanities, or one approved graduate elective course in the social sciences; plus one general elective (3 cr.) and 3 thesis hours.

### Master of Public Affairs Course Requirements

Students are required to complete 36 graduate credit hours comprised of the M.P.A. core and a specialized concentration. M.P.A. Core (18 cr.): V502 Public Management (3 cr.), V506 Statistical Analysis for Policy and Management (3 cr.), V517 Public Management Economics (3 cr.), V540 Law and Public Affairs (3 cr.), V560 Public Finance and Budgeting (3 cr.), V600 Capstone in Public and Environmental Affairs (3 cr.); Specialized Concentration (18 cr.): Students are required

to develop a specialized concentration comprised of courses approved by School of Public and Environmental Affairs faculty advisors.

### Language Requirements

Proficiency at the intermediate-mid to intermediate-high level of one approved European language appropriate to the student's program is required. Language requirements are explained in detail in the "Academic Regulations" section of this bulletin. Language proficiency exams are administered by the respective language departments.

### Thesis

Required. The student must select a thesis advisory committee of at least three faculty members representing both European Studies and the O'Neill School of Public and Environmental Affairs. European Studies adheres to thesis format and printing requirements set by the University Graduate School. Master's theses are not to exceed 100 pages.

### Dual Degree: Master of Arts in European Studies and Master of Information Science

Our dual degree program in cooperation with the Luddy School of Informatics, Computing, and Engineering prepares students for a wide range of careers requiring a combination of technical skills in information science, instructional design and development, evaluation, and analysis. Study in the dual degree program allows students to complete the M.A. and M.I.S. with a total of 60 credit hours rather than the 72 hours that would be required to take the two degrees separately. M.A./M.I.S. dual-degree students should expect to pay University Graduate School tuition rates for approximately half of their enrolled semesters at IU and professional school tuition rates for the other half. Students take at least 24 graduate credit hours in EURO and at least 36 graduate credit hours the Luddy School. Under this program, the two degrees must be awarded simultaneously.

### Admission

To be eligible for the dual M.A./M.I.S. program, students must apply for the two Master's programs separately. A student must submit an application and be accepted by the School of Informatics and Computing for study toward the Master of Information Science degree and by European Studies in the Graduate School for study toward the Master of Arts degree. See "Master of Arts Degree" for admission requirements.

### European Studies Course Requirements

Students take 24 graduate credits in European Studies under the course requirements for the M.A., including: all four Category I courses (12 cr.); two out of three courses from the following (6 cr.): literature or culture from the European region or area where the student's language of specialization is spoken, one approved graduate elective course in the humanities, or one approved graduate elective course in the social sciences; plus one general elective (3 cr.) and 3 thesis hours.

### Master of Information Science Requirements

Students must take 36 credit hours of graduate coursework. Full information on the M.I.S. curriculum is contained in the Department of Information and Library

Science Bulletin. No courses satisfying the 36 credits for the M.I.S. may be used simultaneously toward the EURO M.A.. A dual-degree student can only apply credits for taking a cross-listed course toward the credit requirement of one degree but not both.

### Language Requirements

Proficiency at the intermediate-mid to intermediate-high level of one approved European language appropriate to the student's program is required. Language requirements are explained in detail in the "Academic Regulations" section of this bulletin. Language proficiency exams are administered by the respective language departments.

### Thesis

Required. The student must select a thesis advisory committee of at least three faculty members representing both EURO and the Luddy School. The Institute for European Studies adheres to thesis format and printing requirements set by the University Graduate School. Master's theses range in length from 50 to 75 pages, not to exceed 100 pages.

### Dual Degree: Master of Arts in European Studies and Master of Public Health

European Studies and the School of Public Health jointly offer a three-year program that qualifies students for two Master's degrees. Study for these two degrees can be combined for a total of 56 credit hours rather than the 70 credit hours required for two degrees taken separately. The Directors of Graduate Studies of both degree programs agree to allow sharing of electives, which reduces the total number of credits required to earn both degrees. For information about specific requirements for this joint degree program, please contact the Director of Graduate Studies for each program.

### Admission

Students interested in pursuing the dual degree must submit full applications for admission to both graduate programs, as well as provide written notice of their intent to pursue the dual degrees to both program directors. A prospective dual degree student must be admitted to both degrees by the faculty of that program---this may occur via simultaneous application for admission to both programs, or a student may apply to the second degree no later than one year after matriculating into one of the two degree programs.

### European Studies Course Requirements

Students take 24 graduate credits in European Studies under the course requirements for the M.A., including: all four Category I courses (12 cr.); two out of three courses from the following (6 cr.): literature or culture from the European region or area where the student's language of specialization is spoken, one approved graduate elective course in the humanities, or one approved graduate elective course in the social sciences; plus one general elective (3 cr.) and 3 thesis hours.

### School of Public Health Requirements

The student must complete 38 credit hours of graduate coursework. Full information on the M.P.H. curriculum is contained in the School of Public Health Bulletin.



## Language Requirement

Proficiency at the intermediate-mid to intermediate-high level of one approved European language appropriate to the student's program is required. Language requirements are explained in detail in the "Academic Regulations" section of this bulletin. Language proficiency exams are administered by the respective language departments.

## Thesis

Required. The student must select a thesis advisory committee of at least three approved faculty members representing both European Studies and the School of Public Health-Bloomington. EURO adheres to thesis format and printing requirements set by the University Graduate School. Master's theses range in length from 50 to 75 pages, not to exceed 100 pages.

## Joint Degree: Master of Arts in European Studies and Doctorate of Jurisprudence

European Studies offers a joint degree program in cooperation with the Maurer School of Law. The program is designed to provide students with a through grounding in the European region together with professional legal training. The joint program allows students to complete the M.A. and J.D. with a total of 103 credit hours rather than the 118 hours that would be required to complete the two degrees separately. The two degrees must be awarded concurrently. All joint-degree students should expect to pay Graduate School tuition rates for the graduate courses offered through the Hamilton Lugar School and the College of Arts and Sciences, and School of Law tuition rates for courses offered through the Maurer School of Law.

## Admission

Students must apply separately for admission to the M.A. program in European Studies and the J.D. program in the Maurer School of Law and must be accepted to both units in order to be admitted to the joint degree program. Students may apply for admission to both programs simultaneously. Alternatively, students enrolled in one program may apply for admission to the other any time before the completion of their degree.

## European Studies Course Requirements

Students take 24 graduate credits in European Studies under the course requirements for the M.A., including: all four Category I courses (12 cr.); two out of three courses from the following (6 cr.): literature or culture from the European region or area where the student's language of specialization is spoken, one approved graduate elective course in the humanities, or one approved graduate elective course in the social sciences; plus one general elective (3 cr.) and 3 thesis hours. All course requirements must be completed with an average grade of B or above.

## Maurer School of Law Requirements

Students must complete 79 semester hours of credit in the School of Law, including all its required coursework, and maintain a cumulative grade point average of 2.3 to be eligible for graduation. Required coursework includes: the first year courses: Civil Procedure I, Constitutional Law I, Contracts, Criminal Law, Legal Profession, Legal Research, Writing I and II, Property, and Torts; a Research Seminar; a second substantial upper-

level writing experience (seminar, writing course, or independent research project); and Professional Skills Requirement.

## Thesis

Required. The student must select a thesis advisory committee of at least three faculty members approved by EURO. European Studies adheres to thesis format and printing requirements set by the University Graduate School. Master's theses range in length from 50 to 75 pages, not to exceed 100 pages.

## Language Requirement

Proficiency at the intermediate-mid to intermediate-high level of one approved European language appropriate to the student's program of study is required. Language requirements are explained in detail in the "Academic Regulations" section of this bulletin. Language proficiency exams are administered by the respective language departments.

## Graduate Area Certificate in European Studies

Area certificates can be awarded only in conjunction with completion of or progress toward a Master's level or higher degree at an accredited institution. Students must apply for admission and be accepted by the Graduate School as a non-degree seeking student.

## Course Requirements

A minimum of 15 graduate credit hours or five courses selected from an approved list of European Studies courses. Twelve hours or four courses must be selected from four topic areas/disciplines with advanced advisor approval plus two to four credit hours in an approved elective.

Twelve hours or four courses must be selected from the following list

1. One approved graduate course from History
2. One approved graduate course from Political Science or European Law
3. One approved graduate course on the European Union, Europe in the World or taking a comparative perspective on Europe and other world regions
4. One approved graduate course on Literature/Culture

Two to four credit hours is required through one approved graduate course in European Studies. A maximum of four credits or one course may be taken within the student's major field of study. A minimum average GPA of 3.0 or B must be achieved.

## Language Requirement

Reading proficiency in one European language approved by the graduate advisor.

## Ph.D. Minor in European Studies

A Ph.D. minor in European Studies is awarded as an outside minor to students who are pursuing a Ph.D. in another unit in the University Graduate School.

## Course Requirements

The degree consists of a total of 12 to 15 graduate credit hours of European area studies courses. The student must complete one approved graduate course in



European studies from History; one approved graduate course in Political Science on Europe or the European Union; one approved graduate course on Europe in the world or on the EU as an actor on the world stage, and one approved W605 seminar or approved cross-listed equivalent on the literature or culture of the student's European region of specialization (12 hours or four courses minimum). Additionally, the student may take one approved W605 elective or equivalent graduate elective on European Studies (3 cr). No more than 3 of the 12 credit hours may be in readings (W805) or independent research (W875). Only four credits may be taken from the student's major discipline.

### Language Requirement

Reading knowledge of at least one approved European language. Other languages may be approved if pertinent to the student's coursework. Language requirements are explained in detail in the "Academic Regulations" section of this bulletin. Language proficiency exams are administered by the respective language departments.

### Faculty

Franklin L. Hess (Modern Greek Program)

**Departmental E-mail** [euoinst@indiana.edu](mailto:euoinst@indiana.edu)

**Departmental URL** <https://euro.indiana.edu/>

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Rudy Professors

Clem Brooks\* (Sociology)

William E. Scheuerman (Political Science)

### Ameritech Endowed Chairs

David Audretsch\* (Public and Environmental Affairs)

### Distinguished Professors

David Audretsch\* (Public and Environmental Affairs)

Douglas Hofstadter\* (Cognitive Science)

Mark Roseman (Jewish Studies, History)

### Professors

Guillaume Ansart\* (French and Italian), John Applegate (Law), Marco Arnaudo\* (French and Italian), Keith Barton\* (Education), Domenico Bertoloni Meli\* (History and Philosophy of Science), Jack Bielasiak (Political Science), Laszlo Borhi\* (Central Eurasian Studies), Fritz Breithaupt\* (Germanic Studies), Maria Bucur\* (History), Ray Cashman (Folklore and Ethnomusicology), Michel Chaouli\* (Germanic Studies), Linda Charnes\* (English), Joseph Chen (Public Health), Andrea Ciccarelli (French and Italian), Aurelian Craiutu\* (Political Science), Ronald Day (Information and Library Science), Deborah Deliyannis\* (History), Elizabeth Dunn\* (Geography), Michelle Facos\* (Fine Arts), J. Cesar Felix-Brasdefer\* (Spanish and Portuguese), Kari Gade\* (Germanic Studies), Kimberly Geeslin\* (Spanish and Portuguese), Brian Joseph Gilley\* (Anthropology), Sander Gliboff\* (History and Philosophy of Science and Medicine), Gerhard Glomm\* (Economics), John Graham\* (Public and Environmental Affairs), Tracy Alan Hall\* (Germanic Studies), Andreas

Hauskrecht (Business), Timothy Hellwig\* (Political Science), David Hertz\* (Comparative Literature), Carl Ipsen\* (History), Jeff Isaac\* (Political Science), Bill Johnston\* (Comparative Literature), Eileen Julien\* (French and Italian, Comparative Literature), Joshua Kates (English), Dan Knudsen\* (Geography), Rebecca Lave\* (Geography), Karma Lochrie\* (English), Eric MacPhail\* (French and Italian), Herbert Marks\* (Comparative Literature), Rosemarie McGerr\* (Comparative Literature), Massimo Ossi\* (Music), Oana Panaïté\* (French and Italian), Anya Peterson Royce (Anthropology), Sarah Phillips\* (Anthropology), William Rasch\* (Germanic Studies), Toivo Raun\* (Central Eurasian Studies and History), Jean Robinson\* (Emerita, Political Science) Alvin Rosenfeld\* (English, Jewish Studies), Massimo Scalabrini\* (French and Italian), Jutta Schickore\* (History and Philosophy of Science and Medicine), Robert Schneider\* (History), Rebecca Spang\* (History), Rex Sprouse\* (Second Language Studies, Germanic Studies), Nicolas Valazza\* (French and Italian), Reyes Vila-Belda\* (Spanish and Portuguese), Steven Wagschal\* (Spanish and Portuguese), Timothy Waters\* (Law), Stephen Watt\* (English)

### Associate Professors

Patrícia Amaral (Spanish and Portuguese), Penelope Anderson (English), Hall Bjornstad\* (French and Italian), Vincent Bouchard\* (French and Italian), Brett Bowles (French and Italian), Alison Calhoun\* (French and Italian), Melissa Dinverno\* (Spanish and Portuguese), Lynn Duggan (Labor Studies), Susanne Even\* (Germanic Studies), Shannon Gayk\* (English), Margaret Gray\* (French and Italian), D. Rae Greiner\* (English), Joan Hawkins\* (Media), Edgar Illas\* (Spanish and Portuguese), Günther Jikeli (Jewish Studies, Germanic Studies), Giles Knox\* (Art History), Joan Pong Linton\* (English), Ellie Mafi-Kreft (Business), Joshua Malitsky\* (Media), David McDonald\* (Folklore and Ethnomusicology), Patricia McManus\* (Sociology), Alejandro Mejías-López\* (Spanish and Portuguese), Luciana Namorato\* (Spanish and Portuguese), Joanna Nizynska\* (Slavic), Roberta Pergher\* (History), Angie Raymond (Business), Jonathan Risner (Spanish and Portuguese), Benjamin Robinson\* (Germanic Studies), Julia Roos\* (History), Bret Rothstein\* (Art History), Kevin Rottet\* (French and Italian), David Joseph Rutkowski (Education), Scott Shackelford\* (Business), Sandra Shapshay\* (Philosophy), Abdulkader Sinno\* (Political Science), Johannes Turk\* (Germanic Studies), Barbara Vance\* (French and Italian), Estella Vieira\* (Spanish and Portuguese), John Walsh\* (Information and Library Science), William Kindred Winecoff (Political Science)

### Assistant Professors

Marina Antic (Slavic), Sarah Bauerle Danzman (International Studies), Colin Elliott (History), Elizabeth Hebbard\* (French and Italian), Jeffrey Saletnik (Art History)

### Visiting Assistant Professor

Kate Hunt (International Studies)

### Senior Lecturers

Troy Byler (Germanic Studies), Esther Ham (Germanic Studies), Franklin L. Hess (European Studies), Gergana May (Germanic Studies)

### Lecturers/Adjunct

Andrew Asher (Library), Tara Darcy-Hall (Biology), Ke-Chin Hsia (History), Olga Kalentzidou (Geography), Stepanka Korytova (Russian and East European Studies), Vassiliki Tsitsopoulou (Modern Greek)

### Academic Advising

Global and International Studies Building 4017, (812) 855-3280

### Courses

#### General

- EURO-G 599 Thesis Research (0 cr.)
- EURO-W 501 The Economics of European Integration (3 cr.) Study of the integration of the economies of the member states of the European Union (EU) since the Treaty of Rome; economic policy making institutions and the EU budget; economic theory of a customs union and a single market; imperfections in the single market, including unemployment; monetary integration, and monetary union; common policies and reforms; widening of the EU to the east and south; and emphasis on relevant current events.
- EURO-W 504 Model European Union (1-3 cr.) Analysis of the decision-making powers of the European Union (EU). Formal simulation of the EU. Course may be repeated for credit.
- EURO-W 605 Selected Topics in West European Studies (1.5-4 cr.)
- EURO-W 800 M.A. Thesis (arr\*\* cr.)
- EURO-W 805 Individual Readings in West European Studies (1-8 cr.)
- EURO-W 875 Research in West European Studies (arr. cr.)

#### Modern Greek

- EURO-E 200 Second-Year Modern Greek (3 cr.) P: Students enrolling must have either taken E491 or placement examination. Course will build on language skills acquired during first semester. This will involve covering more advanced grammar, vocabulary, and developing writing skills. Emphasis placed on verbal expression. For graduate reading knowledge. Credit will not count toward degree.
- EURO-E 491 Elementary Modern Greek for Graduate Students (3 cr.) For graduate reading knowledge. Credit will not count toward degree.
- EURO-E 492 Readings in Modern Greek for Graduate Students (3 cr.) P: E491 Continuation of first semester. Credit will not count toward degree.
- EURO-E 580 Advanced Modern Greek I: Cultural Literacy and Current Events (3 cr.) This course, designed for students who have completed the equivalent of two years of Modern Greek study,

assists advanced students in developing both their communicative competency in modern Greek and their awareness of Greek culture and society.

- EURO-E 581 Advanced Modern Greek II: Literature, History, and Cinema (3 cr.) This course assists advanced students in developing both their communicative competency and their awareness of Greek culture and history. In particular, the course will focus on improving language skills by engaging Greek history through literature and cinema.
- EURO-E 582 Guided Independent Study in Modern Greek (1-3 cr.) This course assists graduate students in developing the necessary language skills to conduct research in Modern Greek in their area of specialization and participate in the intellectual life of Modern Greece. Course content will be tailored to the students' specific needs.
- EURO-W 605 Topics in Modern Greek Society and Culture (3 cr.) Selected ideas, trends, and problems in modern Greek culture. Specific topics will be announced each semester.

## Film Studies

### College of Arts and Sciences

Departmental E-mail: [mediast@indiana.edu](mailto:mediast@indiana.edu)

Departmental URL: [www.indiana.edu/~cmcl/film/index.shtml](http://www.indiana.edu/~cmcl/film/index.shtml)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Students wishing to concentrate on film studies can pursue a Master of Arts and/or a Doctor of Philosophy degree in the Department of Communication and Culture. Specific topics in film studies are offered under media course titles each semester. Graduate students from other departments can also earn a Ph.D. minor in Communication and Culture with a focus on film. For more information, see degree requirements and the overview of media curriculum for graduate study under the listing for Communication and Culture.

### Faculty

#### Director

Assistant Professor Ted Striphas\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Chancellor's Professor

James Naremore\* (Emeritus, Communication and Culture, Comparative Literature, English)

#### Professors

Barbara Klinger\*, Gregory Waller\* (Chair, Communication and Culture)

### Associate Professors

Christopher Anderson\*, Joan Hawkins\*

### Assistant Professors

Mary Gray\*, Joshua Malitsky, Ted Striphas\*

### Adjunct Professors

Peter Bondanella\* (Emeritus, Comparative Literature, French and Italian), Sumie Jones\* (Emerita, Comparative Literature, East Asian Languages and Cultures), Darlene Sadlier\* (Spanish and Portuguese)

### Graduate Advisor

Associate Professor Jane Goodman\*, Classroom Office Building, 800 E. 3rd Street, Bloomington, (812) 855-3232

## Courses

### Communication and Culture

C503 Introduction to Media Theory and Aesthetics (3 cr.)  
 C506 Methods of Media Research (3 cr.)  
 C552 Media Institutions and the Production of Culture (3 cr.)  
 C560 Motion Picture Production (3-4 cr.)  
 C561 Intermediate Motion Picture Production (4 cr.)  
 C562 The Screenplay (4 cr.)  
 C592 Media Genres (3 cr.)  
 C594 History of European and American Films II (4 cr.)  
 C596 National Cinemas (3 cr.)  
 C606 Media Criticism (3 cr.)  
 C610 Identity and Difference (3 cr.)  
 C620 Media, Culture, and Politics (3 cr.)  
 C652 Globalization of Media (3 cr.)  
 C691 Authorship in the Cinema (4 cr.)  
 C792 Film History and Theory (4 cr.)  
 C793 Seminar in Media Studies (3 cr.)

### Comparative Literature

C692 Comedy in Film and Literature (4 cr.)  
 C693 Film Adaptations of Literature (4 cr.)  
 C790 Studies in Film and Literature (4-12 cr.)

### East Asian Languages and Cultures

E533 Studies in Chinese Cinema (3 cr.)

### English

L780 Special Studies in English and American Literature (4 cr.) Topics on film.

### Italian

M455 Readings in the Italian Cinema (3 cr.) May be repeated once for credit.  
 M500 Seminar in Italian Cinema (3 cr.)

### Telecommunications

R540 Special Projects in Telecommunications (cr. arr.)

## Folklore and Ethnomusicology

### College of Arts and Sciences

Departmental E-mail: [folkethn@indiana.edu](mailto:folkethn@indiana.edu)

Departmental URL: <https://folklore.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School uses those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Arts and Doctor of Philosophy in Folklore and Ethnomusicology

#### Fields of Study

The Department of Folklore and Ethnomusicology offers training in a number of subfields of folklore, including oral narrative, song, material culture, ritual, festival, worldview, as well as ethnomusicology, the study of music as culture, with emphasis on area studies, theory, and presentation and preservation of music. The department is dedicated to the study of expressive forms traditional, contemporary, vernacular, and popular within an integrative academic program. Students and faculty conduct research in a range of world areas, using diverse research methods: ethnographic, historical, archival, and laboratory. Students prepare for careers in a variety of academic and public settings. The department offers a graduate concentration in public practice that emphasizes research, critical orientations, and practical skills in the areas of public education, preservation, and presentation.

#### Special Requirements

(See also general University Graduate School requirements.)

#### Admission Requirements

A good undergraduate record in any of the humanities or social sciences will be acceptable for admission to graduate study in folklore and ethnomusicology. Students may be admitted to graduate study in folklore and ethnomusicology, concentrating in either folklore or ethnomusicology, in one of three categories: (1) M.A., (2) Ph.D., or (3) M.A./Ph.D.

#### Grades

The department will accept no course for credit toward a degree in which the grade is lower than a B– (2.7). All students must earn a B (3.0) or better in the required department courses and maintain a grade point average of at least 3.2.

### Master of Arts Degree in Folklore and Ethnomusicology

#### Foreign Language Requirement

Reading proficiency in one foreign language. Must be completed before or during the semester the M.A. exam is taken or before the M.A. project/thesis is submitted.

#### Exam/Project/Thesis

A comprehensive written exam or project/thesis is required for the degree. Students may earn up to 6 thesis credit hours for an M.A. project/thesis. A comprehensive oral examination is given when the project/thesis is submitted. Students choosing to take the exam will fulfill their 30 credit hours with coursework.

### **Master of Arts Track in Folklore**

#### **Course Requirements**

A minimum of 30 credit hours, including F512, F516, F523, and F525 or F517; three additional approved courses in the department. Students must also select one Ethnomusicology course. Selected in close consultation with advisors, these courses will normally be made from a menu of the following courses: E522, E525, E533, E714, or F740. Another ethnomusicology course may be substituted if 1) it contains sufficient discipline-specific theoretical content and 2) if it is approved by the Director of the Ethnomusicology Institute.

### **Master of Arts Track in Ethnomusicology**

#### **Course Requirements**

A minimum of 30 credit hours including E522, F523, and an ethnomusicology area course, E533, E714, and two other approved courses one of which must be in the Department of Folklore and Ethnomusicology. Students must also select one Folklore course. Selected in close consultation with advisors, these courses will normally be made from a menu of the following courses: F512, F516, F517, and F525. Another folklore course may be substituted if 1) it contains sufficient discipline-specific theoretical content and 2) if it is approved by the Director of the Folklore Institute.

#### **Dual Master's Degrees**

**All Folklore & Ethnomusicology dual degrees require the following:**

#### **Admission Requirements**

Students must be admitted by both programs to pursue the dual degree. Both degrees must be awarded simultaneously.

#### **Foreign Language Requirement**

Reading proficiency in one foreign language. Must be completed before the end of the semester in which the comprehensive exam is taken or before the project/thesis is submitted.

#### **Exam/Project/Thesis**

A comprehensive written exam or a project/thesis is required for the degree. Students may earn up to 6 credit hours for the project/thesis. Students who choose to do the project/thesis, may develop their project/thesis to integrate their Folklore and Ethnomusicology interests and their other dual degree interests, with a committee of two Folklore/ Ethnomusicology faculty and one or more faculty members of the other degree department. An oral defense is held when the project/thesis is complete.

#### **Dual Master of Arts and Master of Library Science Degrees**

Study for these two degrees can be combined for a total of 51 credit hours rather than the 66 credit hours required for

the two degrees taken separately. Students take at least 30 graduate credit hours in library science and at least 21 credit hours in folklore and ethnomusicology.

#### **Folklore and Ethnomusicology Course Requirements**

One of the following: F512, F516, F517, E522, or E533; and either F523 or F525; and five additional approved courses in the department.

#### **Dual Master of Arts and Master of Information Science Degrees**

Study for these two degrees can be combined for a total of 57 credit hours rather than the 66 credit hours required for the two degrees taken separately. Students take at least 30 graduate credit hours in information science, and at least 21 credit hours in folklore and ethnomusicology.

#### **Folklore and Ethnomusicology Course Requirements**

One of the following: F512, F516, F517, E522, or E533; and either F523 or F525; and five additional approved courses in the department.

#### **Dual Master of Arts Degree: Arts Administration and Folklore and Ethnomusicology**

Study for these two degrees can be combined for a total of 60 credit hours rather than the 75 credit hours required for the two degrees taken separately. Students take at least 36 graduate credit hours in arts administration, and at least 24 credit hours in folklore and ethnomusicology.

#### **Folklore and Ethnomusicology Course Requirements**

Two of the following: F512, F516, F517, E522, E533, E714

- Either F523 or F525
- F532
- Either F802 or F803
- Three additional approved courses in the Department.

#### **Doctor of Philosophy Degree in Folklore and Ethnomusicology**

##### **Admission Requirement**

##### **Minors**

At least one minor is required; Students opting for the Ph.D. program with a double major do not need a minor.

##### **Foreign Language Requirement**

Reading proficiency in two foreign languages, or in-depth\* proficiency in one foreign language. Must be completed before qualifying examination is taken. In special cases, and in consultation with the student's advisory committee, a student may submit a written petition to the Director of Graduate Studies to fulfill the language requirement with one foreign language plus one research skill.

\* To demonstrate in-depth proficiency in English, a student must first petition to use English as a foreign language. Once proficiency has been established, then the student must pass a department course numbered 500 or higher that includes a written component with a grade of B (3.0) or better. The course may be in theory, form, or area and it must be taught in English.

##### **Qualifying Examinations**



Written examination in three parts (theory, genre, and area specialties), followed by oral examination.

### Research Proposal

Must be approved by the research committee, a majority of whose members must be faculty of folklore and ethnomusicology.

### Final Examination

Defense of the dissertation.

### Ph.D. Track in Folklore

#### Course Requirements

A total of 90 credit hours, 60 of which must be coursework including F512, F516, F517, F523, F525, and six approved courses. Students must also select one Ethnomusicology course. Selected in close consultation with advisors, these courses will normally be made from a menu of the following courses: E522, E525, E533, E714, or F740. Another ethnomusicology course may be substituted if 1) it contains sufficient discipline-specific theoretical content and 2) if it is approved by the Director of the Ethnomusicology Institute.

### Ph.D. Track in Ethnomusicology

#### Course Requirements

A total of 90 credit hours, 60 of which must be coursework including E522, F523, E533, E714, F740 or F722, and an ethnomusicology area course, and five approved courses, four of which must be in the department. Students must also select one Folklore course. Selected in close consultation with advisors, these courses will normally be made from a menu of the following courses: F512, F516, F517, and F525. Another folklore course may be substituted if 1) it contains sufficient discipline-specific theoretical content and 2) if it is approved by the Director of the Folklore Institute.

### Ph.D. Minor in Ethnomusicology

Doctoral students in other departments may obtain a minor in ethnomusicology by completing 12 credit hours (four graduate ethnomusicology courses). Six credit hours (two graduate ethnomusicology courses) must be from the required courses: E522, F523, E533, E714, or F740. Contact the Director of the Ethnomusicology Institute for approval of courses. Graduate students may pursue a concentration in ethnomusicology at the M.A. and Ph.D. levels; consult the requirements for that department.

### Ph.D. Minor in Folklore

Doctoral students in other departments may obtain a minor in folklore by completing 12 credit hours (four graduate folklore courses). Three credit hours (one graduate folklore course) must be in one of the required courses: F512, F516, F517, F523, or F525. Contact the Director of the Folklore Institute or the minor advisor for approval of courses.

### Grades

A minimum of a B (3.0) is required in each course that is to count toward the minors.

### Ph.D. Internal Minor in Folklore for Students in the Ethnomusicology Track

Students pursuing the Folklore track may earn an internal minor in Ethnomusicology by completing four courses (for a total of 12 hours) that are outside of their major requirements. Students must complete two of the following courses: E522, E533, or E714. All other courses must be approved in advance for the minor by the Ethnomusicology Institute Director. Students should contact the Ethnomusicology Institute Director for further information on this minor.

### Ph.D. Internal Minor in Ethnomusicology for Students in the Folklore Track

Students pursuing the Folklore track may earn an internal minor in Ethnomusicology by completing four courses (for a total of 12 hours) that are outside of their major requirements. Students must complete two of the following courses: E522, E529, E533, or E714. All other courses must be approved in advance for the minor by the Ethnomusicology Institute Director. Students should contact the Ethnomusicology Institute Director for further information on this minor.

### Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Chairperson

Associate Professor David Anthony McDonald\*

#### Director, Folklore Institute

Professor Solimar Otero\*

#### Director, Ethnomusicology Institute

Associate Professor David Anthony McDonald\*

#### Director of Graduate Studies

Professor Pravina Shukla\*

### Graduate Faculty Professors

Ray Cashman\*, Jason Baird Jackson\*, Solimar Otero\*, Daniel Reed\*, Pravina Shukla\*

#### Assistant Professor

Brandon Barker

#### Associate Professors

Rebecca Dirksen\*, Eduardo Herrera, Barbara Hillers, Alisha Lola Jones, Jon Kay, David Anthony McDonald\*

#### Senior Lecturers

Fernando Orejuela

#### Lecturers

Robert Dobler

#### Adjunct Professors

Judah Cohen\* (Music), Stephanie C. Kane\* (International Studies), Anya Peterson Royce\* (Anthropology), Eric Sandweiss\* (History), Susan Seizer\* (Anthropology)



## Adjunct Associate Professors

Tyron Cooper (African American and African Diaspora Studies)\*, Jennifer Goodlander\* (Comparative Literature), Jane E. Goodman\* (Anthropology), M. Cooper Harriss (Religious Studies)\*, Susan Lepselter\* (American Studies), Marvin Sterling\* (Anthropology)

## Faculty Emeritus College Professor

Henry H. Glassie\*

## Distinguished Professor

Richard Bauman\*

## Professors

Mary Ellen Brown\*, Mellonee Burnim\*, Sandra Kay Dolby\*, Hasan M. El-Shamy\*, Diane Goldstein\*, William Hansen\*, Portia K. Maultsby\*, John McDowell\*, Greg Schrempf\*, Beverly J. Stoeltje\* (Anthropology), Ruth Stone\*

## Associate Professor

John W. Johnson\*

## Associate Scholar

Inta Gale Carpenter

## Senior Lecturer

Sue Tuohy

## Courses

- FOLK-E 522 The Study of Ethnomusicology (3 cr.) Introduction to the discipline: history, scope, definitions of ethnomusicology; key issues, points of debate; ethnomusicologists and their work; resources for research, teaching, and other activities in which ethnomusicologists engage. Background for more specialized courses in fieldwork, theory, intellectual history, and world areas. Credit given for only one of FOLK E522 or F522.
- FOLK-E 525 Readings in Ethnography (3 cr.) This graduate seminar is designed to provide the student with a working knowledge of the intellectual history, major theoretical orientations, and analytical techniques that have shaped the practice of ethnographic research. Throughout the semester we will explore how ethnomusicologists have sought to document, analyze, interpret, and present their research.
- FOLK-E 529 Musical Cultures as Systems of Meaning (3 cr.) This course explores a range of ideologies, processes, and patterns that define musical cultures across the globe. Focus on the concept of music as culture by examining historical and contemporary issues in cross-cultural perspective.
- FOLK-E 533 Applied Ethnomusicology (3 cr.) Investigates histories and trajectories of applied ethnomusicology, while preparing students to conceptualize and develop their own work in the sub-field. Will map definitions of applied, advocacy, activist, engaged, and public sector work and trace connections to other disciplines. Discussions focus on research approaches, tools, and methodologies within applied ethnomusicology circles.
- FOLK-E 525 Readings in Ethnography (3 cr.) This graduate seminar is designed to provide the student with a working knowledge of the intellectual history, major theoretical orientations, and analytical techniques that have shaped the practice of ethnographic research. Throughout the semester we will explore how ethnomusicologists have sought to document, analyze, interpret, and present their research.
- FOLK-E 536 Applied Ethnomusicology and Folklore: Media Productions (3 cr.) Examines the application of ethnomusicology and folklore training in media productions for cultural institutions and commercial industries. A focus on the role of humanists as researchers, consultants, music supervisors, and filmmakers for public media institutions (i.e. PBS, BBC, NPR, PRI), multimedia production companies, and commercial film industries.
- FOLK-E 601 Chinese Film and Music (3 cr.) Introduces students to Chinese film, music, and film and music industries. Focus on ethnomusicological approaches to the study of film, methods for reading film music, and learning to read Chinese films and listen to their soundtracks in relation to their representations of Chinese culture.
- FOLK-E 607 Music in African Life (3 cr.) Study of how Africans create, perform, think about, and use music in their lives. Topics include traditional and popular musical styles in relationship to social and historical contexts, as well as translocal, transnational, and global cultural and musical exchanges in which Africans participate. Credit given for only FOLK E607 or F607.
- FOLK-E 608 Music in African Film (3 cr.) Music is an integral part of African films, whether they are made by Hollywood or by African directors. The course will explore how various film musics are conceived and how these musics may be interpreted by audiences, composers, and filmmakers. Credit given for only FOLK E608 or F608.
- FOLK-E 609 Zimbabwean Mbira Performance Ensemble (3 cr.) This course introduces students to Zimbabwean music through a combination of applied music making and lecture/discussions. Students learn to play the Zimbabwean Mbira and various percussion instruments.
- FOLK-E 639 Music & Nationalism in Latin America (3 cr.) Explores relationships between changing concepts of nation and national identity, local, social, and political processes, and artists whose performances and creations have been seen as national symbols. Theories of nationalism, explored through case studies from various periods and nations of Latin America.
- FOLK-E 688 Motown (3 cr.) This course surveys the development of Motown Record Corporation, Detroit Era (1959-1972). Through lecture, discussion, guided listening and visual experiences the course studies the musical works, creative processes,

- business practices, historical events, media, technology, and sociocultural factors that contributed to Motown's identity as a unique artistic and cultural phenomenon.
- FOLK-E 694 Issues in African American Music (3 cr.) A chronological overview of the primary genres of African American music, from slavery to present. Emphasis placed on understanding the separate identities of individual genres, and examining those processes by which they are interrelated and are cultural objects for appropriation. Credit given for only one of FOLK E694, FOLK F694, or AAAD A594.
  - FOLK-E 697 African American Popular Music (3 cr.) An examination of African American popular music from 1945-2000. Organized topically, this course will examine the production of this tradition as a black cultural product and its transformation into a mass marketed commodity for mainstream and global consumption. Credit given for only one of FOLK E697 or AAAD A687.
  - FOLK-E 698 African American Religious Music (3 cr.) Using both a sociocultural and a historical perspective, this course explores the major forms of African American religious music indigenous to the United States (Negro spirituals and gospel music), as well as those Euro-American musical expressions that have emerged as integral parts of the African American worship experience.
  - FOLK-E 699 Theoretical Perspectives in African American Music (3 cr.) A critique of the theoretical perspectives of African American music rendered in seminal publications by scholars of various disciplines employed from the 19th century to the present that have shaped underlying assumptions in narratives on this tradition. Credit given for only one of FOLK E699 or FOLK F725.
  - FOLK-E 714 Paradigms of Ethnomusicology (3 cr.) Examines the current paradigms for conducting ethnomusicological research. Emphasis on theoretical frameworks and specific examples of application within the disciplines. Credit given for only FOLK F714 or E714.
  - FOLK-F 501 Colloquy in Folklore/Ethnomusicology (3 cr.) Introduces students to the content, methodologies, and theoretical perspectives, and intellectual histories of folklore and ethnomusicology.
  - FOLK-F 510 Multimedia in Ethnomusicology (3 cr.) Explores the use of multimedia technology in five basic areas of ethnographic activity: field research, laboratory research (transcription and analysis), preservation, presentation, and publication. Knowledge of technological concepts and skill development in the use of various technologies are pursued through a project-based approach, which emphasizes learning by doing.
  - FOLK-F 512 Survey of Folklore (3 cr.) A survey of selected folklore genres in the verbal, material, musical, kinetic, and conceptual domains, with discussion of significant insights that have arisen, as well as persisting problems that remain, in the focus on genre.
  - FOLK-F 516 Folklore Theory in Practice (3 cr.) An introduction to scholarly practice, developing an integrated idea of folklore as a topic of study and as a way to conduct research.
  - FOLK-F 517 History of Folklore Study (3 cr.) Graduate introduction to conceptual foundations in folklore, such as social base of folklore, tradition, folklore and culture history, folklore as projection, genre, function, structure, text, and context, through a historical survey of approaches to folklore topics.
  - FOLK-F 523 Fieldwork in Folklore/Ethnomusicology (3 cr.) Theories and methods of conducting field research, including research design, methods of data gathering, research ethics, and presentation of research results.
  - FOLK-F 525 Readings in Ethnography (3 cr.) Historical survey of main styles of ethnographic research, with emphasis on three types of theoretical considerations: 1) relationship between ethnographic research and the changing academic, political, cultural, and artistic contexts in which it is situated; 2) ethnographers as individuals whose specific backgrounds and aspirations influence their work; and 3) close attention to the methods employed by specific ethnographers.
  - FOLK-F 527 Folk Poetry and Folksong (3 cr.) Examination of written and performed folk poetry, ritual, political, domestic, or occupational verse, blues, or popular song; scholarly perspectives associated with these forms. May be repeated for credit when topics vary.
  - FOLK-F 528 Advanced Fieldwork (3 cr.) P: F523. While F523 offers a comprehensive survey of the complex and multi-faceted enterprise, this course (F528) chooses one element of the fieldwork and focuses on it as a theme for an entire semester. This course also offers advanced graduate students additional guided experience conducting fieldwork in a workshop-like setting.
  - FOLK-F 532 Public Practice in Folklore and Ethnomusicology (3 cr.) Explores the breadth of professional practice in Folklore and Ethnomusicology outside of college and university settings. Emphasis is placed on the development of conceptual knowledge central to publicly engaged scholarship irrespective of the particular contexts in which scholars might be employed.
  - FOLK-F 533 Applied Folklore (3 cr.) Prepares students to work as mediators between vernacular and institutional discourses and agendas; apply folkloristic skills to social problems solving; trace the history of applied folklore; provide training in cultural mediation, rapid ethnography, needs analysis, other applied skills; survey work of folklorists in important applied areas including law, medicine, education.
  - FOLK-F 535 Ritual and Festival (3 cr.) Traditional rituals and festivals include symbolic forms of communication and a range of performance units: drama, religious expression, music, sports, the clown. Interpretive models permit cross-cultural examination of these phenomena in the United

States, Africa, Latin America, Europe, Asia, etc., though study focuses only on a few events in context.

- FOLK-F 536 Ethnography of Belief (3 cr.) Explores approaches to the ethnography of systems of supernatural belief and will look closely at the resulting descriptions. Belief systems will be considered in terms of their descriptive methodologies, internal logic and methods of acquiring and evaluating evidence, and their means of transmitting explanations.
- FOLK-F 537 Folklore and the Ethnography of Health and Illness (3 cr.) Will investigate the field of folklore and health systems from an ethnographic and phenomenological perspective focusing on cross-cultural issues in health care including: lay health belief, biomedical models; negotiation and trans-cultural health care; systems theory; contrasting definitions of health, illness, reportable symptoms and incapacity; notion of disease processes and etiology.
- FOLK-F 540 Material Culture and Folklife (3 cr.) Material culture presented within the context of folklife, including folk architecture, folk crafts, folk art, traditional foodways, folk museums, folklife research methods, and the history of folklife research. May be repeated for credit when topics vary.
- FOLK-F 545 Folk Narrative (3 cr.) Examination of myths, folktales, legends, jokes, fables, anecdotes, personal narratives, or other forms of folk narrative. Attention given to the content, form, and functions of the narratives as well as the variety of theories and methodologies employed in their study. May be repeated for credit when topics vary.
- FOLK-F 546 Personal Experience Narrative (3 cr.) Examines the form, structure, context, performance and nature of the personal experience narrative and related genres such as life history, memorate, and autobiography. Particular attention will be placed on issues of tellability, narrative entitlement and textual analysis.
- FOLK-F 600 Asian Folklore/Folk Music (3 cr.) Folk religion, material culture, social customs, oral literature, and folk music of Asian societies. Relationship between political movements and the use of folklore scholarship. Transformations of traditions in modern contexts. May be repeated for credit when topics vary.
- FOLK-F 609 African and Afro-American Folklore/Folk Music (3 cr.) Folklore, oral prose and poetry, and music of African societies from the precolonial to the modern national period. The perpetuation of African traditions and the creation of new folklore forms among Afro-Americans in the United States. May be repeated for credit when topics vary.
- FOLK-F 617 Middle East Folklore/Folk Music (3 cr.) Intensive comparative studies of selected genres, including epics, oral narratives, folk drama, ritual and festival, riddles, proverbs, and folk music. Emphasis on analyses of genres in their social and cultural contexts. May be repeated for credit when topics vary.
- FOLK-F 625 North American Folklore/Folk Music (3 cr.) Folk and popular traditions of the United States and Canada. Topics include the social base of American folklore, analytical frameworks for the study of American folklore, prominent genres of American folklore and folk music, national or regional character, and American folk style. May be repeated for credit when topics vary.
- FOLK-F 634 Jewish Folklore and Ethnology (3 cr.) Introduces the history, methods, and issues of ethnographic study among Jewish populations, focusing on the United States and Israel. Through close readings of major works, this class will explore how research in this complex topic has used ethnography to investigate—and negotiate—memory, religious life, politics, ethnicity, and identity.
- FOLK-F 635 European Folklore/Folk Music (3 cr.) Forms of folklore and folk music in Europe; historical and contemporary European scholarship in folklore and ethnomusicology. May be repeated for credit when topics vary.
- FOLK-F 636 Irish Folklore (3 cr.) This course introduces the popular beliefs, customs, material culture, and especially verbal art and oral traditions of Ireland, north and south. Topics include folk religion, supernatural legend and belief, holiday customs, observances surrounding the life cycle and death, historical legend and collective memory, political murals and parades.
- FOLK-F 638 Latin American Folklore/Folk Music (3 cr.) In-depth treatment of traditional expressive forms (musical, verbal, kinetic, festive, etc.) in the various populations of Latin America, with emphasis on the historical evolution of these forms and their contribution to the articulation of contemporary Latin American identities. May be repeated for credit when topics vary.
- FOLK-F 640 Native American Folklore/Folk Music (3 cr.) Comparative examination of various verbal, musical, and dance forms of Native American societies in North and South America. Examination of contributions of folklore and ethnomusicological scholarship to Native American studies. May be repeated for credit when topics vary.
- FOLK-F 651 Pacific Folklore/Folk Music (3 cr.) Folklore, folklife, music, and dance of Australia, New Zealand, and native Oceanic societies. Topics include the cultures of aboriginal and settler populations, retention and adaptation of European traditions, perpetuation and adaptation of aboriginal materials, and the emergence of “native” traditions among the settler and immigrant groups. May be repeated for credit when topics vary.
- FOLK-F 677 Popular Culture and Politics in the Middle East (3 cr.) Through ethnographic case studies this course examines the dynamics of popular culture and mass media in the Middle East, including the Arabic speaking nations, Israel, Turkey, Iran, and North Africa.

- **FOLK-F 712 Body Art: Dress and Adornment (3 cr.)** This seminar analyzes the different ways in which human beings throughout the world shape, dress, ornament, and decorate their bodies, focusing on the meaningful communication of these artistic forms. Class topics will include tattoo, scarification, face painting, makeup, henna, hair, jewelry, and dress—daily attire, costume, folk dress, uniforms.
  - **FOLK-F 713 Food: Art and Identity (3 cr.)** This seminar centers on the topic of food—the production, preparation, and consumption—applying a material culture model to the study of food. While food is an expression of cultural identities, it is also a powerful vehicle for the expression of individual identities, preferences, and aesthetics.
  - **FOLK-F 715 (ENG L715) English and Scottish Popular Ballads (4 cr.)** Students' investigation of principal problems met in ballad scholarship. Special attention to textual relationships, dissemination, and unique qualities of genre.
  - **FOLK-F 722 Colloquium in Theoretical Folklore/Ethnomusicology (3 cr.)** Intensive examination of social scientific theories and an assessment of their relevance to folklore/ethnomusicology scholarship. May be repeated for credit when topics vary.
  - **FOLK-F727 Activism, Engagement, & Critical Ethnography (3 cr.)** This graduate seminar is an in-depth investigation into the field of critical ethnography. We will explore the theoretical, methodological, and applied aspects of qualitative research, seeking a better understanding of how ethnographic approaches may be mobilized for policy change, the creation of emancipatory knowledge, and the pursuit of social justice.
  - **FOLK-F 730 Museums and Material Culture (3 cr.)** This class analyzes the complex relationship between human beings and the material world they inhabit and create to better comprehend the institution of the museum. An understanding of material culture helps us view how makers, users, and viewers relate to objects in homes, commercial establishments and eventually, in museums.
  - **FOLK-F 731 Curatorship (3 cr.)** The course presents basic skills for research and professional practice in social science and humanities museums. In addition to curatorial skills, the course explores how theoretical, ethical, and methodological problems are addressed in day-to-day museum work. Taught in campus museums, the course includes hands-on activities, seminar discussion, and collections research.
  - **FOLK-F 732 Cultural Heritage and Property (3 cr.)** Drawing on methods and theories in folklore studies and allied fields (ethnomusicology, cultural anthropology), this graduate seminar examines cultural heritage and cultural property practices and contests through particular cases considered ethnographically, widespread phenomena viewed comparatively, and key concepts engaged theoretically. Illustrative themes include appropriation, tourism, repatriation, traditional knowledge, and copyright.
  - **FOLK-F 734 Folklore and Literature (3 cr.)** The study of folklore forms and themes as they articulate with literary forms. Emphasis on understanding folklore concepts and theories for literary interpretation, and on the problems posed by literature that contribute to the interpretation of folklore. May be repeated for credit when topics vary.
  - **FOLK-F 736 Folklore and Language (3 cr.)** Linguistic or linguistically informed approaches to speech play and verbal art that are especially relevant to the concerns of folklorists. May be repeated for credit when topics vary.
  - **FOLK-F 738 Psychological Issues in Folklore (3 cr.)** P: Consent of instructor. Major areas addressed: psychological principles in early folklore scholarship; principles of learning applied to traditions; social learning; attitudes: performance and retention; systemic qualities; cybernetics: "material" and "kinetic" culture; folkloric behavior in mental health and morbidity; unrecognized ties to psychological theories; uses of folklore to educators and psychologists.
  - **FOLK-F 740 History of Ideas in Folklore/Ethnomusicology (3 cr.)** Examination of the intellectual history of folklore and ethnomusicology, emphasizing the social, political, and ideological forces that have influenced the development of the field. Required for M.A. and Ph.D. students. May be repeated for credit when topics vary.
  - **FOLK-F 750 Performance Studies (3 cr.)** Examination of performance-centered theory and analysis in folklore, ethnomusicology, and adjacent fields. May be repeated for credit when topics vary.
  - **FOLK-F 755 Folklore, Culture, and Society (3 cr.)** Relationship of folklore, culture, and social organization. Beliefs, values, and social relations in the folklore of various societies. Special topics include gender, children, and ethnicity. May be repeated for credit when topics vary.
  - **FOLK-F 792 Traditional Musical Instruments (3 cr.)** Classification, distribution, and diffusion of folk and traditional musical instruments. Construction and performance practices. Relation to cultural and physical environment. Demonstration with instruments in the collection of the university museum.
  - **FOLK-F 794 Transcription and Analysis in Folklore/Ethnomusicology (3 cr.)** P: Consent of instructor. Problems in transcription, analysis, and classification of music sound and texts. Required of M.A. and Ph.D. students in ethnomusicology. May be repeated for credit.
- Special Function Courses**
- **FOLK-OS 500 Undistributed Overseas Study (arr. cr.)**
  - **FOLK-G 599 Thesis Research (arr. cr.)** This course is eligible for a deferred grade.

- FOLK-F 800 Research in Folklore (arr.-9 cr.) This course is eligible for a deferred grade.
- FOLK-F 801 Teaching Folklore (0-3 cr.) Prepares graduate students to teach in Folklore and Ethnomusicology; includes practical instruction in teaching methods, lesson preparation, teaching observations, course design, teaching portfolio preparation, and discussion of folklore and ethnomusicology in college curriculum. Required of all first time Instructors and Associate Instructors.
- FOLK-F 802 Traditional Arts Indiana (1-3 cr.) Designed as a practicum for students to work collaboratively in applying the methods and approaches of folklore studies to public needs and public programs. Students will engage in a variety of outreach projects linking the university to the larger community in the areas of public arts and culture and cultural documentation. May be repeated once for credit.
- FOLK-F 803 Practicum in Folklore/Ethnomusicology (1-6 cr.) P: Consent of instructor. Individualized, supervised work in publicly oriented programs in folklore or ethnomusicology, such as public arts agencies, museums, historical commissions, and archives. Relevant readings and written report required. May be repeated.
- FOLK-F 804 Special Topics in Folklore/Ethnomusicology (3-6 cr.) Topics will be selected in areas of folklore or ethnomusicology not covered in depth in existing courses. May be repeated for credit (6 cr. max.) when topics vary.
- FOLK-F 805 Laboratory in Public Folklore (3 cr.) Covers the research, design, creation, presentation, and assessment of public folklore projects. The learning laboratory provides students with experience in the public sector and critical perspectives on the theories, methods, and models employed in this field. The course includes weekly meetings to review readings and resources and discuss project progress.
- FOLK-F 806 Museum Practicum in Folklore (1-6 cr.) Folklore-oriented practicum at a campus or community-based museum or systematic research collection. Participatory activities will be supplemented by reading and writing activities. May be repeated for up to 6 credit hours.
- FOLK-F 840 Research Seminar (3 cr.) Prepares students for their dissertation research by examining the research process and requiring from them a short draft and an expanded draft of a research proposal. This course is strongly recommended for students in the Ph.D. program. May be repeated once for credit.
- FOLK-F 850 Thesis (arr. cr.) This course is eligible for a deferred grade.
- FOLK-G 901 Advanced Research (6 cr.) This course is eligible for a deferred grade.

### Music Courses

- FOLK-M 596 Art Music of Black Composers (3 cr.)

- FOLK-T 561 Music Theory (3 cr.) (Topic: Art Musics of Asia; Art Music of India)

## French and Italian

### College of Arts and Sciences

Departmental E-mail: [fritdept@indiana.edu](mailto:fritdept@indiana.edu)

Departmental URL: <http://frit.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Arts (French/Francophone Studies, French Linguistics, French Instruction, Italian), and Doctor of Philosophy (French/Francophone Studies, French Linguistics, Italian)

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

All Associate Instructors in French are required to take F572 and F573; all Associate Instructors in Italian are required to take M572 and M573.

#### Admission Requirements for All Programs

1. Undergraduate major in French or Italian, depending on intended focus, or its equivalent
2. Test of English as a Foreign Language (TOEFL): Non-native English speakers only
3. Three letters of recommendation
4. Statement of purpose in English and target language
5. Official transcripts and certified English translations
6. CV
7. Writing sample

For further details and program-specific requirements, please check the Web site ( <https://frit.indiana.edu/graduate/how-to-apply.html>) or contact the Graduate Student Services Coordinator in the department.

#### Degrees in French

#### Master of Arts Degree—French Instruction Course Requirements

A total of 30 credit hours, at least 21 credit hours of which must be in the French program (FRIT-F courses), including F572, F573, and F580. Additional work must include at least one course in French Linguistics and one course in pedagogy/language acquisition, as well as two courses in French/Francophone Studies.

#### Language Proficiency Requirement

There is no language requirement other than proficiency in French. At the end of the first year of graduate study, students must arrange for an ACTFL OPI and send results to FRIT. A score equivalent to "Advanced High" on the ACTFL/ETS scale (2+ on the ILR scale) is required. Should a student fail to attain a score of "Advanced high," specific remedial course work may be required.

#### Final Examination



Written examinations in the following two areas (one essay written in French): applied French linguistics and foreign language methodology/second language acquisition. Oral examination in one of the following two areas of the student's choice: Francophone civilization or Francophone literature.

Master of Arts Degree—French/Francophone Studies

### Course Requirements

A total of 30 credit hours, at least 23 credit hours of which must be in the French program (FRIT-F courses).

### Final Project

Evaluation of accumulated dossier of graduate-level term papers by the French/Francophone Studies faculty. Dossier must be prefaced by 4-5 page rationale written by the student (in French for native English speakers; in English for native French speakers; all other cases must be approved by the DGS).

### Master of Arts Degree—French Linguistics Course Requirements

A total of 30 credit hours, of which 20 must be in the French program (FRIT-F courses), including F576, F577, F579, F580, F582 and F603, as well as one of the following three courses: F574, F578, F581.

### Language Requirement

Reading proficiency in a language selected from the following list: a modern Romance language other than French (Haitian Creole may count), a regional/minority language of France, German, Russian, Latin, or Classical Greek.

### Final Examination

Two written exams: one chosen from Group A and one from Group B. Group A: applied French linguistics, history of the French language, and pedagogy/language acquisition. Group B: phonology, syntax. To be admitted to the Ph.D. program, students must select from the first two areas in Group A (that is, either applied French linguistics or history of the French language). Students desiring admission to the Ph.D. program must submit a research statement on the day of the written exams and participate in an oral Ph.D. admission interview.

### Doctor of Philosophy Degree—French/Francophone Studies

#### Admission Requirements

Successful completion of the curriculum and final evaluation constituting the department's M.A. program in French/Francophone Studies. Students with an M.A. from another institution will first be admitted to the M.A. program, but their work will be submitted for a faculty review at the end of the second semester to be considered for admission to the Ph.D. program.

#### Course Requirements

A total of 90 credit hours: 65 credit hours of course work plus 25 thesis (F875), elective, or other graduate credit hours selected in consultation with the student's Director of Graduate Studies. F564 and F603 or their equivalents are required. At least one course taken for graduate credit in each of the six literary periods: Medieval; 16th

century; 17th century; 18th century; 19th century; 20th and 21st century literature, media and culture. Thematic and transhistorical courses count for the literary period determined in consultation with the professor, usually based on final paper topic.

### Language Requirement

Reading proficiency in one outside language such as German, Latin, Catalan, Classical Greek, Italian, Russian, Portuguese, Spanish or another language germane to the student's field of research, with the approval of the DGS and the PhD dissertation advisor.

### Minor(s)

One Ph.D. minor in an outside field is required according to the minor program's or department's requirements (generally 12-16 credit hours). Examination on the minor subject is at the discretion of the minor department.

### Qualifying Examination

Oral and written exams covering six literary periods (Middle Ages, sixteenth, seventeenth, eighteenth, nineteenth, and twentieth/twenty-first centuries) or five literary periods and literary/media theory. Students may choose to be exempted from written exams on two of the six literary periods, provided they have achieved a grade of B or higher in two courses from each of these areas. Students must develop a customized reading list in their intended area (literary period) of specialization; the list can cover up to two periods.

### Doctor of Philosophy Degree—French Linguistics Admission Requirements

Students admitted into the M.A. program who wish to continue their studies at the doctoral level must successfully complete the curriculum and final examination constituting the department's M.A. program in French linguistics; they must also submit a research statement and successfully complete the Ph.D. admission interview. Students admitted directly into the Ph.D. program must submit a research statement and sit for an oral interview at the beginning of their second year in the program.

### Course Requirements

A total of 90 credit hours: 65 credit hours of course work plus 25 thesis (F875), elective, or other graduate credit hours selected in consultation with the student's Director of Graduate Studies. Students must complete at least four 600-level courses in French Linguistics excluding F603. If an insufficient number of 600-level courses are offered for the student to move ahead in the program, courses in Linguistics or in Second Language Studies may be substituted with permission of the DGS.

### Language Requirement

Reading proficiency in two languages as follows: (1) German or Latin, and (2) a Romance language other than French, a regional/minority language of France, or Haitian Creole. (Note that Picard and Occitan ARE regional/minority languages of France.) The language selected for the M.A. may count toward the Ph.D. requirement. For specialists in the history of French, we highly recommend

the study of both German and Latin (in addition to the Romance language).

### Minor(s)

Twelve (12) credit hours of course work required in (1) general linguistics, excluding LING-L 503, or (2) second language studies. Other minors are possible with the permission of the Director of Graduate Studies.

### Qualifying Examination

Students will take two cloistered General Exams, three hours each in length, and one Research Exam, to be completed over a period of one week with access to research materials. For the General Exams the students can select one area from Group A and one area from Group B; Group A: Lexicology/Lexicography, Language Contact, History of French, Sociolinguistics and Dialectology. Group B: Phonology, Morphology, Syntax, Second Language Acquisition. Selection of the examination areas will be made in consultation with the student's advisory committee.

The Research Exam is designed to demonstrate that students have developed sufficient depth in a particular constellation of research questions and that they are ready to begin work on their dissertations. The area of this exam corresponds to the area of the student's projected dissertation topic and will be distinct from those of the two general exams. The particular question to be addressed, which will reflect the student's research interests, will be assigned at the beginning of the one-week period during which students write the exam. The Research Exam must be written in English.

The exams will normally be taken during the second semester of the fourth year of study. The General Exams (cloistered) may be taken in January or September; the Research Exam requirement must be satisfied during the same semester as the General Exams. Examination on the minor subject is at the discretion of the minor department.

### Degrees in Italian

#### Master of Arts Degree in Italian Course Requirements

A total of 30 credit hours, of which 20 must be in Italian.

### Final Examination

Written exam based on reading list covering all periods of Italian literature. Exam must be taken no later than the fourth semester if the student intends to seek admission to the Ph.D. program. With advanced arrangement, a pedagogical project may be accepted in lieu of the written examination for students completing a terminal M.A. degree.

#### Doctor of Philosophy Degree in Italian Admission Requirement

Successful completion of the department's M.A. program in Italian or the equivalent. For further details, contact the Graduate Student Services Coordinator in the department.

### Course Requirements

A total of 90 credit hours. 65 credit hours of course work plus 25 thesis (F875), elective, or other graduate credit

hours selected in consultation with the student's Director of Graduate Studies .

### Language Requirement

Reading proficiency in one of the following: French, German, Classical Greek, Latin, Spanish or Portuguese. Another language may be substituted with permission of the DGS and the Ph.D. dissertation advisor.

### Minor(s)

One Ph.D. minor in an outside field is required according to the minor program's or department's requirements (generally 12-16 credit hours). Examination on the minor subject is at the discretion of the minor department.

### Qualifying Examination

The qualifying exam consists of (1) an in-depth written exam covering all periods of Italian literature and culture, including film; and (2) the submission of a dissertation project.

Students must take the written exam no later than their fourth semester in the Ph.D. program. This is a two-day exam given on the first Friday and Saturday of each semester, 5 hours each day. Day one will cover the Middle Ages, the Renaissance, and the Baroque. Day two will cover the eighteenth century to the present including cinema.

The second part of the Ph.D. exam consists of the submission of a preliminary description of a dissertation project of approximately 20 to 25 pages of length (including a select bibliography). Students must submit their dissertation project as soon as possible after having passed the first part of their Ph.D. exam, and no later than the following exam session.

### Ph.D. Minors

#### Ph.D. Minor in French/Francophone Studies

Doctoral students from other departments may complete a minor in French/Francophone Studies by successfully completing no fewer than four French/Francophone literature or culture courses (12 credit hours) listed in the University Graduate School Bulletin as carrying credit toward the Ph.D., of which no more than one may be at the 400 level. In all cases, selection of the particular courses to be counted must be made in consultation with the Director of Graduate Studies in French/Francophone Studies.

#### Ph.D. Minor in French Linguistics

Doctoral students from other departments may complete a minor in French linguistics by successfully completing no fewer than four French linguistics courses (12 credit hours) at the 500 level or above. Doctoral students in French/Francophone Studies may complete a minor in French linguistics by successfully completing no fewer than three French linguistics courses (9 credit hours, 500-level courses or above) in addition to F603, for a total of 4 courses. In all cases, selection of the particular courses to be counted must be made in consultation with the Director of Graduate Studies in French Linguistics.

#### Ph.D. Minor in Italian

Doctoral students from other departments may complete a minor in Italian by successfully completing no fewer than four Italian courses (12 credit hours) listed in this bulletin

as carrying graduate credit. Selection of the particular courses to be counted must be made in consultation with the Director of Graduate Studies in Italian.

## Faculty

### Chairperson

Professor Oana Panaïté\*

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Rudy Professors

Rosemary Lloyd\* (Emerita), Albert Valdman\* (Emeritus, Linguistics)

### Provost Professor

Andrea Ciccarelli\*

### Ruth N. Halls Professor

Oana Panaïté\*

### Professors

Guillaume Ansart\*, Marco Arnaudo\*, Richard Carr\* (Emeritus), Gilbert Chaitin\* (Emeritus, Comparative Literature), Laurent Pierre Dekydtspotter\* (Second Language Studies), Eileen Julien\* (Emerita), , Eric M. MacPhail\*, Jacques Emile Merceron\* (Emeritus), Emanuel J. Mickel\* (Emeritus), Colleen Ryan\*, Massimo Scalabrini\*, H. Wayne Storey\* (Emeritus), Nicolas Valazza\*, Antonio Vitti\* (Emeritus)

### Associate Professors

Hall Bjørnstad\*, Vincent Bouchard\*, Brett Bowles\*, Alison Calhoun\*, Margaret E. Gray\*, Russell Pfohl\* (Emeritus), Kevin Rottet\*, Barbara S. Vance\* (Linguistics)

### Assistant Professors

Elizabeth Hebbard\*, Jeffrey Lamontagne

### Senior Lecturers

Kelly Sax, Karolina Serafin

### Directors of Graduate Studies

Associate Professor Kevin Rottet\* (French Linguistics), Global & International Studies 3161, (812) 855-6164

Associate Professor Alison Calhoun\* (French/ Francophone Studies), Global & International Studies 3159, (812) 856-6731

Professor Marco Arnaudo\* (Italian), Global & International Studies 3166, (812) 855-7812

## Courses

### Graduate

- GRAD-G 611 Romance Linguistics I (3 cr.)
- GRAD-G 901 Advanced Research (6 cr.)

## French

- FRIT-F 401 Structure & Devel of French (3 cr.)P: F313 or F314 or consent of instructor.
- FRIT-F 410 French Literature of the Middle Ages (3 cr.)Not open to M.A. or Ph.D. candidates in French.
- FRIT-F 413 French Renaissance (3 cr.)
- FRIT-F 423 Seventeenth-Century French Literature (3 cr.)
- FRIT-F 424 Ideas and Culture in Seventeenth-Century France (3 cr.)
- FRIT-F 435 Enlightenment Narrative (3 cr.)
- FRIT-F 436 Voltaire, Diderot, and Rousseau (3 cr.)
- FRIT-F 443 NineteenthCentury Novel (3 cr.)
- FRIT-F 445 Nineteenth-Century Drama (3 cr.)
- FRIT-F 446 NineteenthCentury Poetry (3 cr.)
- FRIT-F 450 Culture and Society in French Studies (3 cr.)
- FRIT-F 461 La France contemporaine: Cinema et Culture (3 cr.)
- FRIT-F 463 Civilisation française I (3 cr.)
- FRIT-F 474 Thème et version (2 cr.)
- FRIT-F 475 Le Français Oral: Cours Avancé (2 cr.)
- FRIT-F 501 Medieval French Literature I (3 cr.)Introductory survey; all texts read in original language; no previous knowledge of Old French required.
- FRIT-F 502 Medieval French Literature II (3 cr.)P: F501 or equivalent. Second part of introductory survey; all texts read in original language.
- FRIT-F 503 Reading Old French (1 cr.)P: F501 or equivalent. Oral translation of Old French texts and elucidation of textual and grammatical difficulties. May be repeated twice for credit.
- FRIT-F 505 Middle French Literature (3 cr.)Representative works of fourteenth and fifteenth centuries; each semester focuses on a particular writer or genre.
- FRIT-F 507 Foreign Language Institute (1-6 cr.)
- FRIT-F 510 Foreign Study in French (2-8 cr.)Formal study in a French university; language, literature, and culture of France. Credit to apply only to the M.A. in French Instruction degree. Program must be approved by department.
- FRIT-F 513 French Renaissance Prose (3 cr.)Prose works from sixteenth-century France including letters, essays, novels, short stories, Bible translations, travel accounts, political treatises, and philosophical dialogues by authors famous and obscure, humorous and solemn, terse and prolix. Also includes review of lexical and grammatical peculiarities of sixteenth-century French and typographic conventions of Renaissance printed books.
- FRIT-F 514 French Renaissance Poetry (3 cr.)French lyric poetry of the sixteenth century from the Rhétoriqueurs to Agrippa d'Aubigné. Late medieval fixed forms and the chanson, sonnet, ode, and metrical experiment of *vers mesurés*. Formal analysis and situation of texts in their intellectual and

historical contexts. Study of poetic manifestos of the Pléiade and their rivals.

- **FRIT-F 520 Advanced French Phonetics (3 cr.)** General introduction to French phonetics and phonemics; training in the evaluation of pronunciation accuracy and the teaching of French pronunciation at the secondary school and university levels; remedial practice.
- **FRIT-F 523 French Seventeenth-Century Literature and Culture (3 cr.)** Questions concerning seventeenth-century France as treated in literature, philosophy, moralist teachings, science, and *les beaux arts*.
- **FRIT-F 535 Le XVIII<sup>e</sup>siècle: l'Essai (3 cr.)** Introduction to one of the two major genres of the Enlightenment, broadly defined and exemplified by writers like Montesquieu, Voltaire, Diderot, and Rousseau.
- **FRIT-F 536 Le Roman au XVIII<sup>e</sup>siècle (3 cr.)** Introduction to the study of the French novel in the eighteenth century with special emphasis on three major genres of the period: the memoir-novel, the epistolary novel, and the philosophical novel.
- **FRIT-F 540 Poésie et poétique au 19<sup>e</sup>siècle (3 cr.)** Study of French poetry which may include Romantic, Parnassian, Decadent and Symbolist poets, as well as 19th-century poetic manifestos.
- **FRIT-F 545 Romans et autres recits du 19<sup>e</sup>siècle (3 cr.)** Study of various forms of narrative (realist, fantastical, psychological, historical, decadent, etc.) in 19th century French literature.
- **FRIT-F 548 L' Histoire, le drame et l'esthétique au 19<sup>e</sup>siècle (3 cr.)** Study of the interrelations between history, theater and aesthetics in France in the 19th century.
- **FRIT-F 552 La Poésie au XX<sup>e</sup>siècle I (3 cr.)** Panorama: poets such as Cendrars, Apollinaire, Valéry, Claudel, les surréalistes, Saint-John Perse, Ponge, Michaux.
- **FRIT-F 553 La Poésie au XX<sup>e</sup>siècle II (3 cr.)** Concentration on one or several authors; a school, e.g., surrealism; certain formal aspects.
- **FRIT-F 556 Le Roman aux XX<sup>e</sup>et XX<sup>e</sup> siècles (3 cr.)** Representative French-language novelists such as Proust, Gide, Colette, Céline, Bernanos, Sartre, Sarraute, Simon, Le Clézio, Labou Tansi, Djébar, Chamoiseau, Échenoz, etc., and aesthetic movements which influenced fiction-writing such as Existentialism, Négritude, *le Nouveau Roman*, Créolité, etc.
- **FRIT-F 559 Théâtre/Essai au XX<sup>e</sup>et XXI<sup>e</sup> siècles (3 cr.)** Course focuses on one or both of the two genres. Individual playwrights such as Jarry, Cocteau, Apollinaire, Claudel, Novarina, and groups such as surrealism, the theatre of the absurd, postcolonial and contemporary theater: Beckett, Artaud, Césaire, Labou Tansi, and others. Important essayists such as Bergson, Sartre, Fanon, Bataille, Derrida, Cixous, etc.
- **FRIT-F 561 Studies in French Civilization (3 cr.)** Content varies. May include historical survey of the development of French civilization since the revolution, taking into consideration sociopolitical history, history of ideas, fine arts, literature. Field of study may be extended to the French-speaking world. May be repeated twice for credit with a different topic.
- **FRIT-F 563 Introduction to Graduate Study and Research (1 cr.)** S/F grading
- **FRIT-F 564 Issues in Literary Theory (3 cr.)** Important issues and methods of literary study, such as catharsis, genre, meaning, periodization, representation, rhetoric, and *vraisemblance*, studied in an historical perspective.
- **FRIT-F 565 Introduction to French Linguistics (3 cr.)** Introduction to the structure of the French language: phonology, morphology, and syntax.
- **FRIT-F 572 Practicum in College French Teaching (1 cr.)** Focused classroom observations followed by discussions; identification and evaluation of teaching techniques. Required of new Associate Instructors; offered only in fall semester.
- **FRIT-F 573 Methods of College French Teaching (3 cr.)** Theoretical notions underlying current approaches; testing; evaluation of teacher performance and instructional materials. Required of all Associate Instructors; offered only in spring semester.
- **FRIT-F 574 Thème et version: cours avancé (3 cr.)** Translation of contemporary texts from English into French, occasionally from French into English. Emphasis on problems of literary styles.
- **FRIT-F 576 Introduction to French Phonology (3 cr.)** Study of French phonology and the phonology/morphology interface within the framework of recent linguistic models, including solutions to major descriptive problems proposed from the early twentieth century to the present.
- **FRIT-F 577 Introduction to French Syntax (3 cr.)** Study of French syntax and the syntax/ semantics interface within the framework of recent linguistic models.
- **FRIT-F 578 Contrastive Study of French and English (3 cr.)** Advanced contrastive study of written French and English, with emphasis on problems of interference. Readings, exercises.
- **FRIT-F 579 Introduction to French Morphology (3 cr.)** Introduction to word formation in French, including inflection, derivation, and compounding.
- **FRIT-F 580 Applied French Linguistics (3 cr.)** Consideration of issues in the structure of French from a pedagogical perspective, with a particular focus on variation along social and geographical lines. Critical examination of the concept of the native speaker in applied linguistics and of the literature on immersion education.
- **FRIT-F 581 Structure of a Regional Language of France (3 cr.)** Study of the structure of a regional language of France, including its phonology, morphology, syntax, and lexicon. Students will learn to read the language fairly fluently and have a chance to research one aspect of its structure. May be repeated for up to 6 credit hours with a different topic.
- **FRIT-F 582 Introduction to French Semantics (3 cr.)** Introduction to issues in the interpretation of French. Focusing on the interpretation of various constructions of French, the course investigates semantic representations in the verbal and nominal

domains. The goal is to comprehend how speakers of French develop these precise semantic intuitions.

- **FRIT-F 584 Stylistics and Semantics (3 cr.)** Relations between types of interpretation and stylistic factors. Ludic-esthetic (including literary) uses of words versus cognitive-moral uses. Emphasis on the former; genre divisions; analysis of texts focused on basic problems of interpretive decision.
- **FRIT-F 603 History of the French Language I (3 cr.)** Overview of the subject including consideration of all aspects; concentration on internal development (phonology, morphology, syntax) from Latin to modern French. Knowledge of Latin useful.
- **FRIT-F 604 History of the French Language II (3 cr.)** P: F603 or equivalent. Intensive study of selected aspects of the internal evolution of French. Knowledge of Latin useful.
- **FRIT-F 605 History of French Prose Style (3 cr.)** Philological and literary study of major figures and trends in prose style from the late Middle Ages to the present. Ciceronianism, *style coupé*, oratorical styles, *écriture artiste*, etc.
- **FRIT-F 606 Capstone Project in French Teaching (3 cr.)** Designed to be taken during the final semester of the MAT program to complete the student's academic training and further their professional development. Students work with a faculty advisor on an extended research essay or a classroom project consisting of a pedagogical portfolio relevant to their work as teachers.
- **FRIT-F 615 Studies in Medieval French Literature (3 cr.)** Intensive study of one writer, work, theme, or genre, such as Chrétien de Troyes, the *Roman de la rose*, lyric poetry. May be repeated twice for credit with a different topic.
- **FRIT-F 620 Studies in Sixteenth-Century French Literature (3 cr.)** Intensive study of one writer, genre, or aspect of the century, such as Rabelais, Montaigne, poetry, humanism. May be repeated twice for credit with a different topic.
- **FRIT-F 630 Studies in Seventeenth-Century French Literature (3 cr.)** Intensive study of one writer, work, or theme, such as Racine, Corneille, Madame de Lafayette, Baroque poetry. May be repeated twice for credit with a different topic.
- **FRIT-F 632 Seventeenth-Century Drama & Performance (3 cr.)** Intensive study of one dramatist, genre, or theme such as Molière, tragedy, or theater and the other arts. May be taken twice for credit with different topics.
- **FRIT-F 635 Studies in Eighteenth-Century French Literature (3 cr.)** Intensive study of one theme, genre, or author, such as cultural otherness, theater, Diderot, Rousseau. May be repeated twice for credit with a different topic.
- **FRIT-F 640 Studies in Nineteenth-Century French Literature (3 cr.)** Topics vary. May include fantasy and ideology in nineteenth-century narrative; Hugo, Zola and the *roman politique*; jealousy and narrative; experiments in verse; symbolism and its roots; painting and literature; decadence and aesthetics; women writers and critics.
- **FRIT-F 647 Contemporary French Theory and Criticism (3 cr.)** P: F564. Recent movements and concepts in French theory influential in determining current practice in literary study. Structuralism, psychoanalysis, neo-Marxism, intertextuality, deconstruction.
- **FRIT-F 650 Études de littérature contemporaine (3 cr.)** Intensive study of one writer, work, or theme, such as Céline, literary manifestos, Proust, colonialism, or existentialism. May be repeated twice for credit with a different topic.
- **FRIT-F 651 Studies in French Cinema (3 cr.)** Case studies in French and/or Francophone film, organized according to theme, genre, style, chronological period, or director. May be taken twice for credit with a different topic.
- **FRIT-F 652 Séminaire sur l'intermédialité (3 cr.)** Study of different theories of "intermediality," the necessary mediation between human beings and their world, through a large variety of examples (belonging to a large time frame of the Francophone World). May be repeated for a maximum of 6 credit hours with a different topic.
- **FRIT-F 667 Studies in Francophone Literature (3 cr.)** Intensive study of one writer, work, genre, or theme in French language literature produced outside of France or by immigrant writers in France. Examples of topics are Aimé Césaire, Senegalese film, post-colonial theory, créolité. May be repeated twice for credit with different topics.
- **FRIT-F 670 Advanced French Phonology (3 cr.)** Advanced phonological analysis of issues in French phonology, emphasizing recently proposed linguistic models.
- **FRIT-F 671 Advanced French Syntax (3 cr.)** Advanced syntactic and semantic description of French, emphasizing recently proposed linguistic models.
- **FRIT-F 672 French Dialectology (3 cr.)** Geographical and social variation in French; traditional and modern dialectology, oil dialects and North American varieties of French, languages in contact, norm(s), variationist studies.
- **FRIT-F 673 Topics in the Learning and Teaching of French (3 cr.)** P: F580 or equivalent. Survey of major issues in the learning and teaching of French and discussion of how these issues and research results bear on approaches to second-language teaching. Designed for prospective teachers of French and students interested in second-language acquisition and classroom research.
- **FRIT-F 674 Advanced Practicum in Teacher Training (1 cr.)** Advanced graduate students develop teacher training skills by working with first-year Associate Instructors on lesson plans, activities, and evaluation methods for teaching French language.
- **FRIT-F 675 Studies in French Linguistics (3 cr.)** Content varies. May include general or intensive study in syntax, semantics, lexicography, or other linguistic topics. May be repeated twice for credit with a different topic.
- **FRIT-F 676 Structure and Sociolinguistic Aspects of Haitian Creole and Haitian French (3 cr.)** Description of the phonological, morphosyntactic, and lexical structure of Haitian Creole and comparison with Haitian French. Review of the linguistic situation of Haiti, including the



respective functions of Creole and French and attitudes and values associated with each language.

- **FRIT-F 677 French Lexicology and Lexicography (3 cr.)**P: F580 or equivalent. Study of the structure of the French lexicon. Examination of the process of dictionary compilation and evaluation. Hands-on experience in the use of computer technology for lexicographic and lexicological tasks such as the compilation of databases, use of the optic scanner, and automatic text analysis.
- **FRIT-F 678 Advanced French Morphology (3 cr.)**P: F579 or permission of instructor. Advanced study of the word structure in French from a variety of theoretical perspectives.
- **FRIT-F 679 French-Based Pidgins and Creoles (3 cr.)**Study of the contact languages known as pidgins and creoles, focusing on those which are French-based. Topics include an overview of the history of the field; how the terms pidgin and creole are defined and used; theories of origin; the sociohistorical setting of creolization; stages of development; key linguistic structures.
- **FRIT-F 680 Language Contact (3 cr.)**Examines the various linguistic and social phenomena arising when two or more languages are in (prolonged or intense) contact, including borrowing and grammatical replication; codeswitching; language maintenance, shift and death; pidginization and creolization; language intertwining and mixed languages, sprachbunds and convergence; and koineization.
- **FRIT-F 810 Individual Readings in French and Francophone Civilization (1-6 cr.)**
- **FRIT-F 815 Individual Readings in French Literature and Linguistics (1-6 cr.)**
- **FRIT-F 825 Seminar in French and Francophone Studies (3 cr.)**Intensive cross-historical and/or cross-disciplinary study of a topic in French and Francophone literature, cinema, media, or culture. May be repeated for a maximum of 9 credit hours with a different topic.
- **FRIT-F 875 Research in French Literature and Language (1-12 cr.)**

### Italian

- **FRIT-M 500 Seminar in Italian Cinema (3 cr.)**Intensive study of one director, genre, or period in Italian cinema. May be repeated twice for credit when topics vary.
- **FRIT-M 501 Dante (3-4 cr.)** Introduction to the works and times of Dante, include *the Divine Comedy*.
- **FRIT-M 503 Medieval Italian Literature & Culture (3-4 cr.)**Class may be taught as a survey course or may focus on any author, period, genre, or cultural theme from the "Scuola Siciliana" to Petrarch. May be repeated once for a maximum of 8 credit hours with a different topic.
- **FRIT-M 504 Renaissance Italian Literature & Culture (3-4 cr.)**Class may be taught as a survey course or may focus on any author, period, genre, or cultural theme from Petrarch to the late 1600s. May be repeated once for a maximum of 8 credit hours with a different topic.

- **FRIT-M 505 Modern Italian Literature & Culture (3-4 cr.)**Class may be taught as a survey course or may focus on any author, period, genre, or cultural theme from the Enlightenment to Modernism. May be repeated twice for a maximum of 12 credit hours with different topics.
- **FRIT-M 550 Seminar in Italian Poetry (3-4 cr.)**Class may focus on any aspect of Italian lyric tradition from the origins to the present.
- **FRIT-M 553 The Italian Novel (3-4 cr.)**Survey course on the major Italian novelists from the 1600s to the present time. Class may also function as a seminar focusing on specific issues of the novelistic genre in Italy.
- **FRIT-M 554 Modern Italian Theater (3-4 cr.)**Class may be taught as a survey course on Italian theater from Goldoni to the present time, or may focus on specific authors or periods of modernity.
- **FRIT-M 564 Twentieth Century Poetry (3 cr.)**Major developments in contemporary Italian poetry.
- **FRIT-M 565 Readings in the Italian Cinema (3 cr.)**Analysis of specific movements, topics, or directions in Italian cinema. Attendance of film showings required. Subject may vary with each listing and is identified in the Schedule of Classes. May be repeated once for credit.
- **FRIT-M 572 Italian Teaching Practicum (1 cr.)**Instructors of Italian develop, practice, and evaluate the effectiveness of pedagogical approaches and materials. They create and discuss a variety of assessments for evaluating language skills and cultural knowledge. May be repeated once for credit.
- **FRIT-M 573 Methods of Italian Language Teaching (3 cr.)**Examines current trends, issues, and practices in foreign language teaching with a focus on Italian. Students engage with scholarly articles to explore and evaluate classroom methods. Includes the study of critical thinking, multiple intelligences, teaching literature, an introduction to applied linguistics, teaching as performance, and professional development for Italian teachers.
- **FRIT-M 600 Studies in Italian Film (3 cr.)**Intensive study of one director, genre, theme, or period in Italian film. May also include study of film theory. May be repeated for credit with consent of graduate advisor, for a maximum total of 6 credit hours.
- **FRIT-M 603 Seminar in Medieval Italian Literature (3-4 cr.)**Intensive study of one writer, work, theme, or genre in the medieval period. May be repeated for credit with consent of the graduate advisor.
- **FRIT-M 604 Seminar in Renaissance Italian Literature (3-4 cr.)**Intensive study of one writer, work, theme, or genre of the Renaissance. May be repeated for credit with consent of the graduate advisor.
- **FRIT-M 605 Seminar in Modern Italian Literature (3-4 cr.)**Intensive study of one writer, work, theme, or genre in the modern era. May be repeated for credit with consent of the graduate advisor.
- **FRIT-M 815 Individual Readings in Italian Literature (1-6 cr.)**
- **FRIT-M 825 Seminar in Italian Literature & Culture (3-4 cr.)**Course content varies; may include a literary theme, major author, literary movement,

cinema, or cultural topic. May be repeated for credit with permission of the graduate advisor.

- **FRIT-M 875 Research in Italian Literature (1-12 cr.)**

### Courses for Graduate Reading Knowledge

- **FRIT-F 491 Elementary French for Graduate Students (3-no grad. cr.)**
- **FRIT-F 492 Readings in French for Graduate Students (3-no grad. cr.)**
- **FRIT-M 491 Elementary Italian for Graduate Students (3-no grad. cr.)**
- **FRIT-M 492 Readings in Italian for Graduate Students (3-no grad. cr.)**

## Gender Studies

### College of Arts and Sciences

Departmental E-mail: [gender@indiana.edu](mailto:gender@indiana.edu)

Departmental URL: <https://genderstudies.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

Gender Studies examines the social processes, cultural representation, relations of power, and forms of knowledge that generate an array of gendered perspectives and experiences worldwide. A focus on gender as an analytic category facilitates an array of scholarly collaborations, reflecting new theoretical and methodological developments in the social sciences, the arts and humanities, the natural sciences, and policy studies. Categories of difference that intersect with gender such as sexuality, race, ethnicity, class, and (dis)ability, are attended to carefully in all aspects of the doctoral degree program.

The Department emphasizes integrative and transdisciplinary modes of analysis for the study of sexualities and sexual identities, bodies and their technologization and medicalization, representation and social/cultural production, and feminist epistemologies.

Three unique core courses form the heart of the program: G600 Concepts of Gender, G603 Contemporary Debates in Feminist Theory, G702 Researching Gender Issues.

### Special Requirements

(See also general University Graduate School requirements.)

### Doctor of Philosophy Degree

#### Admission Requirements

- Applicants for graduate admission must hold baccalaureate degrees from accredited four-year collegiate institutions.
- For graduate admission the College requires a cumulative undergraduate GPA of 3.0 or higher.
- Graduate Record Examinations (GRE) taken in the past five years are optional and not required. The institution code for Indiana University is 1324. If

applicants chose to submit scores they must ask ETS to forward GRE scores to IU using this code.

- For applicants whose native language is not English, the College and the University Graduate School require proof of proficiency in reading, writing, speaking, and understanding English. In almost all cases proficiency should be demonstrated by achieving a score of 213 (computer-based) or 79 (internet-based) or higher on the Test of English as a Foreign Language (TOEFL).

### Course Requirements

The requirements for this doctoral degree are 90 credit hours beyond the bachelor's degree - configured as at least 48 credit hours of graded course work and an additional 42 dissertation credit or coursework credit hours (typically as 899 or 901). Each doctoral candidate will complete three required core courses involving theory, methodology, research skills, and professional development: G600 *Concepts of Gender*, G603 *Feminist Theories*, G702 *Researching Gender Issues*. Candidates will also complete a 12-credit-hour minor, which should be taken externally (i.e., in another department) or in an approved program listed in the Graduate Bulletin. Elective courses complete the required 27 hours of gender-related course work. A maximum of 30 credits may be transferred from graduate work completed at another university, provided the department's Director of Graduate Studies (DGS) approves the course content.

Only those students intending to pursue the Ph.D. will be admitted to the program. However, a Master's degree may be obtained with the approval of the DGS and if the following criteria are satisfied: (1) good standing in the department (as determined by annual reviews, GPA, and any history of probationary status); (2) at least 30 credits of course work successfully earned, including the 9 credits of core GNDR courses, minimum of 9 additional credits of graduate-level GNDR courses, and may include up to 12 credits of approved graduate-level non-GNDR courses; (3) a grade of B or higher in the 3 required core courses for the PhD (600, 603, 702); and (4) either a comprehensive MA exam (the equivalent of Part A of the doctoral comprehensive exam), or a substantive research paper (MA thesis) of roughly 50 pages, with a successful oral defense by an MA committee.

### Foreign Language Requirement

Gender Studies does not require a foreign language for all students. However, if a candidate is engaged in transnational gender scholarship, a foreign language may be formally required. The DGS will determine the means by which proficiency will be demonstrated.

### Research Skills

Beyond the required core course *G702 Researching Gender Issues*, there is no specific research-related skill requirement. However, a student's advisor may require additional competency in (a) research skill(s) appropriate to that student's dissertation topic. Such requirements may include competency in a second language, statistical methods, questionnaire development, ethnographic methods, interviewing techniques, textual or media analysis, computing/internet/webmaster operations, specific laboratory skills, other research and technical skills, or appropriate combinations of any of these. These

studies are to be undertaken early in the candidate's graduate career. The assessment and completion of any required research competencies normally must be certified by the DGS prior to admission to candidacy.

### **Additional Requirements after Admission with Master's Degree**

Candidates admitted with a master's degree from another institution will be required to take GNDR courses in our department. The program will be decided in consultation with the student's faculty advisor and the DGS and take into consideration their previous background and training, and determine which course credits can be transferred to our graduate program.

### **Qualifying Examination and the Dissertation Defense**

Qualifying examinations (both written and oral) are to be taken approximately 9 months after the completion of course work. Upon successful completion of the qualifying examination and satisfactory completion of the dissertation proposal defense, the student will be nominated to candidacy for the Ph.D. The Dissertation Committee, which must be approved by the Dean of the Graduate School, will be responsible for directing and evaluating the thesis. The dissertation defense serves as the final oral examination and will cover topics related to the dissertation and area of specialization.

### **Ph.D. Minor in Gender Studies Course Requirements**

A Ph.D. Minor in Gender Studies requires at least four 3-4 credit courses offered by the Department of Gender Studies. At least 1 of these courses must be chosen from the following: G598 Feminist Theory: Classic Texts and Founding Debates; G600 Concepts of Gender; G603 Feminist Theories; G700 Sexualized Genders/Gendered Sexualities; or G702 Researching Gender Issues. Students may petition for a maximum of one non-GNDR graduate-level 3-4 credit course taken in another IU department or transferred from graduate work at another university to be counted towards the minor. The DGS must deem such a course to have significant Gender Studies content and approve transfer credits. Plans for the minor must be made in consultation with the DGS or Graduate Secretary in the Department of Gender Studies.

### **Grades**

Only grades of B (3.0) and above will count for credit.

### **Examination**

None required. A Gender Studies faculty member may be invited to attend the student's oral qualifying examination in their home department.

### **Faculty**

#### **Chairperson**

Stephanie A. Sanders\*

#### **Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### **Martha C. Kraft Professor of Humanities**

Fedwa Malti-Douglas (Emeritus, Gender Studies)

#### **Director of Graduate Studies**

Cynthia Wu\*

#### **Founding Professor**

Jeanne Peterson\* (Emerita, History)

#### **Provost Professor and Peg Zeglin Brand Chair**

Stephanie A. Sanders\*

#### **Provost Professor and Jean C. Robinson Scholar**

Brenda R. Weber

#### **John V. Hill Professor of Eastern European History and Gender Studies**

Maria Bucur\*

#### **Ruth N. Halls Associate Professor of Gender Studies**

Justin R. Garcia\*

#### **Ruth N. Halls Associate Professor of History and Gender Studies**

Amrita Chakrabarti Myers\*

#### **Professors**

Maria Bucur\* (History), Lessie Jo Frazier\* (American Studies, Adjunct, Anthropology, Cultural Studies, History, Affiliate, Latin American and Caribbean Studies, Center for Study of Global Change, International Studies, Latino Studies), Sara Friedman\* (Anthropology), Justin R. Garcia\* (Executive Director, Kinsey Institute, Affiliate, Cognitive Science, Adjunct, IU School of Medicine), Stephanie A. Sanders (The Kinsey Institute, Rural Center for AIDS/STD Prevention, Center for Sexual Health Promotion, IU School of Public Health), Brenda R. Weber\* (Affiliate, American Studies, Cultural Studies, English, The Kinsey Institute, Center for the Research of Race and Ethnicity in Society), Cynthia Wu\* (Director, Race, Migration, and Indigeneity; Asian American Studies, Affiliate, Center for Research on Race and Ethnicity in Society)

#### **Associate Professors**

Laura A. Foster\* (Affiliate, African Studies and Maurer School of Law), Colin R. Johnson\* (Adjunct, History, Affiliate, American Studies, Human Biology/The Kinsey Institute), Amrita Chakrabarti Myers\* (History, Affiliate, African American and African Diaspora Studies, American Studies, Center for Research on Race and Ethnicity in Society),

#### **Assistant Professors**

Stephanie Andrea Allen, Meredith Lee, Gabriel Peoples (Affiliate, American Studies, Race, Migration, and Indigeneity)

#### **Clinical Associate Professor of Gender Studies**

Jennifer E. Maher

#### **Visiting Assistant Professor**

David Church

## Affiliated Graduate Faculty

### Affiliated Professors

Asma Afsaruddin\* (Middle Eastern Languages and Culture), Judith A. Allen\* (History), Shaowen Bardzell (Informatics), Purnima Bose\* (English), J. Kameron Carter (Religious Studies), Wendy Gamber\* (History), Brian Gilley (Anthropology), Patricia Ingham\* (English), Kristen Jozkowski (Applied Health Science, The Kinsey Institute), Stephanie C. Kane\* (International Studies), Ellen D. Ketterson\* (Biology), Seung-Kyung Kim (East Asian Languages and Cultures), Sarah Knott\* (History), Stephanie Li\* (English), Karma Lochrie\* (English), Jody Madeira\* (Law), Laura McCloskey\* (Applied Health Sciences), Mary Murphy (Psychological and Brain Sciences), Solimar Otero (Folklore and Ethnomusicology), Radhika Parameswaran\* (Journalism), Zoë Peterson (Counseling and Educational Psychology), Sara Phillips\* (Anthropology), Brian Powell\* (Sociology), Bret Rothstein (History), Colleen Ryan (French and Italian), Steve Sanders (Law), Micol Seigel (American Studies), Susan Seizer (Anthropology), Virginia J. Vitzthum\* (Anthropology), Deborah Widiss (Law), Susan Williams\* (Law), Y. Joel Wong (Counseling and Educational Psychology), William L. Yarber\* (Applied Health Science)

### Affiliated Associate Professors

Penelope Anderson\* (English), Beth Buggenhagen\* (Anthropology), Youngjoo Cha (Sociology), Lynn Duggan (Labor Studies), Jennifer Fleissner\* (English), Jennifer Goodlander (Theatre, Drama, and Contemporary Dance), Sarah Imhoff (Religious Studies), Alisha Lola Jones (Folklore and Ethnomusicology), Aziza Khazzoom\* (Middle Eastern Languages and Cultures), Nicole Martins (Communication Science), Michelle Moyd (History), Miriam Northcutt Bohmert (Criminal Justice), Julia Roos\* (History), Ranu Samantrai\* (English), Edith Sarra (East Asian Languages and Culture), Rebekah Sheldon\* (English), Margaret Sutton\* (Educational Leadership and Policy Studies), Alberto Varon\* (English), Joel Wong\* (Education)

### Affiliated Assistant Professors

Ryan Powell (Cinema and Media Studies), Freya Thimsen (English),

### Affiliated Visiting Lecturers

Maria Hamilton Abegunde (African American and African Diaspora Studies)

### Academic Advisor, Director of Graduate Studies

Cynthia Wu\*, Lindley Hall 215 (812) 855-0101

## Courses

### Description of Core Required Courses

- **GNDR-G 600 Concepts of Gender (3 cr.)** Introduces historical, theoretical, behavioral, philosophical, scientific, multi- and cross-cultural perspectives on gender and its meanings. Attention is given to the emergence of the category "gender" itself, and its variable applications to different fields of knowledge, experience, cultural expression, and institutional regulation, including queer, trans, and other theories of sex, sexuality, and desire.
- **GNDR-G 603 Feminist Theories (3 cr.)** Explores classic and current feminist theories, asking questions about knowledge, subjectivity, sexuality, and ethics. Debates are situated within and against various intellectual movements, such as Marxism, post-structuralism, theories of race and ethnicity. Sexuality studies and queer theory's relation to feminist praxis will form a key component of the course.
- **GNDR-G 702 Researching Gender Issues (3 cr.)** This course explores research methodologies and methods in history that are relevant to gender studies. The impact of gender studies on epistemological and methodological issues in history is examined. The course provides students with an overview of research tools, methods, techniques, approaches, paradigms, and theoretical contributions pertinent to gender-related historical research.

### Description of Additional Gender Studies Courses

- **GNDR-G 598 Feminist Theory: Classic Texts and Founding Debates (3 cr.)** Explores founding texts of contemporary feminist theory, asking questions about identity, knowledge, sexuality, and ethics. Such works have emerged in relation to a variety of theoretical discourses, such as Marxism, structuralism, cultural studies, and others. Examines the intellectual history of feminist theory and its resonance with more recent trends.
- **GNDR-G 601 Scientific Practices and Feminist Knowledge (3 cr.)** Examines intersections of gender and knowledge focusing on feminist analyses of scientific epistemology and practice, and the implications of feminist theories about the social meaning and gendered construction of scientific research. Particular focus is placed upon race, class, sexuality and cultural difference in medical, psychological, and evolutionary accounts of "human nature."
- **GNDR-G 602 Gender Dimensions of Cultural Production and Criticism (3 cr.)** Interrogates the gendered nature of cultural production and criticism. Controversies related to gender dimensions of aesthetics, cultural meanings, or genres receive examination, as well as claims about the constitution of genius or creativity, and the role of identity and race in cultural production. The critical issue of theorizing audience/reader/viewer warrant particular scrutiny.
- **GNDR-G 604 Knowledge, Gender, and Truth (3 cr.)** Examines feminist contributions to epistemological questioning of knowledge formations through comparison of case study disciplines and through cross-cultural study. Arguments about knowledge values of "truth," "objectivity," "validity," "reason," and "representativeness" as gendered categories. Receive scrutiny in relation to fields such as historiography, ethnography, ethics, science, or psychology.
- **GNDR-G 695 Graduate Readings and Research in Gender Studies (1-6 cr.)** This course provides for graduate students' intensive independent study of specific topics. Study is supervised by an appropriate core or affiliated faculty member whose



research expertise matches the student's area of interest.

- **GNDR-G 696 Research Colloquium in Gender Studies (1-3 cr.)** Active participation in Gender Studies research colloquia. Introduces students to the problems, interpretations, theories and research trends in all areas related to gender and sexuality studies. Topics vary throughout the semester. Facilitates exposure to a variety of approaches to interrogating research questions about gender. May be repeated more than once for credit.
- **GNDR-G 700 Sexualized Genders/Gendered Sexualities (3 cr.)** Expands our understanding of the relationship between biological sex, gendered identities, and sexual "preferences," practices and lifeways that push beyond binary models reliant on a simple "nature/culture" distinction. Focus is placed on the dynamic and variable aspects of sex, sexuality, and gender within and across cultures and historical periods.
- **GNDR-G 701 Graduate Topics in Gender Studies (1-4 cr.)** Advanced investigation of selected research topics in women's studies. Topics to be announced.
- **GNDR-G 704 Cultural Politics of Sexuality in the Twentieth Century (3 cr.)** Examines the cultural and political implications of sexuality's emergence as a public discourse during the twentieth century. Specifically, it examines certain limit cases in which the ostensibly private matters of sexual behavior and sexual identity have given rise to very public controversies about the cultural and political values of society at large.
- **GNDR-G 707 Gender Studies Pedagogy & Theory (4 cr.)** A high level graduate course, designed to offer theory and practical applications for teaching feminist and gender studies.
- **GNDR-G 708 Contested Masculinities (3 cr.)** This course examines masculinity at sites of contestation—between disciplines, historical moments, nationalities, regions, and bodily ontologies. By tracing the resonances of transnational, transdisciplinary, and transhistorical masculinities, our aim is to critically examine masculinities, particularly in the context of feminist challenges to gender ideologies.
- **GNDR-G 710 Gender, Medicine, and the Body (3 cr.)** Examines topical themes related to medicine and the body as they interact with gender.
- **GNDR-G 714 Gender, Race, and Media (4 cr.)** Examines representations of race, class, gender, and sexual identity in the media. Considers issues of authorship, spectatorship, (audience) and the ways in which various media content (film, television, print journalism, advertising) enables, facilitates, and challenges these social constructions in society.
- **GNDR-G 718 Transnational Feminisms and the Politics of Globalization (3 cr.)** Interrogates debates concerning globalization and gender. Focuses on how gender shapes and is shaped by the flow of money, people, and culture that characterize "globalization." How is gender influenced by geographic dislocations and re-routings? How are women and men situated as agents and subjects of global change?

- **GNDR-G 780 Gender Studies Professionalism and Practicum (4 cr.)** This course is designed to offer advanced graduate students an intensive exposure to the theories, practices, and processes of academic publishing and professionalism, with a specific focus on gender studies as a discipline. In general, the course offers students a practical structure for such professional activities as writing abstracts for conferences and grants, turning a seminar paper into a publishable article, approaching editors of journals and presses, writing job letters, compiling CV's and teaching portfolios, giving conference papers and job talks, and applying for grants, post-docs, and faculty positions. The course is organized thematically and for spring 2013, the focus of the seminar will be on gender and media. Practicum credit is available for students who elect to participate in extra-curricular research, conference, or writing activities pre-determined by the department.
- **GNDR-G 899 Ph.D. Dissertation (1-12 cr.)** Research and writing of doctoral dissertation. This course is eligible for a deferred grade.

## Network Science

### Curriculum

#### Ph.D. Minor in Network Science Description

The Ph.D. minor degree Program in Network Science offers doctoral students in any Indiana University Doctoral Program, given Department and/or School approval, training in the theoretical, methodological, analytic and practical approaches to increase our understanding of the nature, origins and influences of natural, social and technological networks. This program draws on the expertise of the wide range and number of faculty across Indiana University who focus on networks and interdependent ties in systems from society, technology, and animal/human systems. These faculty are drawn from across schools and departments. This minor represents an opportunity for Ph.D. students to be introduced to the complexity of a cutting-edge transdisciplinary perspective that spans substantive issues from genes to global cultures.

#### Course Requirements

The curriculum aims to serve the needs of a wide range of doctoral students across Indiana University while working to interface with existing departmental curricular course offerings. Network Science courses are linked to Departments and Schools and do not represent a foundational area at this point in time. As such, the requirements combine two types of courses: 1) Foundational courses on networks in disciplines that focus on how this perspective translates into theories, tools and discovery in the area, and 2) Phenomenon or Topic-based courses that include a substantial component that addresses how Network Science is or can be used in this case. Given that these courses are generally required for Ph.D. degrees in departments and schools, but are considered electives, any particular course cannot be expected to be offered in every semester or every year. Give this limitation, a total of twelve (12) credits is required. Since most graduate courses are 3 credit hours,



the minor requirements are expected to be completed with four courses. The four courses will be split between the two types of courses listed above. Specifically, with the advice of Network Science faculty in the home discipline and in concert with the transdisciplinary expertise in the IU Network Science Institute (IUNI), students may select two courses from Category 1 below, including the basic Network Science course in their or a closely related discipline. The remaining two courses can be selected from Category 2 under the same conditions of advice. The course listing is expected to change with selections augmented over the next decade with new faculty arriving at IU and the IUNI research program maturing. A complete listing will be held with the IUNI Associate Director.

### Courses

All courses included in the minor program are currently offered within the context of existing programs.

### Crosslisted Courses

**CATEGORY 1 - Foundational Courses:** Department or school-based courses with primary focus on network science

#### Cognitive Science

COGS-Q 610 Networks of the Brain

#### Computer Science

CSCI-B 656 Web Mining

#### Economics

ECON-E 724 Network Formation Games

#### Information and Library Science

ILS-Z 644 Information Networks

ILS-Z 637 Information Visualization

#### Informatics

INFO-I 601 Introduction to Complex Networks and Systems

INFO-I 585 Biologically-Inspired Computing

INFO-I 590 Complex Networks and Their Applications

INFO-I 590 Mining the Social Web

INFO-I 609 Complex Systems Seminar I

#### Sociology

SOC-S 651 Social Network Analysis

SOC-S 660 Social Networks

#### Statistics

STAT-S 681 Introduction to Network Analysis

STAT-S 681 Introduction to Networks

STAT-S 681 Statistical Network Analysis

STAT-S 681 Statistical Methods for Networks

### CATEGORY 2 - Phenomenon or Topic-based Courses:

Department or school-based courses with major network components

#### Cognitive Science

COGS-Q 610 Networks of the Brain

COGS-Q 700 Digital Methods in History and Philosophy

#### Computer Science (IUPUI)

CSCI 57300 Data Mining

CSCI 59000 Data Communication and Computer Networks

#### Economics

ECON-E 585 Industrial Organization and Control

ECON-E 724 Seminar in Economic Theory: Network Formation Games

#### Geography

GEOG-G 539 Advanced Geographic Information Science

#### Information and Library Science

ILS-Z 636 Data Semantics

ILS-Z 639 Social Media Mining

#### Intelligent Systems Engineering

ENGR-E 541 Simulating Cancer as an Intelligent System

#### Informatics (IUPUI)

INFO-B 646 Computational Systems Biology

Informatics INFO-I 519 Introduction to Bioinformatics

INFO-I 590 Collective Intelligence

INFO-I 690 Mathematical Modeling of Complex Systems

INFO-I 701 Advanced Complex Systems Seminar II

INFO-I 709 Complex Systems

#### Physics

PHSY-P 582 Biological and Artificial Neural Networks

#### Political Science

POLS-Y 557 Contextual Analysis

POLS-Y 669 Network Analysis and World Politics

#### Psychological and Brain Sciences

PSY-P 533 Introduction to Bayesian Data Analysis I

PSY-P 657 Statistical Methods for Networks

PSY-P 657 Networks of the Brain

PSY-P 657 Network Analysis II

#### Statistics

STAT-S 675 Statistical Learning and High Dimensional Data Analysis

### Faculty

#### Director

Professor Santo Fortunato (Informatics, IUB)

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Distinguished Professors

Katy Börner\* (Engineering and Information Science, IUB)

Filippo Menczer\* (Informatics, IUB)

Bernice Pescosolido\* (Sociology)

Olaf Sporns\* (Psychological and Brain Sciences, IUB)

#### Professors

John M. Beggs\* (Physics, IUB)

Johan Bollen\* (Informatics, IUB)

Arjan Durrezi\* (Department of Computer and Information Science, IUPUI)

Alessandro Flammini\* (School of Informatics and Computing, IUB)

Santo Fortunato\* (Informatics, IUB)

John K. Kruschke\* (Psychological and Brain Sciences, IUB)  
 Frank Page Jr.\* (Economics, IUB)  
 Brea Perry\* (Sociology, IUB)  
 Michael Trosset\* (Statistics, IUB)

### Associate Professors

Yong Yeol Ahn\* (Informatics, IUB)  
 Mohammad Al Hasan\* (Computer and Information Science, IUPUI)  
 Aniruddha "Rudy" Banerjee\* (Geography, IUB)  
 Filippo Radicchi\* (Informatics, IUB)  
 Filomena Garcia\* (Economics, IUB)  
 Hank Green (Public Health, IUB)  
 Paul Macklin\* (Informatics, IUB)  
 Staša Milojević\* (Information and Library Science, IUB)

### Assistant Professors

Brad Fulton\* (School of Public and Environmental Affairs, IUB)  
 Byungkyu Lee (Sociology, IUB)  
 Emerson Melo\* (Economics, IUB)

## General Science

### Interdepartmental Graduate Committee on General Science

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

Professor Robert Sherwood\* (Education), Director;  
 Associate Professor John Carini\* (Physics); Clinical Associate Professor Cathrine Reck (Chemistry); Professor Albert Ruesink\* (Biology)

### Graduate Advisor

Professor Robert Sherwood\*, Wright Education Building 3054, (812) 856-8154

### Degree Offered

### Master of Arts for Teachers

(Currently this program is not accepting applications.)

### Special Program Requirements

(See also general University Graduate School requirements.)

### Admission Requirements

Bachelor's degree with 35 credit hours in science or in science and mathematics. It should be understood that the program of study for this degree is not designed to allow one to continue for the Ph.D. degree.

### Course Requirements

Sixty-five (65) credit hours in science and mathematics (counting courses taken as an undergraduate) to include:

1. 35 credit hours in the physical sciences, distributed as follows: astronomy (3 credit hours), chemistry (10 credit hours), geology (6 credit hours), physics (10 credit hours), and electives (6 credit hours);
2. 25 credit hours in the biological sciences, distributed as follows: plant sciences (10 credit hours), microbiology (5 credit hours), and zoology (10 credit hours). Certain general biology courses may count toward this requirement (see below); and
3. 5 credit hours in mathematics or computer science.

At least 36 credit hours are required beyond the bachelor's degree, including 26 credit hours in the above-named sciences, mathematics, or computer science, the remaining 10 credit hours in science, mathematics, or education.

These minimum requirements are to be met by selecting from the following courses; an advisor in the program should be consulted regarding the acceptability of other courses.

1. Physical Sciences Astronomy: A100, A105, A221, A222, A451, A452, Chemistry: C101 and C121, C117, C118, C243, R340, C341, C342, C343, C344, C360 Geological Sciences: G111, G112, G221, G222, G334, G404 Physics: P201-P202 (or P221-P222), P301, P309, P310, P314, P317, P321, P331, P340, P350, P460
2. Biological Sciences General Biology: L111, L112, L113, L211, L311, L312, L313, L318, L319, L323 Microbiology: M250, M255 Plant Sciences: B300, B351, B352, B364, B371, B373 Zoology: Z373, Z374, Z375, Z406, Z466
3. Mathematics and Computer Science: Mathematics: M212; Computer Science: A201

Other 300- and 400-level science courses must be approved by your advisor.

### Grades

B (3.0) average or higher; at least B in science courses.

### Certification Requirements

All students seeking the M.A.T. degree must be eligible for certification to teach at the middle school or high school level in Indiana or another state.

## Geography

### College of Arts and Sciences

Departmental E-mail: [geog@indiana.edu](mailto:geog@indiana.edu)

Departmental URL: <https://geography.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

Apply electronically for admission: <http://graduate.indiana.edu/admissions/apply.shtml/>

### Curriculum

### Degrees Offered

Master of Arts, Master of Science, and Doctor of Philosophy.

## Special Departmental Requirements

(See also general University Graduate School requirements.)

### Grades

B (3.0) average or higher; B in core courses.

## Master of Arts Degree Admission Requirements

Undergraduate major in geography or its equivalent. Applicants not meeting this requirement may be expected to take additional work.

### Fields of Study

Cities, Development and Justice; Climate and Environmental Change; Food and Agriculture; Geographic Information Systems and Remote Sensing; Water Resources.

### Course Requirements

A minimum of 30 credit hours, including a core curriculum consisting of G500, G501, and two of three methods courses: G588, G576, or either G538 or G535. In addition, each student should select one topical field of concentration and complete a sequence of courses involving a minimum of 9 graduate credits in that field.

### Thesis or Research Papers

Students have the option of writing a thesis (G850) or two research papers (G845). Up to 6 credit hours are allowed for a thesis and up to 3 credit hours are given for each research paper.

### Final Examination

Oral examination covering the topic of specialization, the thesis or research papers, and other aspects of geography.

## Master of Science Degree Admissions Requirements

Undergraduate major in geography, environmental science, mathematics, physics, chemistry, biology, or equivalent. Applicants not meeting this requirement may be expected to take additional work.

### Fields of Study

Cities, Development and Justice; Climate and Environmental Change; Food and Agriculture; Geographic Information Systems and Remote Sensing; Water Resources.

### Course Requirements

A minimum of 30 credit hours, including a core curriculum consisting of G500, G501, and two of three methods courses: G588, G576, or either G538 or G535. In addition, each student should select one topical field of concentration and complete a minimum of 9 graduate credits in that field.

### Thesis or Research Papers

Students have the option of writing a thesis (G850) or two research papers (G845). Up to 6 credit hours are allowed

for a thesis and up to 3 credit hours are given for each research paper.

### Final Examination

Oral examination covering the topic of specialization, the thesis or research papers, and other aspects of geography.

## Master of Science in Geography with Specialization in Climate and Environmental Change

Requirements are the same as for the M.S. in Geography, with the additional requirement of a minimum of 9 graduate credits in the field of climate and environmental change. Suitable courses include but are not limited to:

- GEOG-G 505 Ecological Climatology
- GEOG-G 532 Physical Climatology
- GEOG-G 540 Topics in Environmental Geography
- GEOG-G 544 Climate Change Impacts
- GEOG-G 550 Field Methods in Physical Geography
- GEOG-G 551 Physical Hydrology
- GEOG-G 552 Tree-Ring Science
- GEOL-G 577 Topics in Climatology
- GEOG-G 588 Applied Spatial Statistics
- GEOG-G 589 Advanced Geospatial Data Analysis in Python
- GEOG-G 602 Topical Seminar in Climate, Land, & Environmental Change

## Master of Science in Geography with Specialization in Geographic Information Systems and Remote Sensing

Requirements are the same as for the M.S. in Geography, with the additional requirement of a minimum of 9 graduate credits in the field of geographic information systems and remote sensing. Suitable courses include but are not limited to:

- GEOG-G 535 Environmental Remote Sensing
- GEOG-G 536 Advanced Remote Sensing: Digital Image Processing
- GEOG-G 538 Geographic Information Systems
- GEOG-G 539 Advanced Geographic Information Systems
- EAS-G 584 GIS Applications in Geology
- GEOG-G 588 Applied Spatial Statistics
- GEOG-G 589 Advanced Geospatial Data Analysis in Python
- GEOG-G 639 GIS and Environmental Analysis

## Doctor of Philosophy Degree Admission Requirements

Candidates who enter without a Masters will earn one before progressing to the Ph.D.

### Fields of Study

Cities, Development and Justice; Climate and Environmental Change; Food and Agriculture; Geographic Information Systems and Remote Sensing; Water Resources

### Course Requirements

A minimum of 90 credit hours, including a core curriculum consisting of G500, G501, and two of three methods courses: G588, G576, or either G538 or G535. A dissertation (up to 20 credit hours of G860) is also

required. Each student must select a major within the field of geography chosen from the fields of study listed above. Students must complete a minimum of 12 credit hours beyond the M.A./M.S. in the major. The dissertation must be written in the major field of study within geography.

### Minors

At least one outside minor required. It should be closely related to the internal major and must be chosen from approved programs of study outlined in this bulletin (unless exceptions are approved by the University Graduate School).

### Qualifying Examination

Written and oral, covering the areas of concentration, other aspects of geography, and the tentative dissertation problem.

### Research Proposal

The proposed research for the dissertation must be approved by the research committee.

### Final Examination

Oral defense of the dissertation.

### Ph.D. Minor in Geography

The requirements for the Ph.D. minor in geography are flexible. A student's specific program should be developed in consultation with the minor-field advisor in geography. Typical fields include Cities, Development and Justice, Climate and Environmental Change, Food and Agriculture, Geographic Information Systems and Remote Sensing, and Water Resources. A minimum of 9 credit hours of course work.

### Ph.D. in Geography with Specialization in Climate and Environmental Change Requirements

Requirements are the same as the Ph.D. in Geography, with the additional requirement of a minimum of 12 credit hours in Climate and Environmental Change beyond the M.S. in Geography with a Specialization in Climate and Environmental Change. Suitable courses include but are not limited to the list that appears under the course requirements for the M.S. in Geography with a Specialization in Climate and Environmental Change (above).

### Ph.D. in Geography with Specialization in Geographic Information Systems and Remote Sensing Requirements

Requirements are the same as the Ph.D. in Geography, with the additional requirement of a minimum of 12 credit hours in Geographic Information Systems and Remote Sensing beyond the M.S. in Geography with a specialization in Geographic Information Systems and Remote Sensing. Suitable courses include but are not limited to the list that appears under the course requirements for the M.S. in Geography with a specialization in Geographic Information Systems and Remote Sensing (above).

Certificate in Geographic Information Systems (GIS) and Remote Sensing

Students must be enrolled in a degree program and must complete a minimum of 15 credit hours in geographic information systems and remote sensing coursework including:

1. Both GEOG-G535 Environmental Remote Sensing and GEOG-G538 Geographic Information Systems.
2. GEOG-G536 Advance Remote Sensing or GEOG-G539 Advanced Geographic Information Systems.
3. One course (3 cr. hrs.) selected from:
  - GEOG-G588 Applied Spatial Statistics
  - GEOG-G589 Advanced Geospatial Data Analysis in Python
  - EAS-G584 GIS Applications in Geology
  - SPEA-E518 Vector-Based Geographic Information Systems
  - SPEA-E519 Applied Remote Sensing of the Environment
  - SPEA-E529 Applications in GIS
  - SPH-R580 GIS and Spatial Data Applications in Public Health
  - SPH-E660 Spatial Epidemiology and Disease Mapping
  - GEOG G639 GIS and Environmental Analysis

### Faculty

#### Chairperson

Professor Rebecca Lave\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Professors

Dennis Conway\* (Emeritus), Elizabeth Cullen Dunn\*, Daniel C. Knudsen\*, Rasul Mowatt\*, Scott M. Robeson\*

#### Associate Professors

Ishan Ashutosh\*, Darren Ficklin\*, Charles Greer\* (Emeritus), Taehee Hwang\*, Justin Maxwell\*, Ernest Wohlenberg\* (Emeritus)

#### Assistant Professors

Patricia Basile, Michael Dwyer, Natasha MacBean\*, Julio Postigo\*, Annie Shattuck\*, Kurt B Waldman\*

#### Lecturers

Olga Kalentzidou, Yuri Kim, Roman Zlotin (Emeritus)

#### Associate Research Scientist

Sally Letsinger

#### Adjunct Professors

Eduardo Brondizio\* (Anthropology), Kelly Caylor (University of California, Santa Barbara), Owen Dwyer (Indianapolis), Carl Ipsen\* (History), Emilio Moran\* (Michigan State University), Philip Stevens\* (Public and Environmental Affairs), Jeffrey Wilson (Indianapolis)

#### Adjunct Associate Professors

Timothy Brothers (Indianapolis), Stephanie DeBoer (Film and Media Studies), James Farmer (Public and



Environmental Affairs), Chunfeng Huang\* (Statistics), Kimberly Novick\* (Public and Environmental Affairs), Abdulkader Sinno\* (Political Science)

### Adjunct Assistant Professor

Mallory Barnes (Public and Environmental Affairs)

### Director of Graduate Studies

Associate Professor Darren Ficklin\*, Student Building 120, (812) 856-5047

### Courses

- GEOG-G 425 Africa: Contemporary Geographic Problems (3 cr.) Note: This course is not being offered at this time.
- GEOG-G 427 Russia and Its Neighbors (3 cr.) Note: This course is not being offered at this time.
- GEOG-G 428 Geography of Europe (3 cr.) Note: This course is not being offered at this time.
- GEOG-G 500 Research Problems in Geography (3 cr.) Examination of current research areas and research problems in geography. Introduction to research design and research methods.
- GEOG-G 501 Research Problems in Geography II (3 cr.) P: G500. Further development of research formulation and design skills. Approaches to geographic research and the preparation of research problem statements and proposals that may lead to thesis or dissertation research. May be repeated for a maximum of 6 credits in second graduate degree.
- GEOG-G 502 Introduction to Transportation Analysis (3 cr.) An examination of classical and contemporary approaches to the analysis of transport systems, spatial interaction, sustainable transport, and related environmental and economic aspects of transport at regional and national scales. Note: This course is not being offered at this time.
- GEOG-G 505 Ecological Climatology (3 cr.) Surveys the relationship between climate and vegetation and explores the consequences of human impacts. Examines the role of climate on vegetation patterns, agricultural crops, and select ecosystems and in turn, the influence of vegetation on climate.
- GEOG-G 506 Sustainable Transportation (3 cr.) P: G502. An examination of non-sustainability in the transport sector. Problems of petroleum depletion, air quality and its impact on human health, carbon dioxide emissions and their impact on global warming, transport accidents and congestion are examined along with planning, policy, and technological solutions to these problems. Note: This course is not being offered at this time.
- GEOG-G 509 Seminar in the History and Philosophy of Geography (3 cr.) P: Consent of instructor. This course examines the history of geography. Particular reference is made to the use of philosophical traditions of positivism, structuralism, humanism, and postmodernism within geography and to the major debates about philosophy and methodology in the last two centuries within the discipline. Note: This course is not being offered at this time.
- GEOG-G 511 Sustainable Development Systems (3 cr.) P: G208 or consent of instructor. An examination of the notion of sustainable development and its meaning and implementation in the areas of resources, agriculture, water, transport, cities, and tourism. Also considers how such systems can be implemented in developed countries.
- GEOG-G 512 Urban Transportation Analysis (3 cr.) P: G312 or G502 or consent of instructor. Aspects of urban transportation planning process. Existing travel patterns, variations in trip generation, spatial interaction and distribution models, assignment of trips to existing networks, and the evaluation of future networks. Note: This course is not being offered at this time.
- GEOG-G 513 Advanced Economic Geography (3 cr.) P: G313 or consent of instructor. Advanced economic geographic theory and location decision making. Applications include agricultural, industrial, and commercial location decision making as well as geographic understanding of the wider regional development process. Students will be expected to demonstrate understanding of theories and location decision making graphically and mathematically.
- GEOG-G 515 Sustainable Urbanism (3 cr.) P: G314 or consent of instructor. In-depth examination of "green urbanism" and sustainable urban development. Sustainable urbanism is viewed as an integral part of, and not distinct from, global environmental sustainability. Lessons from European cities inform the assessments of North America's urban future.
- GEOG-G 517 Development Geography: Critical Perspectives of the Historical and Spatial Rhythms of Capitalism (3 cr.) Why are some places richer than others? Is inequality a necessary part of our economic system? What is the economic and political role of organizations like the World Bank? How are neo-liberalism and globalization related? These and related questions are explored through history, diffusion, and structure of global capitalism.
- GEOG-G 520 Migration and Mobility (3 cr.) Geographers are turning attention to processes that drive, regulate and accompany various scales of movement, politics of mobility, and the experience and effect of mobility. An understanding of mobility helps investigate processes like globalization, migration, tourism, homelessness, security and transport, international flows and micro-scale bodily movements in nuanced ways.
- GEOG-G 523, Refugees and Asylum Seekers (3 cr.) This course investigates the origins of the refugee crisis, aid to refugees, states attempts to discourage forced migrants from entering, and what life is like for the 70 million displaced people today.
- GEOG-G 532 Physical Climatology (3 cr.) Introduction to the physical basis of the climate system from the global to the local scale, emphasizing the surface energy and water balances. Examples are drawn from forested, agricultural, urban, and aquatic environments, as well as issues related to climate change. Skills used to study and quantify climate processes are developed.
- GEOG-G 535 Environmental Remote Sensing (3 cr.) Principles of remote sensing of the earth and its atmosphere, emphasizing satellite data in visible, infrared, and microwave portions of the electromagnetic spectrum. Emphasis on practical



applications and digital image analysis. A satellite data analysis project is required.

- GEOG-G 536 Advanced Remote Sensing: Digital Image Processing (3 cr.) P: G535 or consent of instructor. Advanced remote sensing theory and digital image processing techniques with an emphasis on environmental science applications. Hands-on computer exercises provide significant experience in digital image processing techniques for extraction of qualitative and quantitative information about Earth's terrestrial and aquatic environments.
- GEOG-G 538 Geographic Information Systems (3 cr.) Overview of the principles and practices of Geographic Information Systems (GIS). Spatial data models, database design, introductory and intermediate GIS, operations and case studies of real-world GIS applications. Laboratory exercises will provide significant hands-on experience. Lecture and laboratory.
- GEOG-G 539 Advanced Geographic Information Systems (3 cr.) P: G538 or consent of instructor. Intermediate and advanced topics in geographic information science and spatial analysis techniques using GIS software. This advanced course is for students who seek a greater understanding of this rapidly developing field and want to learn how to construct, manage, and analyze their own GIS data and models.
- GEOG-G 540 Topics in Environmental Geography (1-3 cr.) P: G305 or G315 or consent of instructor. Selected topics focus on the human dimensions of environmental change/conservation. Example focus topics: population-environment interactions, transport-environment interactions, and urban-environment interactions. May be repeated four times with a different topic for a maximum of 12 credit hours.
- GEOG-G 544 Climate Change Impacts (3 cr.) Increasing concentrations of greenhouse gases are causing climate to change at an unprecedented rate. This course will explain how and why anthropogenic activity is causing climate to change, how this impacts society and options for adaptation and mitigation, plus the potential to reduce climate change through geoengineering.
- GEOG-G 548 Capitalism and Nature (3 cr.) How has nature been appropriated, reworked, and produced under capitalism; conversely, how does the materiality of nature shape the conditions of capitalism? In this seminar, we will investigate how relations between capitalism and nature have evolved from the end of feudalism through the current neoliberal era.
- GEOG-G 549 Political Ecology (3 cr.) P: G315, G320, G341, G343, or consent of instructor. This seminar introduces political ecology, an approach which focuses on the political-economic context of natural resource conflicts with particular attention to issues of equity, justice, and power. This course covers the theoretical lineage of political ecology, its development over the last 20 years, and current hot topics in the field.
- GEOG-G 550 Field Methods in Physical Geography (3 cr.) Use of instrumentation for the measurement, analysis, and interpretation of field data concerning features and processes of the natural environment. Field and laboratory equipment will be used for research projects and environmental monitoring. Practical application of biogeographic, climatological, and hydrological principles.
- GEOG-G 551 Physical Hydrology (3 cr.) Introduction to hydrological processes occurring at multiple spatial and temporal scales. Principles of water resources such as infiltration, runoff, surface and groundwater flow are explored. Topics include environmental, economic, and social implications of floods, droughts, dams, water usage, current and future issues in water quality, water pollution, and water-resource regulation.
- GEOG-G 552 Tree-Ring Science (3 cr.) Examines the science of dendrochronology. The primary focus will be the applications of the science, as ultimately the information recorded by the trees must be used in our quest to better understand natural and human processes.
- GEOG-G 553 Water and Society (3 cr.) Do we control water, or does it control us? Introduce geographic perspectives on the interaction of water and society. Takes the holistic view and asks the big questions about how water shapes, and is shaped by, social, political, and cultural dynamics.
- GEOG-G 557 Urban Alternative Agriculture (3 cr.) From connecting with the earth to changing the food system, this course digs into the narratives surrounding community gardens and community orchards. We explore topics like sustainability, food justice, and the pastoral roots of these projects. We will utilize multimedia, speakers from community projects, and most importantly, class discussion.
- GEOG-G 558 Food and Poverty in America (3 cr.) Examines the experience of food insecurity in the U.S., the role of poverty in food production and consumption, and current mitigation strategies and social movements. Students learn the connections between food security, food justice, food sovereignty and gender, race, and ethnicity, along with the concept of food deserts.
- GEOG-G 560 Geography Internship (1-4 cr.) P: Graduate level courses in geography and consent of instructor. Faculty-directed study of geographical problems based on an internship experience. Student's area of placement must be related to major field of study. Offered fall, spring, and each summer session. Student may complete more than one internship, but total credit earned cannot exceed 4 credit hours.
- GEOG-G 561 Human Dimensions of Global Environmental Change (3 cr.) P: G208 or consent of instructor. Introduction of global environmental change (GEC), focusing on the human causes and consequences of biophysical transformations of land systems. Emphasis on socioeconomic, political, institutional, and environmental dimensions of land change; tropical forests, grasslands, and urbanizing areas; international environmental regimes; spatial methodologies in GEC research; and integrated approaches.
- GEOG-G 566 Computing in the Geospatial Sciences (3 cr.) A first course in scientific computing that

- emphasizes practical applications in the geospatial and environmental sciences. Requires high-level programming using MATLAB for visualization, data analysis, and modeling. Teaches problem solving through analysis and interpretation of a wide range of environmental and geographic data.
- GEOG-G 567 Ecohydrology (3 cr.) This course introduces basic principles and concepts in forest ecohydrology, focusing on modeling perspectives. We will examine processes and feedback between water, carbon, and nitrogen fluxes in application to water resources and forest management, and examines control of climate, vegetation change, and disturbance regimes on hydrological and biogeochemical processes.
  - GEOG-G 576 Qualitative Methods in Geography (3 cr.) Focuses on and provides practice in the various qualitative methods employed by geographers to solve problems within the geographic landscape. Each methodology is practiced in the field or within the laboratory so the students develop competency using these methods and can then apply them to a research project.
  - GEOG-G 577 Topics in Climatology (3 cr.) Selected topics in applied climatology, climate change, climate impacts, climate modeling, field methods, quantitative analysis, or related subjects. May be repeated once for credit with different topic.
  - GEOG-G 578 Global Change, Food and Farming Systems (3 cr.) P: G208 or consent of instructor. Introduction to food production and consumption systems, emphasizing linkages to land use and social change on food/farming system sustainability. Topics include: urbanization, population growth, and economic liberalization; farming livelihoods, gender and poverty; biotechnology; agro-ecology; global health.
  - GEOG-G 581 Terrestrial Ecosystem Modeling (3 cr.) This course introduces students to the major components of terrestrial ecosystem models - the land component of earth system models that are used in climate change projections. Components include biogeochemical, hydrology and energy cycles, as well as processes that impact ecosystems, such as disturbance, land use change and land management.
  - GEOG-G 582 Cultural Geography (3 cr.) Familiarizes students with the basic concepts and ideas that underpin the study of cultural geography, including the history of cultural geography, the constitution of the cultural landscape, and how landscape fractures across the lines of ethnicity, gender, and age.
  - GEOG-G 585 GIS Programming (3 cr.) This course introduces both spatial analysis and Python programming to undergraduate and graduate students, emphasizing hands-on based learning approaches. The ultimate goal of the course is to give students practical experience in programming based approaches in GIS and the ability to independently solve problems in GIS analysis.
  - GEOG-G 588 Applied Spatial Statistics (3 cr.) P: Consent of instructor. Extension of traditional statistical analysis to spatial data. Spatial means and spatial variances, the examination of differences in samples over space, spatial autocorrelation, nearest neighbor analysis, map comparison techniques. Emphasis on practical applications.
  - GEOG-G 589 Advanced Geospatial Data Analysis in Python (3 cr.) Students use Python to perform advanced geospatial data analyses and data visualization with large spatiotemporal datasets (e.g. modeling, remote sensing or GIS data). Includes an introduction to the Python programming language and the basics of scientific computing.
  - GEOG-G 602 Topical Seminar in Climate, Land and Environmental Change (1-3 cr.) Topics will vary to consider aspects of climate, land and environmental change. May be repeated for a maximum of 12 credits. May be repeated for a maximum of 12 credits.
  - GEOG-G 603 Topical Seminar in Globalization, Development and Justice (3 cr.) Topics will vary to consider aspects of globalization, development and justice. May be repeated for a maximum of 12 credits.
  - GEOG-G 604 Topical Seminar in Food and Agriculture (3 cr.) Topics will vary to consider aspects of food and agriculture. May be repeated for a maximum of 12 credits.
  - GEOG-G 605 Topical Seminar in Water Resources (3 cr.) Topics will vary to consider aspects of water resources. May be repeated for a maximum of 12 credits.
  - GEOG-G 615 Graduate Seminar in Geography (3 cr.) Exploration of different topics in Geography at the Graduate Level, topics vary. This course may be repeated with various topics.
  - GEOG-G 639 GIS and Environmental Analysis (3 cr.) Applications of Geographic Information Science principles in the collection, analysis and visualization of spatial data. Integration of GIS, remote sensing, and GPS technologies with web-based GIS applications. Review of current literature on techniques, theory, technology, and applications. Discussion, laboratory, and research project.
  - GEOG-G 830 Readings in Geography (arr.-12 cr.) P: Advanced courses in geography or closely related fields. Supervised readings on selected topics. Note: This course is eligible for a deferred grade.
  - GEOG-G 831 Advanced Research in Geography (1-6 cr.) P: Consent of faculty member. Individual research. S/F grading.
  - GEOG-G 840 Research in Geography (arr. cr.) P: Consent of faculty member. This course is eligible for a deferred grade. Individual research.
  - GEOG-G 845 Master's Papers (1-6 cr.) P: Consent of instructor. Research papers under supervision of faculty. Note: This course is eligible for a deferred grade.
  - GEOG-G 850 Master's Thesis (arr.-6 cr.) This course is eligible for a deferred grade.
  - GEOG-G 860 Ph.D. Thesis (arr. cr.) This course is eligible for a deferred grade.

## Institute of German Studies

College of Arts and Sciences

Departmental E-mail: [germanic@indiana.edu](mailto:germanic@indiana.edu)

**Departmental URL:** <http://germanic.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

## Curriculum

### Program Information

The Institute of German Studies provides graduate students with a flexible curriculum to pursue study and research in the society and cultural production of German-speaking Europe from 1740 to the present. Most work on this subject unfolds through consideration of diverse critical paradigms. Study in the Institute is linked closely, but not exclusively, to the master's degree in modern German culture in the Department of Germanic Studies and is also open to students from related disciplines (e.g., European Studies, History, Political Science, Philosophy, the Program in Cultural Studies, the Jewish Studies Program, and the School of Music). The Institute also offers a Ph.D. minor. Courses are taught by the faculty of the Department of Germanic Studies specializing in 1740 to the present and by instructors in related disciplines.

### Ph.D. Minor in German Studies

The Ph.D. minor in German studies is available to doctoral students in all departments except Germanic Studies; 15 credit hours of course work are required. Consult the director of the Institute for information regarding courses acceptable for the minor.

## Faculty

### Director

Associate Professor Johannes Türk\*

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Fritz Alwin Breithaupt\* (Germanic Studies, Cognitive Science), Michel Chaouli\* (Germanic Studies, Comparative Literature), Breon Mitchell\* (Emeritus, Germanic Studies, Comparative Literature), William W. Rasch\* (Emeritus, Germanic Studies), Alvin Rosenfeld\* (English, Jewish Studies), , Marc A. Weiner\* (Emeritus, Germanic Studies, Comparative Literature)

### Associate Professors

Michelle Facos\* (Fine Arts), Benjamin Robinson\* (Germanic Studies), Johannes Türk\* (Germanic Studies)

### Assistant Profesors

Irit Dekel\* (Germanic Studies, Jewish Studies), Günther Jikeli\* (Germanic Studies, Jewish Studies), Teresa Kovacs\* (Germanic Studies)

### Academic Advisor

Associate Professor Johannes Türk\*, Global and International Studies building, Rm 3127, (812) 855-1642

## Courses

The following, nonexclusive list contains examples of the kinds of courses that may be taken outside of the Department of Germanic Studies for credit in the Institute.

V605 Selected Topics in German Studies (2-4 cr.; 12 cr. max.)

V815 Individual Readings in German Studies (1-8 cr.) May be repeated for credit.

### Anthropology

E607 Selected Topics in German Studies (2-4 cr.; 12 cr. max.)

V815 Individual Readings in German Studies (1-8 cr.) May be repeated for credit.

### Comparative Literature

C504 Topics in World Criticism and Theory II (4 cr.)

C546 Sexuality and the Arts (4 cr.)

C555 Theory and Methods of Interarts Studies (4 cr.)

C602 Contemporary Theoretical Issues and Approaches (4 cr.)

C655 Topics in Interarts Studies ( 4 cr.)

**European Studies** W301 Modern European Politics and Society (3 cr.)

W302 Modern European Culture and National Identities (3 cr.)

### Film Studies

C590 Film and Society (4 cr.)

C693 Film Adaptations of Literature (4 cr.)

C790 Studies in Film and Literature ( 4 cr.)

C792 Film History and Theory ( 4 cr.)

### Fine Arts

A442 Twentieth-Century Art 1900-1924 (4 cr.)

A495 Readings and Research in Art History (1-4 cr.; 8 cr. max.) Topic: Twentieth-Century German Art.

### Germanic Studies

G503 Introduction to Theories and Methodologies in the Study of German Literature and Culture (3 cr.)

G563 German Culture Studies I (3 cr.)

G564 German Culture Studies II (3 cr.)

G575 Historical Study of German Literature III (3 cr.)

G577 Historical Study of German Literature IV (3 cr.)

G625 Literature and Culture: Special Topics (3 cr.)

G825 Seminar in German Literature (3-4 cr.)

### History

B366 Paris and Berlin in the 1920s: A Cultural History (3 cr.)

B378 History of Germany since 1648 II (3-3 cr.)

B393 German History: From Bismarck to Hitler (3 cr.)

H523 The Holocaust (3 cr.)

H620 Colloquium: Modern Western European History (4 cr.) Topic: Problems in Modern German History.

### History and Philosophy of Science

X567 Science in Germany: Nineteenth and Twentieth Centuries (3 cr.)

School of Music, Department of Musicology

M502 Composers (3 cr.) Topic: Wagner/Beethoven/ Strauss.

### Philosophy

P522 Topics in the History of Modern Philosophy (3 cr.)

P544 Selected Topics in History of Social and Political Philosophy (3 cr.)

### Political Science

Y657 Comparative Politics (3 cr.)

Religious Studies

R680 Religion and the Problems of Modernity (3 cr.)

### Sociology

S660 Advanced Topics (3 cr.) Topic: The Sociological Structures of the United States and Germany.

Additional courses are often drawn from the nonexclusive list of departments and programs given above. Consent of the director of the Institute and from the individual instructor of each course must be obtained to enroll.

## Germanic Studies

**College of Arts and Sciences**

**Departmental E-mail:** [germanic@indiana.edu](mailto:germanic@indiana.edu)

**Departmental URL:** <http://germanic.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Arts, Master of Arts for Teachers, and Doctor of Philosophy

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

#### Master's Degrees

##### Master of Arts Degree

Students may follow one of two different curricula in pursuit of the M.A. degree: Master of Arts in Germanic Studies and Master of Arts in Modern German Culture. Admission requirements are the same for both programs, and the official degree title for both options is the M.A. in Germanic Studies.

#### Admission Requirements

Near-native command of German and undergraduate major in the field or other evidence of adequate background. Deficiencies may be removed by course work or special examination.

#### Master's Project

Both the Master of Arts in Germanic Studies and the Master of Arts in Modern German Culture require successful completion of a master's project, which is intended to give students experience in carrying out a limited scholarly investigation to their fullest potential. The project is normally submitted after three or four semesters of study but may be submitted as early as the first year. It entails appropriate revision and oral defense of a research paper of 20 to 30 pages originally written for a graduate course in Germanic Studies. The paper should demonstrate command of expository English or German, competence in the use of bibliographic and research tools, ability to conceive and develop a scholarly project, and effective critical and analytical thinking.

It is recommended that students consult with appropriate faculty members regarding selection and revision of

the project paper. A three-person faculty committee evaluates each project and conducts an oral defense that examines the candidate's ability to present concisely the main argument(s) of the project, place the project in larger scholarly contexts, discuss sources and scholarly literature used, and respond effectively to committee members' questions and comments. Students have the option of enrolling in German G850 Master's Project for one credit so that the project's completion is reflected on their permanent academic record and transcripts.

#### Master of Arts in Germanic Studies

##### Course Requirements

A total of 30 credit hours, including one of G532, G548, G551, G558, G632, G635, G638, G639 or G640; one seminar or colloquium at Indiana University. At least 9 additional credit hours in Germanic studies and one Germanic Literature course numbered 500 or above. Up to 9 credit hours may be taken in other relevant programs and departments (history, comparative literature, etc.).

##### Language Requirement

Reading proficiency in an additional foreign language serving the candidate's major research interest.

##### Thesis

Not required.

#### Master of Arts in Modern German Culture

##### Course Requirements

A total of 30 credit hours of which at least 21 one must be and all 30 may be in German. Up to 9 credit hours may be taken in other relevant programs and departments (history, comparative literature, etc.).

##### Language Requirement

Reading proficiency in an additional foreign language, preferably French.

#### Master of Arts for Teachers Degree

##### Admission Requirements

20 credit hours of course work (or the equivalent) beyond first-year German.

##### Course Requirements

A total of 36 credit hours; at least 20 of these must be in Germanic Studies, including G500, two courses from G532, G548, G551, and G558; two literature or culture courses in German at the 500 level or above. Students must demonstrate proficiency in depth in German; contact the language coordinator in the department for information.

#### Doctor of Philosophy Degree

##### Admission Requirements

M.A. in German or equivalent. Students with a master's degree in a related discipline who have completed extensive graduate-level work in German may also apply.

##### Credit Transfer

Entering doctoral students may present up to 30 credit hours of previous graduate-level work towards the 90-hour minimum required for the Ph.D. degree, subject to

the regulations and approval of the University Graduate School.

### Language

Reading proficiency in an additional foreign language serving the candidate's major research interests.

### Other Requirements

Specific departmental course and credit-hour requirements for each of the three Ph.D. majors are outlined below.

### Examinations

A two-part written examination followed by an oral examination. The form, content, and scheduling of the separate examinations vary from major to major.

### Teaching

All doctoral students are required to complete at least one year of service as an associate instructor in Germanic Studies.

### Ph.D. in Germanic Linguistics and Philology

Total credit hours: 90

**Professional course** (3 cr.): G500

**Linguistics courses** (12-14 cr.):

- Four from the following: G532, G548, G551, G558, G632, G635, G638, G639, G640, G601 Introduction to Old English, G655 History of the English Language

**Seminars** (6-8 cr.) (two required at IU):

- G825 (3-4 cr.) or G835 (3-4 cr.)
- G825 (3-4 cr.) or G835 (3-4 cr.)

**Literature courses** (6 cr.):

- Two from any modern German literature or culture courses numbered 500 or above (including G825 with a modern topic).

**Dissertation** (up to 20 cr.)

**Outside Minor** (minimum 12 cr.)

### Ph.D. in Medieval and Early Modern German Literature and Culture

Total credit hours: 90

**Literature Courses** (15-16 credits):

- G571 German Lit. I (3 cr.)
- G573 German Lit. I (3 cr.)
- G636 Old Icelandic Literature; prerequisite G635 (3 cr.)
- G625 (with medieval topic) (3 cr.)
- G825 (with medieval topic) or another seminar with medieval topic (3-4 cr.)

**Required courses in Medieval Studies:** M500 Introduction to Medieval Studies or M600 Medieval Manuscripts (4 cr.)

**Required courses in Renaissance Studies:** R501 The Culture of the Renaissance or R502 Topics in Renaissance Civilization (4 cr.)

### Linguistic Courses

**(6-9 credits):**

- G638 Old High German (3 cr.)
- G640 Middle High German (3 cr.)

**One of the following is recommended:**

G532 History of Germ. Language; G635 Old Icelandic; G639 Old Saxon (3 cr.); G601 Old English (3 cr.) or G602 Middle English (3 cr.)

Total: 6-9 cr.

**Required courses:**

F501 Medieval French Literature I (3 cr.) or L409 Medieval Latin (4 cr.)

**Research credits** (up to 20 cr. of G875 or G885)

**Outside Minor** (minimum 12 cr.)

The interdepartmental outside minor should preferably be taken in Medieval Studies.

### Ph.D. in Modern German Literature and Culture

Total Credit hours: 90

**Professional course:** G500 (3 cr.)

**Seminars** (two required at IU) (8 cr.):

- G825 or G835 (3-4 cr.)
- G825 or G835 (3-4 cr.)

**Literature Courses** (9 cr.):

- Any three from: G571, G573, G575, G577 (may be repeated for credit, if different topic)

**Linguistic courses** (6 cr.):

- One from G532, G632, G635, G638, G639, or G640 (3 cr.)
- One from G540, G548, G551 or G558 (3 cr.)

**Dissertation** (up to 20 cr.)

**Outside minor** (at least 12 cr.)

**Outside Minors for the Ph.D.** All three Ph.D. program options in Germanic studies require the completion of an outside minor. The outside minor is selected in consultation with the graduate director or faculty advisor. Requirements for the outside minor are set by the outside minor department or program (i.e., not Germanic Studies). Please note that Dutch, Norwegian, or Yiddish may be selected by Ph.D. students in Germanic Studies as an outside minor. Some Ph.D. candidates in Germanic Studies complete the minor entirely outside the department, for example in cognitive science, French, European studies, or gender studies. Detailed information about minors offered by other departments and programs can be found elsewhere in this bulletin. Detailed below are sample minor programs.

1. Dutch: GER-N402, GER-N403, GER-N404, and GER-N508 or GER-N509.

2. Comparative Literature: four courses in Comparative Literature, including C501; fluent reading knowledge of at least one foreign language.

3. Cultural Studies: 4 courses for a minimum of 13 credits in courses approved for the Cultural Studies program,



including C601 and either C701 or C790. Students must officially declare the minor during the early phase of their Ph.D. studies by consulting with the director of the Cultural Studies program. Satisfactory performance on the qualifying examinations in the student's major department is also required.

4. English and Germanic philology: four courses, to include English G601 Introduction to Old English and at least one of the other older Germanic languages, i.e., German G632, G635, G638, G639, and G640. The remaining courses may be chosen from ENG G602 Introduction to Middle English, G655 History of the English Language, L710 Beowulf, L711 (Topic: Old English Literature), GER G532, G625 with appropriate topic, G636, G835 with appropriate topic, and any of the remaining older Germanic languages listed. Also offered is an Area Certificate in English and Germanic Philology, requiring four courses in addition to the four required for the minor. These may include any of the courses listed above, as well as courses in other departments that are relevant to the history and prehistory of the Germanic languages, and to early Germanic literature and culture.

5. Linguistics: 12 credits in linguistics or related courses, with a grade point average of 3.0 (B) or higher. The specific program for satisfying this requirement should be developed in consultation with the linguistics outside minor advisor.

6. Norwegian: three semesters of Norwegian language (K502, K503 and K504) as well as three additional literature or culture courses (9 credit hours), taught in English, chosen from GER-K506, GER-K507 (both may be repeated), CEUS-R509 (approved topic: Modern Scandinavia and the Baltic States), or GER-G 815, GER-G605 (with appropriate topics).

7. Yiddish: Requirements include 12 credits, consisting of GER Y502, GER Y503, GER Y504, 3 remaining credits to be chosen from GER Y505, GER Y506, GER Y815, and other courses focusing on non- language Yiddish Topics.

#### **Ph.D. Minor in Germanic Studies**

Doctoral students from other departments desiring to minor in Germanic studies will choose one of the following:

1. German: 12 credit hours, including at least two courses numbered 500 or higher.

2. Netherlandic: GER-N402, GER-N403, GER- N404, and GER-N508 or GER-N509.

3. Norwegian: three semesters of Norwegian language (K502, K503 and K504) as well as three additional literature or culture courses (9 credit hours), taught in English, chosen from GER-K506, GER-K507 (both may be repeated), CEUS-R509 (approved topic: Modern Scandinavia and the Baltic States), or GER-G 815, GER-G605 (with appropriate topics).

4. Yiddish: Requirements include 12 credits, consisting of GER Y502, GER Y503, GER Y504, 3 remaining credits to be chosen from GER Y505, GER Y506, GER Y815, and other courses focusing on non- language Yiddish Topics.

#### **Ph.D. Minor in History of German Thought**

The German intellectual tradition stretching from Luther's Protestant Reformation to the present is among the most fertile and consequential in Western thought and has

had a profound impact on a great variety of intellectual endeavors, among them theology, ontology, ethics, aesthetics, epistemology, the philosophy of science (especially of biology), political theory, psychoanalysis, the philosophy of history, and cultural theory.

Jointly administered by the Departments of Germanic Studies and Philosophy, the minor requires a minimum of four courses (12 credit hours) at the 500 level or above from the approved list of courses or courses approved by either of the Directors of Graduate Studies. At least one course each must be taken in Germanic Studies and Philosophy. At least three courses must be taken in these two departments, but the fourth course may come from another department.

#### **Faculty**

##### **Chairperson**

Associate Professor Benjamin Butt Robinson\*

##### **Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

##### **Provost Professors**

Fritz Breithaupt\*

##### **Professors**

Michel Chaouli\*, Tracy Alan Hall\*, Dov- Ber Boris Kerler

##### **Associate Professors**

Günther Jikeli, Benjamin Butt Robinson\*, Christopher D. Sapp, Johannes Türk\*

##### **Assistant Professor**

Irit Dekel, Teresa Kovacs

##### **Clinical Associate Professor**

Susanne Even\*

##### **Senior Lecturers**

Esther Ham (Dutch), Nikole Langjahr (German), Gergana May (Norwegian)

##### **Lecturers**

Lane Sorensen (German)

##### **Emeriti**

Theodore M. Andersson\*, Catherine Clarke Fraser\*, Kari Ellen Gade\*, Ingeborg Hoesterey\* (Comparative Literature), Albrecht Holschuh\*, Breon Mitchell\* (Comparative Literature), William Rasch\*, William Shetter\*, Stephen Wailes,\* Marc Weiner\*

##### **Adjunct Professors**

Kathleen Bardovi-Harlig\* (Second Language Studies), Laurent Pierre Dekydtspotter\* (French & Italian, Second Language Studies), Robert Dennis Fulk\* (Emeritus, English), Christoph Irmscher\* (English), Joshua Kates\* (English), Eyal Peretz\* (Comparative Literature), Mark Roseman\* (History), William Scheuerman\* (Political Science, European Studies), Rex A. Sprouse\* (Second Language Studies)

## Adjunct Associate Professors

Sander Gliboff\* (History and Philosophy of Science),  
Michelle Moyd\* (History), Julia Roos\* (History)

## Director of Graduate Studies

Professor Christopher D. Sapp\*, Global and International  
Studies Building, Rm 3109

## Courses

### Courses for Graduate Reading Knowledge

**GER-G 491 Elementary German for Graduate Students**  
(3 cr.) no grad. cr

**GER-G 492 Readings in German for Graduate Students** (3 cr.) no grad. cr

### Courses in Germanic Linguistics

**GER-G 532 History of the German Language (3 cr.)**

Development from Primitive Germanic to New High German; German dialect geography. German as a member of the Germanic family and of the European linguistic area.

**GER-G 540 Acquisition of German as a First and Second-Language (3 cr.)** P: Knowledge of German; graduate standing or permission of instructor. Introduction to recent generativist scholarship on acquisition of German as a first and second-language. Consideration of broader theoretical issues. No prior knowledge of linguistics assumed.

**GER-G 548 German Phonetics and Phonology (3 cr.)** Introduction to phonetics and phonology of modern German with emphasis on description, analysis, and theory. Relevance of German data to issues in phonological theory. May be repeated.

**GER-G 551 Structure of Modern German (3 cr.)** Structural problems in the grammar of Modern Standard German, investigated by means of various current methodological approaches.

**GER-G 558 Principles of German Morphology (3 cr.)** In-depth study of the principles underlying word formation (morphology) in German. Comparative study of inflection, derivation, and compounding in German and English. Relevance of German data to morphological theory. May be repeated.

**GER-G 632 Gothic (3 cr.)** Transition from Indo-European to Germanic. History and development of Germanic dialects, with emphasis on prehistory of English and German. Comparative and descriptive analysis of Gothic phonology, morphology, and syntax. May be repeated.

**GER-G 635 Old Icelandic (3 cr.)** Descriptive grammar. Survey of literature and extensive reading of prose and poetry. History of Scandinavian in comparison with other Germanic languages.

**GER-G 638 Old High German (3 cr.)** Descriptive and comparative analysis of Old High German texts, with their dialect features. May be repeated.

**GER-G 639 Old Saxon (3 cr.)** Study of the Old Saxon (Old Low German) language. Readings from the Heliand and brief examination of other OS documents. May be repeated.

**GER-G 640 Middle High German (3 cr.)** Introduction to Middle High German language, literature, and culture. Translation, linguistic analysis, and close reading of selections from major texts of the period 1170-1220.

**GER-G 835 Seminar in Germanic Linguistics (3-4 cr.)**  
May be repeated.

**GER-G 885 Research in Germanic Linguistics (arr. cr.)**

\*\*These courses are eligible for a deferred grade.

### Courses in Germanic Literature and Culture

**GER-G 505 New Literary Theory and the German Text (3 cr.)** P: G503. Survey of literary theory currently used in Germanic studies; differences between theory in German and in American Germanistik. Areas such as reception theory, Frankfurt School, structuralism, poststructuralism, psychoanalytic criticism, feminist criticism, New Historicism.

**GER-G 563 German Culture Studies I (3 cr.)** G363, G464, or HIST B377-B378. The formation of cultural traditions in the German-speaking countries prior to the twentieth century.

**GER-G 564 German Culture Studies II (3 cr.)** G363, G464, or HIST B378. Culture of the German-speaking countries in the twentieth century.

**GER-G 571 Historical Study of German Literature I (3 cr.)** Historical treatment of a literary topic involving substantial developments within the time period before 1600. Topics range from individual genres, types, or movements; to themes or ideas; to sociopolitical contexts of literature or its relationships to other art forms. May be repeated with different topic.

**GER-G 573 Historical Study of German Literature II (3 cr.)** Historical treatment of a literary topic involving substantial developments within the time period between 1600 and 1800. Topics range from individual genres, types, or movements; to themes or ideas; to sociopolitical contexts of literature or its relationships to other art forms. May be repeated with different topic.

**GER-G 575 Historical Study of German Literature III (3 cr.)** Historical treatment of a literary topic involving substantial developments within the time period between 1800 and 1900. Topics range from individual genres, types, or movements; to themes or ideas; to sociopolitical contexts of literature or its relationships to other art forms. May be repeated with different topic.

**GER-G 577 Historical Study of German Literature IV (3 cr.)** Historical treatment of a literary topic involving substantial developments within the time period from 1900 to the present. Topics range from individual genres, types, or movements; to themes or ideas; to sociopolitical contexts of literature or its relationships to other art forms. May be repeated with different topic.

**GER-G 605 Special Topics in Teaching German (3 cr.)** P: Two years of college-level teaching experience. Advanced course in the theory and practice of teaching college-level German. Topics include task design for teaching different text types, language assessment and effective test development, and the role of technology

in foreign language education. May be repeated with different topic.

**GER-G 620 Representations of Gender and Sexuality in Modern European Culture (3 cr.)** Introduction to the ways in which modern European identities have been shaped by notions of gender and sexuality, attention to the interplay between gender and race, religion, and class. Covers different media and different historical moments. Taught in English. Repeatable for a max. of 8 credits with a different topic.

**GER-G 623 Intellectual History and Philosophical Traditions (3 cr.)** Special topics on any aspect of the German-language philosophical tradition and/or intellectual history. May be repeated with a different topic.

**GER-G 625 Literature and Culture: Special Topics (3 cr.)** Special topics on any aspect of the German language, literature, and/or cultural history. May be repeated with a different topic.

**GER-G 627 Film and Media: Special Topics (3 cr.)** Special topics on any aspect of German-language film, media, interarts, and/or visual culture. May be repeated with a different topic.

**GER-G 636 Old Icelandic Literature (3 cr.)** P: G635 or equivalent. Medieval Icelandic poetic and prose literary texts; history of the literature. Some consideration of medieval Norwegian, Swedish, and Danish literature. May be repeated.

**GER-G 815 Individual Readings (1-3 cr.)** Guided readings in Germanic literature, linguistics, and culture. May be repeated.

**GER-G 820 Research Tutorial (1-3 cr.)** Work under faculty supervision that results in a scholarly paper, lecture, translation, bibliography, syllabus, or comparable product. May be repeated for credit once with a different topic.

**GER-G 825 Seminar in German Literature (3-4 cr.)** May be repeated.

**GER-G 850 Master's Project (1 cr.)** Revision and oral defense of a substantial research paper originally written for a graduate course in Germanic Studies.

**GER-G 875 Research in German Literature (arr. cr.)**

\*\*These courses are eligible for a deferred grade. May be repeated.

**GER-V 605 Selected Topics in German Studies (2-4-12 cr.)**

**GER-V 815 Individual Readings in German Studies (1-8 cr.)** May be repeated.

### Courses in Netherlandic

**GER-N 401 Intensive Dutch I (3 cr.)** Development of speaking ability, with stress on pronunciation, leading to fluency on restricted topics. Introduction to grammar. Reading of annotated stories.

**GER-N 402 Intensive Dutch II (3 cr.)** P: N401 or consent of instructor. Completion of grammatical study begun in N401; continued stress on speaking Dutch on selected

topics; rapid expansion of reading ability using literary and cultural materials.

**GER-N 403 Dutch Reading, Composition, and Conversation I (3 cr.)** P: N402 or consent of instructor. Development of oral fluency; attention to idiom. Further grammatical study; attention to formal writing style. Readings in Dutch literature and culture.

**GER-N 404 Dutch Reading, Composition, and Conversation II (3 cr.)** P: N403 or consent of instructor. Further development of style and idiom in speaking and writing. Reading of novels. Oral and written practice on topics of contemporary Dutch life.

**GER-N 450 The Golden Age of Dutch Culture (3 cr.)** II Semester. Rise of the Dutch Republic; impact on technology, shipping, global commerce, and finance. Politics, social developments, religion, ideas, and culture of the Dutch Golden Age. Vermeer, Spinoza, Grotius, and other artists and writers. Special attention to Rembrandt, and to what can be learned about his times through his work. Note: Course not currently offered.

**GER-N 505 Advanced Dutch I (3 cr.)** P: N404. Prepares students for reading of a variety of texts, from literature, magazine articles, and other culture based texts. In oral and written responses to the readings, it is expected that students will demonstrate an awareness of, and sensibility to Dutch language and culture, and express their ideas in a manner consistent with advanced language work. Conducted in Dutch.

**GER-N 506 Advanced Dutch II (3 cr.)** P: N505. Introduces students to different levels of style and expression and to written argumentation in Dutch. Texts also include various literary genres and form the basis of in-class discussion and for exercises designed to develop oral and written fluency. Conducted in Dutch.

**GER-N 508 The Golden Age of Dutch Culture (3 cr.)** Rise of the Dutch Republic; impact on technology, shipping, global commerce, and finance. Politics, social developments, religion, ideas, and culture of the Dutch Golden Age. Vermeer, Spinoza, Grotius, and other artists and writers. Conducted in English. Credit given for only one of N508 or N450.

**GER-N 509 Topics in Dutch Literature (3 cr.)** Topics dealing with literature in Dutch. Readings in English translation of novels, plays, and poetry that reflect a specific topic chosen by the instructor. May be repeated for a maximum of 6 credit hours.

### Courses in Norwegian

**GER-K 501 Beginning Norwegian I (3 cr.)** Development of listening comprehension, speaking, reading, and writing skills in a cultural context. Introduction to grammar.

**GER-K 502 Beginning Norwegian II (3 cr.)** P: K501 with the grade of C– or higher or equivalent. Further development of listening comprehension, speaking, reading and writing skills. Introduction to Norwegian literature and culture. Review of grammar and study of new grammatical topics.

**GER-K 503 Intermediate Norwegian I (3 cr.)** P: K502 with the grade of C– or higher or equivalent. Further development of oral and written command and language structures. Reading and discussion of literary and non-

literary texts in a cultural context. Review of grammar and study of non-grammatical topics.

**GER-K 504 Intermediate Norwegian II (3 cr.)** P: K503 with the grade of C– or higher or equivalent. Advanced reading proficiency, systematic vocabulary building, composition, and discussion of literary and non-literary texts in cultural and historical contexts. Review of grammar.

### Courses in Scandinavian

**GER-K 506 Topics in Scandinavian Culture (3 cr.)** Topics dealing with language, literature, and culture in Norway and other Scandinavian countries in the more recent historical periods. Discussions located within a comparative overview of political, economic, and social realms of the Nordic nations. Lectures in English. May be repeated for a maximum of 6 credit hours.

**GER-K 507 Topics in Scandinavian Literature (3 cr.)** Topics dealing with literature in Norway and other Scandinavian countries. Discussions incorporate literary criticism, biography, and adaptations on film and stage in Nordic nations. Lectures in English. May be repeated for a maximum of 6 credit hours.

**GER-K 591 Scandinavian Languages for Researchers (3 cr.)** Introduction to the structure of Swedish, Norwegian, and Danish necessary for reading, followed by critical reading in texts in the area of Scandinavian studies.

### Courses in Swedish

**GER-S 501 Beginning Swedish I (3 cr.)** Development of communicative skills: listening comprehension, speaking, reading and writing in a cultural context. Introduction to grammar and vocabulary.

**GER-S 502 Beginning Swedish II (3 cr.)** P: S501 or equivalent. Further development of listening comprehension, speaking, reading and writing skills in Swedish. Introduction to Swedish literature and culture. Review of grammar and introduction to new grammatical topics.

### Courses in Yiddish

**GER-Y 501 Beginning Yiddish I (3 cr.)** Introduction to the Yiddish language and selected aspects of Yiddish-language culture. Development of listening comprehension, simple speaking proficiency, controlled reading and writing skills.

**GER-Y 502 Beginning Yiddish II (3 cr.)** P: Y501 with grade of C– or higher or equivalent. Introduction to the Yiddish language and selected aspects of Yiddish-language culture. Development of listening comprehension, simple speaking proficiency, controlled reading and writing skills.

**GER-Y 503 Intermediate Yiddish I (3 cr.)** P: Y502 or consent of instructor. Development of speaking, reading, writing, and listening skills. Review of basic grammar and study of new grammatical topics. Reading of short fictional texts and other writings on Jewish culture. Taught in alternate years.

**GER-Y 504 Intermediate Yiddish II (3 cr.)** P: Y503 or consent of instructor. Continuing development of active and passive skills. Additional new grammar concepts. Emphasis on development of reading skills and cultural knowledge through literary and journalistic texts, including

texts in nonstandardized orthographies. Taught in alternate years.

**GER-Y 505 Topics in Yiddish Literature (3 cr.)**

**GER-Y 506 Topics in Yiddish Literature (3 cr.)**

**GER-Y 815 Individual Readings in Yiddish Studies: Language, Literature, and Culture (1-4 cr.)** Guided readings. May be repeated.

### General Courses

**GER-G 400 Deutsch: Oberstufe (3 cr.)**

**GER-G 403 Deutsche Literatur: Mittelalter bis Romantik (3 cr.)**

**GER-G 404 Deutsche Literatur seit der Romantik (3 cr.)**

**GER-G 500 College German Teaching (3 cr.)** Required of associate instructors in their first year of teaching. An overview of teaching methodologies, their underlying theories, and their practical application in college-level German courses.

**GER-G 503 Introduction to Theories and Methodologies in the Study of German Literature and Culture (3 cr.)** Survey of critical approaches to the study of German literature and culture, with an emphasis on current theories and methodologies. Practical exploration of a selection of approaches through the discussion of selected literary or cultural materials.

## History

### College of Arts and Sciences

**Departmental E-mail:** gradsec@indiana.edu

**Departmental URL:** <https://history.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Arts, Master of Arts for Teachers, a dual M.A. in Jewish History and Jewish Studies, dual Master of Arts and Master of Library Science (jointly with the Department of Information and Library Science), and Doctor of Philosophy

#### Program Information

The graduate program in history at Indiana University includes formal course work and opportunities for independent study in nearly all recognized fields, both chronological and geographical. Moreover, the department is strongly committed to interdisciplinary programs, and it works closely with area studies programs, journals, and historical organizations. The graduate program is designed to help students in the development of their knowledge and of their critical and analytical skills. Courses and programs in the Department of History prepare students for work as professional historians in a variety of settings: in public history, editing, librarianship, and government service, as well as in historical research and teaching at all levels.



### Special Departmental Requirements

(See also general University Graduate School requirements.)

### Master of Arts Degree

The department offers several options:

Master of Arts with

- the intent of pursuing the Ph.D. in the following fields of history: African, Ancient, British, Early Modern European, Asian, East European, Latin American, Medieval European, Middle Eastern, Modern European, Russian, United States, and World, as well as thematic major fields: African Diaspora, Jewish History, and History of Gender and Sexuality.

Terminal M.A. tracks in

- Ancient History and Language Acquisition, Russian or East European History, United States History, and a dual M.A. in Jewish History and Jewish Studies.

### Admission Requirements

(1) Bachelor's degree from a recognized institution, an overall undergraduate B (3.0) average, a superior record in history, and preferably 24 or more undergraduate credit hours in history; (2) three letters of recommendation; (3) a personal statement concerning intellectual interests and professional aspirations; and (4) a sample of written work, such as a term paper, thesis, or any other piece of writing that indicates ability to communicate well in nonfiction prose. Ideally, a writing sample should also demonstrate the applicant's ability to conduct historical research. The History department discourages applicants who wish to pursue terminal M.A. degrees except in the case of the M.A./M.L.S. program, and students wishing to pursue one of the department's terminal M.A. tracks: Ancient History and Language Acquisition, dual M.A. in Jewish History and Jewish Studies, Russian or East European History, United States History.

### Grades

No grade below B (3.0) in history courses will be counted toward this degree.

### Course Requirements

The content of individual History courses frequently encompasses more than one major field. Students work closely with their faculty advisors to choose courses that fulfill degree requirements.

A total of 30 credit hours; at least 20 of these credit hours must be in the Department of History. Students are required to complete H601 and at least one seminar and two colloquia; the remaining credit hours in history must be completed in graduate colloquia, seminars, or readings courses. When colloquia and seminars are unavailable, a student may substitute the readings course, H575. Graduate students will be allowed to receive credit for undergraduate courses only in special cases (such as in the study of fields not commonly available at the undergraduate level, or in small fields).

For the Masters in Ancient History and Language Acquisition track: 4 of the required 20 credit hours in the

Department of History may come from ancient language courses that are approved by their advisor in History.

### Foreign Language Requirement

Reading proficiency in one of the following languages: Arabic, Chinese, French, German, Hungarian, ancient Greek, Italian, Japanese, Latin, Polish, Portuguese, Romanian, Russian, Serbo-Croatian, Bosnian, Spanish, Turkish, or another language appropriate to the student's program of study, if approved by the University Graduate School.

Students may demonstrate proficiency by any of the methods normally sanctioned by the University Graduate School or by passing a reading examination prepared by members of the history department faculty. The examination includes two texts of approximately 400 words each, one drawn from primary historical sources and the other typically drawn from historiographical sources. A student will be expected to translate the first text and answer critical questions about the second.

For the Masters in Ancient History and Language Acquisition track: By the end of their second year, students must demonstrate proficiency in an ancient language of the student's choice. Students may demonstrate proficiency by any of the methods normally sanctioned by the University Graduate School, or by passing a translation examination prepared by members of the History Department faculty.

### Field Review

M.A. candidates wishing to enter the Ph.D. program and those terminating their program with the master's degree must be recommended for the M.A. degree by the appropriate field committee. Graduate students who enter with an M.A. from another institution will be reviewed a year after pursuing graduate work at IU.

### Dual M.A. in Jewish Studies and History

The combined program will have a total of 52 credit hours, instead of the 62 hours required to attain the two degrees separately. Students will take 5 courses counting towards Jewish Studies and 5 courses counting towards History, as well as 12 credits of electives.

### Admission Requirements

Bachelor's degree with evidence of superior ability and completion of the Graduate Record Examination. Second-year proficiency of Hebrew or another relevant language is desirable but not a requirement for admission. Students will have to meet admission requirements in the Department of History (refer to the University Graduate School Bulletin).

### Course Requirements

20 credit hours in Jewish Studies, including JSTU-H 520 (4 cr.) and 16 credits (at least four courses) taught by Jewish Studies faculty; 20 credit hours in History, including HIST-H 601 and 16 credits of course work in the Department of History, with a minimum of one seminar and two colloquia; 12 credits (at least three courses) of electives. Courses taken to fulfill requirements in the Department of History can include courses on Jewish history but cannot be identical with the courses counted towards fulfillment of the Jewish Studies requirements.



## Grades

Only History courses that receive a grade of B or higher and Jewish Studies courses that receive a grade of B- or higher will count towards fulfillment of the course requirements. Students must retain an overall average in courses fulfilling the course requirements of B (3.0) or higher.

## Language Requirement

Second-year reading proficiency in one language relevant to the student's research interest, normally Modern Hebrew, Yiddish, or Biblical Hebrew, is required for completion of the degree. Language courses in a language relevant for the student's research interest, normally Modern Hebrew, Yiddish, or Biblical Hebrew, can be counted to fulfill the elective credit requirement.

## M.A. Thesis and History Field Review

To complete the Jewish Studies component of the dual M.A., students will write an M.A. thesis (not to exceed 40 pages or 12,000 words). Students will register for 3 credits under JSTU-J 699 and will complete an oral examination on the thesis by a committee of three faculty members, at least two of whom must be Jewish Studies faculty. In order to complete the History component of the M.A., students will undergo a field review in the Department of History, for which they will submit two papers written for a History course, at least one of which was written in a seminar. Field review papers may not be substantially similar to the thesis.

## Dual Master of Arts and Master of Library Science Degrees

Study for these two degrees can be combined for a total of 51 credit hours rather than the 66 credit hours required for the two degrees taken separately. Students take 21-26 credit hours in history and 30 credit hours of library science. For the history credit hours, at least 21 must be in the Department of History; the remaining 5 are electives that may be fulfilled with further history courses (for a total of 26 history credits) or with library science courses (for a total of 21 history credits), including those counting for requirements in the library science program. Students are required to complete H601 and at least one seminar and two colloquia. Graduate students will be allowed to receive credit for undergraduate courses only in special cases (such as in the study of fields not commonly available at the undergraduate level, or in small fields). For specific library science requirements, see the entry for the Department of Information and Library Science in the Indiana University Graduate Bulletin. Admission to each of the two areas of study is approved separately on the same basis as for other applicants not in the dual program.

## Foreign Language Requirement

Reading proficiency in one of the following languages: Arabic, Chinese, French, German, Hungarian, ancient Greek, Italian, Japanese, Latin, Polish, Portuguese, Romanian, Russian, Serbo-Croatian, Bosnian, Spanish, Turkish, or another language appropriate to the student's program of study, if approved by the University Graduate School. Students may demonstrate proficiency by any of the methods normally sanctioned by the University Graduate School or by passing a reading examination prepared by members of the history department faculty.

The examination includes two texts of approximately 400 words each, one drawn from primary historical sources and the other typically drawn from historiographical sources. A student will be expected to translate the first text and answer critical questions about the second.

## Doctor of Philosophy Degree Admission Requirements

(1) Completion of the M.A. degree at Indiana University or another recognized institution, (2) a superior record in history, (3) certification in at least one foreign language, and (4) review and approval by a field committee consisting of faculty in the student's major field. For students with an M.A. degree from Indiana University, this review must take place by the end of a student's third semester of full-time graduate study; for other students, this review is done by a subcommittee prior to admission. For those with M.A. degrees from another institution, a writing sample, a personal statement and three letters of recommendation are required.

## Grades

No grade below B (3.0) in history courses will be counted toward this degree.

## Course Requirements

The content of individual History courses frequently encompasses more than one major or minor field. Students work closely with their faculty advisors to choose courses that fulfill degree requirements and prepare them for qualifying examinations.

The minimum course requirements for the Ph.D. degree are six colloquia (courses H600-H699) distributed in two or more fields, two seminars (courses H700-H799) taught by different instructors, one of which must be in the major field; H601 Introduction to the Professional Study of History during the first semester at IU; H602 The Historical Profession during the second semester at IU, and courses to complete the outside minor. Doctoral students are also required to take one 3 credit course from the list of options below. The list was developed with the help of doctoral alumni and is designed to reflect the kinds of competencies history PhDs use in both academic and non-academic employment.

- H585 History and the Digital World
- ILS-Z657 Introduction to Digital Humanities
- ILS-Z586: Digital Curation
- ILS-Z639: Social Media Mining
- LING-L545: Computation and Linguistic Analysis
- MSCH-J502: Data Analysis for Journalists
- H697 History of Collections and Museums
- H542 Public History
- Folk F730 FOLK-F 730 Museums and Material Culture
- Folk F731 Curatorship
- GEOG-G440 Social & Historical GIS
- SPEA Y525 Museum Management
- SPEA Y506 Curating in Galleries and Museums
- HIST-H 580 The Teaching of College History
- HIST-H 591 Teaching World History
- HIST-H 593 Teaching United States History
- EDUC-C 565 Introduction to College and University Administration

- EDUC-U 546 Diverse Students on the College Campus
- EDUC-U 548 Student Development Theory and Research

This requirement can also be satisfied by serving two years as an editorial assistant at the American Historical Review, Journal of American History, or Indiana Magazine of History. 3 hours of course credit will be applied in one semester by registering for H542 Practicum in Public History.

When colloquia and seminars are unavailable, a student may substitute the readings course, H575. For those students transferring M.A. credits, a minimum of four colloquia and one seminar must be completed on the IU Bloomington campus. Students may take dissertation credits (H899) to fulfill the 90 credit hours required by the University Graduate School to complete the Ph.D. Students enrolled in the dual concentration program in cultural history must complete H680 and H780 in addition to the requirements listed above.

### Foreign Language Requirement

The number and type of languages required will be determined by the student's major field of study. All students, regardless of field, must demonstrate proficiency in at least one foreign language. Several fields require students to demonstrate proficiency in additional languages; students should consult their advisors or the appropriate field chair for guidance. Students may demonstrate proficiency in the following languages: Arabic, Chinese, French, German, Hungarian, ancient Greek, Italian, Japanese, Latin, Polish, Portuguese, Romanian, Russian, Serbo-Croatian, Bosnian, Spanish, Turkish, or others appropriate to the student's program of study, if approved by the University Graduate School. Proficiency may be demonstrated by the means indicated under the heading "Foreign Language Requirement" in the section on the M.A. degree.

**Field Review:** Graduate students who enter with an M.A. from another institution will be reviewed after completion of the first year of graduate work at IU. The student will at the end of her/his first year at IU present two papers, one from a seminar, and at least one of them written at IU, to the field committee or advisory committee. The field or advisory committee will review the student's papers and overall record, meet with the student to discuss past performance and future plans, and recommend whether the student should be invited to continue in the Ph.D. program. (The department anticipates that the answer will be "yes" in almost all cases).

**Fields:** A student selects two historical fields--a major and minor--from the following list. Alternatively, students may elect to pursue the dual concentrations in Cultural History and one of the major fields listed below; students enrolled in this program do not complete an inside minor. As stated above, students may substitute a thematic field tailored to her or his individual interests for the inside minor field.

### Geographic Major Fields:

- Africa
- Asia
- Middle East
- Early Modern Europe (1350-1800)

- Russia
- United States
- Eastern Europe
- Ancient
- Britain
- Latin America
- Medieval Europe (200-1450)
- Modern Europe (1750 to the present)

### Thematic Major Fields:

- African Diaspora History
- History of Gender & Sexuality
- Jewish History
- Cultural History- (available for double major)

### Thematic Minors:

- Family History
- World History
- Cultural History
- History of Medicine
- History of Philanthropy
- African Diaspora History
- History of Gender & Sexuality
- Jewish History
- Historical Teaching & Practice

The major field is central to a student's Ph.D. work. His or her advisor is drawn from that field. The student must meet the field's language requirements and, ultimately, pass qualifying examinations constructed by the field.

Colloquia, Seminars, Pedagogy Courses, and Reading Courses: The emphasis in graduate work, particularly as the student embarks on the Ph.D. program, is placed on colloquia, seminars, and other graduate level courses. A colloquium covers a broad sweep of the historiography of one of the seventeen Ph.D. fields. It establishes a dialogue between the student and the instructor on the range and types of historical problems in this field. Assignments may include short papers or reports on specific aspects of the bibliography in the field, but normally a colloquium does not entail examinations or research papers. A seminar brings the student into direct contact with the tools of research and the writing of monographic history. Depth is stressed, and normally the student will prepare a research paper based on primary as well as secondary sources. Pedagogy courses (Teaching College History, Teaching World History, and Teaching U.S History) introduce students to the scholarship of teaching and learning and prepare students to teach at the college or university level. While pedagogy courses are not required for the Ph. D. degree, students are advised to complete at least one. Applicants for the Future Faculty Teaching Fellowship offered by the University Graduate School must have completed a pedagogy course; the History department gives preference to applicants who have completed a pedagogy course when it hires advanced graduate students to teach summer courses. Last but not least, students who have completed at least one pedagogy course will be better prepared for the academic job market.

Graduate students are strongly encouraged to take colloquia, seminars, and pedagogy courses whenever possible. When colloquia and seminars are unavailable,

a student may substitute the readings course, H575. In order to set up such an independent class, a student should enter into an explicit agreement with a faculty member about reading, written assignments and total credits for course work. That agreement must be filed with the Graduate Secretary at the start of the semester. Graduate students may receive History credit for undergraduate courses, or graduate courses from other departments/programs, only in special cases (such as in the study of fields not commonly available at the undergraduate level, or in small fields).

**Advisory Committee:** At least six months prior to the qualifying exam, a student, in consultation with her/his advisor, should form an Advisory Committee whose purpose is to help her or him prepare for qualifying examinations in both the major and minor fields and to administer the qualifying examination. Each field has its own requirements regarding the composition of the advisory committee which may be found on the History Department's webpages in the Student Portal. Before registering for the qualifying examination, a "Nomination of Advisory Committee" form must be completed electronically and approved by the committee members, the Director of Graduate Studies, and by the Graduate Division of the College of Arts and Sciences. The Graduate Secretary initiates this electronic approval process.

**Thematic Minor:** Students may substitute an individually tailored thematic field with the approval of the advisory committee and the Director of Graduate Studies for the inside minor field. An individually designed thematic field cannot duplicate other fields, and it must involve substantial work outside the major field. At least two faculty members must represent the thematic minor at the student's qualifying examinations.

### Qualifying Examination

(1) A rigorous oral examination of no longer than three hours will be required. The purpose of the examination is to demonstrate general command of the major and minor fields of study. The examination should assess students' scholarly preparation to teach courses in their fields through the demonstration of the ability to discuss key issues and problems in these areas. At least two representatives of the student's major field and at least one representative of his/her inside minor field must be present at the examination. The faculty representative for the student's outside minor has the option of participating or waiving participation. Students enrolled in the dual concentration in a time/place field and cultural history should have at least two representatives from the time/place field and two from the cultural history field on their examination committees. (2) There will be a public defense (open to all faculty and graduate students) of the student's dissertation prospectus, which the student's exam committee will preside over. The defense can take place as early as one week, but no later than six months, after the student passes the oral examination. Because the prospectus defense is meant to be an open forum, providing feedback from colleagues as well as the exam committee, then these defenses should normally be held during the academic year (fall and spring semesters) when the majority of faculty and students are available to participate. The prospectus will be distributed at least one week in advance of the defense. It should be

substantial and should take the form of a grant proposal. It should explain the potential significance of the proposed dissertation project and place it in historiographical context. Students must receive passing grades on both parts of the examination in order to advance to Ph.D. candidacy. The student's examination committee grades both parts of the examination.

### Termination of Enrollment in the Doctoral Program

If a doctoral student fails the oral qualifying examination two times, falls below a 3.0 (B) grade point average, fails to meet the language requirement by the time 30 credit hours of post-M.A. credit have been earned, or fails to complete the oral qualifying examinations by the end of the approved length of time, the director of graduate studies, in consultation with the advisory committee, can initiate steps to terminate the student's enrollment in the program. The student, however, may make a formal appeal to be given a third chance to pass the qualifying examinations or to be given additional time to raise the grade point average or to complete the qualifying examination. If the appeal is denied, the director of graduate studies will recommend to the deans of the College of Arts & Sciences and the University Graduate School that the student's enrollment in the doctoral program be terminated.

### Final Examination

Oral defense of dissertation.

### Ph.D. Minor in History

Students in other departments may minor in history by completing, with a grade point average no lower than B (3.0), at least 12 credit hours of course work in history, including one colloquium. When colloquia and seminars are unavailable, a student may substitute the readings course, H575. No more than 6 credit hours of work transferred from another university may be applied toward this requirement, and such credit must be approved by the director of graduate studies in the Department of History.

Upon completion of the course work, the student should ask the director of graduate studies to attest to the successful completion of the outside minor.

Further information regarding departmental regulations governing advanced degree programs may be found in *A Guide to Graduate Studies in History*, available on the department's graduate Web page: [https://history.indiana.edu/student\\_portal/index.html](https://history.indiana.edu/student_portal/index.html).

### Faculty

#### Chairperson

Professor Michael McGerr\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Distinguished Professors

Judith A. Allen\*, John Edward Bodnar\* (Emeritus), Jeffrey L. Gould\*, Edward Grant\* (Emeritus, History and Philosophy of Science), James C. Riley\* (Emeritus,

College of Arts and Sciences, Graduate School), Mark Roseman\*, David P. Thelen\* (Emeritus)

### **Robert F. Byrnes Professor**

Wendy Gamber\*

### **Ruth Halls Professors**

Phyllis Martin\* (Emerita)

Michelle Moyd\*

Amrita Myers\*

Jakobi Williams\*

### **Donald F. Carmony Chair**

Eric T. Sandweiss\*

### **Pat M. Glazer Chair**

Mark Roseman\*

### **Mendel Chair in Latin American History**

Danny James\*

### **John W. Hill Professor**

Maria Bucur-Deckard\*

### **Thomas and Kathryn Miller Professor**

Eric Sandweiss\*

### **Rudy Professor**

Jeffrey Gould\*

### **Sally Reahard Professor**

Sarah Knott\*

### **Paul V. McNutt Professor**

Michael McGerr\*

### **Walter Professor of History**

Judith Allen\*

### **Professors**

Judith Allen\*, John Edward Bodnar\* (Emeritus), George E. Brooks\* (Emeritus), Maria Bucur-Deckard\*, Nick Barry Cullather\*, Deborah Deliyannis\*, Nancy Demand\* (Emerita), James Diehl\* (Emeritus), Michael Sinclair Dodson\*, Ellen Dwyer\* (Emerita, Criminal Justice), Ben Eklof\* (Emeritus), Lawrence J. Friedman\* (Emeritus), Wendy Gamber\*, Jeffrey L. Gould\*, Michael C. Grossberg\* (Emeritus), Peter Francis Guardino\*, John Henry Hanson\*, Carl David Ipsen\*, Danny James\*, Herbert Kaplan\* (Emeritus), Padraic Kenney\*, Sarah Knott\*, Hiroaki Kuromiya\* (Emeritus), Alex Lichtenstein\*, Edward Linenthal\* (Emeritus), James H. Madison\* (Emeritus), Phyllis Martin\* (Emerita), Michael McGerr\*, David Nichols, David Pace\* (Emeritus), M. Jeanne Peterson\* (Emerita), Alexander Rabinowitch\* (Emeritus), David L. Ransel\* (Emeritus), Eric Robinson\*, Mark Roseman\*, Eric Sandweiss\*, Robert Schneider\*, Micol Seigel\* (American Studies), Leah Shopkow\*, Rebecca Spang\*, Steven M. Stowe\* (Emeritus), Lynn A. Struve\* (Emerita)

### **Associate Professors**

Cara Caddoo\*, Ann G. Carmichael\* (Emerita), Arlene Díaz\*, Konstantin Dierks\*, Colin Elliott\*, Arthur Field\* (Emeritus), Sara Gregg\*, SLaura Kriegel\*, Pedro Machado\*, Jason McGraw\*, Marissa J. Moorman\*, Michelle Moyd\*, Amrita Myers\*, John M. Nieto-Phillips\*, Scott O'Bryan\* (East Asian Languages and Culture), Roberta Pergher\*, Julia Roos\*, Kaya #ahin\*, Jonathan Schlesinger\*, Fei-Hsien Wang\*, Jakobi Williams\*, Ellen Wu\*,

### **Assistant Professors**

Liza Black,

### **Clinical Assistant Professors**

Kalani Craig, Janine Giordano Drake

### **Adjunct Professors**

Stephen Andrews (JAH), Cynthia Bannon\* (Classical Studies), Keith Barton\* (Education), Purnima Bose\* (English), James Capsheaw\* (History and Philosophy of Science), Jamsheed K. Choksy\* (Central Eurasian Studies), Matthew Christ\* (Classical Studies), Devin DeWeese\* (Central Eurasian Studies), Lessie Jo Frazier\* (Gender Studies), Constance Furey\* (Religious Studies), Domenico Bertoloni Meli\* (History and Philosophy of Science), Kathleen Myers\* (Spanish and Portuguese), William Newman\* (History and Philosophy of Science), Toivo Raun\* (Central Eurasian Studies), Jeremy Schott\* (Religious Studies)

### **Adjunct Associate Professors**

Gardner Bovingdon\* (Central Eurasian Studies), Brett Bowles\* (French and Italian), Daniel Caner (Near Eastern Languages and Cultures), Beth English (OAH), Sarah Imhoff (Religious Studies), Colin Johnson\* (Gender Studies), Marianne Kamp (Central Eurasian Studies), Stephen Macekura (International Studies), Patrick Michelson (Religious Studies), Morten Oxenboell (East Asian Languages and Cultures), Ron Sela\* (Central Eurasian Studies), Carl Weinberg (COLL)

### **Adjunct Assistant Professors**

Elizabeth Grennan Browning (Environmental Resilience Institute), Michael De Groot (International Studies), Luis Gonzalez (IU Library), Clémence Pinaud (International Studies), Nick Vogt (East Asian Languages and Cultures)

### **Director of Graduate Studies**

Peter Guardino, Ballantine Hall 844, (812) 855-6108

### **Courses**

#### **History Courses**

- HIST-A 301 Colonial America (3 cr.)
- HIST-A 302 Revolutionary America (3 cr.)
- HIST-A 313 Origins of Modern America (3 cr.)
- HIST-A 315 United States since World War II (3 cr.)
- HIST-A 317 American Social and Intellectual History (3 cr.)
- HIST-A 325 American Constitutional History I (3 cr.)

- HIST-A 330 Social History of American Enterprise II (3 cr.)
  - HIST-A 346 American Diplomatic History II (3 cr.)
  - HIST-A 347 American Urban History (3 cr.)
  - HIST-A 348 Civil War and Reconstruction (3 cr.)
  - HIST-A 352 History of Latinos in the United States (3 cr.)
  - HIST-A 353 American Economic History I (3 cr.)
  - HIST-A 354 American Economic History 2 (3 cr.)
  - HIST-A 355 Afro-American History I (3 cr.)
  - HIST-A 356 Afro-American History II (3 cr.)
  - HIST-B 351 Western Europe in the Early Middle Ages (3 cr.)
  - HIST-B 352 Western Europe in the High and Later Middle Ages (3 cr.)
  - HIST-B 353 The Renaissance (3 cr.)
  - HIST-B 354 The Reformation (3 cr.)
  - HIST-B 355 Europe: Louis XIV to French Revolution (3 cr.)
  - HIST-B 356 French Revolution and Napoleon, 1763–1815 (3 cr.)
  - HIST-B 357 Modern France (3 cr.)
  - HIST-B 359 Europe from Napoleon to the First World War I (3 cr.)
  - HIST-B 360 Europe from Napoleon to the First World War II (3 cr.)
  - HIST-B 361 Europe in the Twentieth Century I (3 cr.)
  - HIST-B 362 Europe in the Twentieth Century II (3 cr.)
  - HIST-B 366 Paris and Berlin in the 1920s: A Cultural History (3 cr.)
  - HIST-B 377 History of Germany since 1648 I (3 cr.)
  - HIST-B 378 History of Germany since 1648 II (3 cr.)
  - HIST-B 391 Themes in World History (3 cr.)
  - HIST-C 386 Greek History (3 cr.)
  - HIST-C 388 Roman History (3 cr.)
  - HIST-C 393 Ottoman History (3 cr.)
  - HIST-E 531 African History from Ancient Times to Empires and City States (3 cr.) Origins and groupings of African peoples; political, social, and economic evolution to ca. 1750; Africa's contacts with the ancient world, trans-Saharan and Indian ocean trades; growth of states and empires; spread of Islam.
  - HIST-E 532 African History from Colonial Rule to Independence (3 cr.) The slave trade and its abolition; European imperialism and colonial rule; impact of Islam and Christianity; nationalism and the struggle for independence; reassertion of African culture and identity; development issues.
  - HIST-E 533 Conflict in Southern Africa (3 cr.) Early populations and environment; spread of European settlement, interaction with African societies and early race relations; Zulu power and white power; discovery of minerals and industrialization; urbanization and segregation; African and Afrikaner nationalism; south Africa and its neighbors; Mandela and the new South Africa.
  - HIST-E 534 History of Western Africa (3 cr.)
  - HIST-E 536 History of East Africa (3 cr.) Developments over the past two millennia in East Africa (Ethiopia, Somalia, Kenya, Uganda, Tanzania, Malawi, and northern Mozambique). Topics include the environment and peoples of the region, the emergence of hierarchical societies, the economic and political changes of the nineteenth century, the era of European imperialism, the transformations associated with the colonial period, and African independence.
  - HIST-E 538 History of Muslim West Africa (3 cr.) Introduction to the history and historiography of Muslim West Africa; develops the origins of Islam in West Africa and the ways West Africans have incorporated, transformed, and amplified Muslim beliefs and practices throughout history.
  - HIST-F 546 Modern Mexico (3 cr.) Places contemporary Mexico in historical perspective, focusing on the nineteenth and twentieth centuries. Topics include nineteenth-century social and political movements, the causes and consequences of the 1910 revolution, the formation of Mexico's political system, problems of economic growth, and the changing patterns of gender, class, and ethnicity in Mexican society.
  - HIST-H 425 Topics in History (1-3 cr.)
  - HIST-T 500 Topics in History (3 cr.) Intensive study and analysis of selected historical issues and problems of limited scope from the perspective of social and historical studies. Topics will vary but will ordinarily cut across fields, regions, and periods. May be repeated for credit.
- General and Professional Skills Courses**
- HIST-H 541 Advanced Quantitative Methods (4 cr.)
  - HIST-H 542 Public History (4 cr.) The application of history to public needs and public programs. Historic preservation, archival management, oral history, editing, public humanities programming, historical societies, etc.
  - HIST-H 543 Practicum in Public History (1-4 cr.) P: H542. Internships in public history programs, field work, or research in the historical antecedents of contemporary problems.
  - HIST-H 547 Special Topics in Public History (3 cr.) Intensive study and analysis of selected topics in public history. Topics will vary from semester to semester, e.g., to include historic preservation,



material history, archival practice, and historical editing.

- HIST-H 575 Graduate Readings in History (arr. cr.)
- HIST-H 580 The Teaching of College History (4 cr.) Approaches to college-level instruction in history, focusing on history learning theory, history course design, and educational research in history. Students will design a history course with appropriate assessments and will participate in a substantial research project related to course content.
- HIST-H 591 Teaching World History (3 cr.) Introduction to the teaching of the undergraduate courses in world history. Topics include current curricula in world history; textbooks and other readings in world history; and multimedia resources. Students will prepare an undergraduate course syllabus of their own design.
- HIST-H 592 Teaching World History Practicum (3 cr.) A first practical experience in teaching an undergraduate advanced topics course in world history. Topics are at the discretion of the student, but require authorization by the instructor and the Department of History. Students will have complete responsibility for the course taught.
- HIST-H 593 Teaching United States History (3 cr.) Introduction to teaching undergraduate courses in United States History. Topics include: curricula in U.S. history, pedagogy in U.S. history, textbooks, and multimedia resources. Students will design two undergraduate course syllabi.
- HIST-H 601 Introduction to the Professional Study of History (4 cr.) Introduces graduate students into the demands of the historical profession, introduces theory and methods of history, historiography, and fundamental research skills.
- HIST-H 602 The Historical Profession
- OS 500 Undistributed Overseas Study (0-30 cr.)

### Colloquia

- HIST-H 605 Colloquium in Ancient History (4 cr.)
- HIST-H 610 Colloquium in Medieval European History (4 cr.)
- HIST-H 615 Colloquium in Early Modern Western European History (4 cr.)
- HIST-H 620 Colloquium in Modern Western European History (4 cr.)
- HIST-H 630 Colloquium in British and British Imperial History (4 cr.)
- HIST-H 640 Colloquium in Russian History (4 cr.)
- HIST-H 645 Colloquium in East European History (4 cr.)
- HIST-H 650 Colloquium in United States History (4 cr.)
- HIST-H 661 Colloquium in History of Gender and Sexuality (4 cr.) Introduces students to the problems, bibliographies, interpretations, and research trends

in the history of gender and sexuality. Topic varies. May be taken more than once, upon approval of the student's advisory committee.

- HIST-H 665 Colloquium in Latin American History (4 cr.)
- HIST-H 675 Colloquium in East Asian History (4 cr.)
- HIST-H 680 Colloquium in Cultural History (4 cr.)
- HIST-H 685 Colloquium in Near Eastern History (4 cr.)
- HIST-H 695 Colloquium in African History (4 cr.)
- HIST-H 699 Colloquium in Comparative History (4 cr.) Selected topics that cut across conventional geographic and chronological periods. May be used by thematic minors as one of the three colloquia required of Ph.D. candidates.

### Seminars

- HIST-H 705 Seminar in Ancient History (4 cr.)
- HIST-H 710 Seminar in Medieval European History (4 cr.)
- HIST-H 715 Seminar in Early Modern European History (4 cr.)
- HIST-H 720 Seminar in Modern Western European History (4 cr.)
- HIST-H 730 Seminar in British and British Imperial History (4 cr.)
- HIST-H 740 Seminar in Russian History (4 cr.)
- HIST-H 745 Seminar in East European History (4 cr.)
- HIST-H 750 Seminar in United States History (4 cr.)
- HIST-H 760 Seminar in History of Gender and Sexuality (4 cr.) Course involves research at a mature level with primary sources in specialized topics and problems in the history of gender and sexuality. It will train the student in historical scholarship in that area. May be taken more than once, upon approval of the student's advisory committee.
- HIST-H 765 Seminar in Latin American History (4 cr.)
- HIST-H 775 Seminar in East Asian History (4 cr.)
- HIST-H 780 Seminar in Cultural History (4 cr.)
- HIST-H 785 Seminar in Near Eastern History (4 cr.)
- HIST-H 795 Seminar in African History (4 cr.)
- HIST-H 799 Seminar in World History (4 cr.)

### Thesis and Dissertation

- HIST-H 898 M.A. Thesis (1-6 cr.)
- HIST-H 899 Ph.D. Dissertation (arr. cr.)
- HIST-G 901 Advanced Research (6 cr.)

### Cross-listed Courses Classical Studies

**Greek**

CLAS-G305 Greek Tragedy (3 Cr.)\*  
 CLAS-G306 Greek Oratory (3 Cr.)\*  
 CLAS-G307 Selected Works of Plato (3 cr.)\*  
 CLAS-G308 Readings in Biblical Greek (3 cr.)\*  
 CLAS-G406 Homer (3 cr.)\*  
 CLAS-G407 Greek Historians (3 cr.)\*  
 CLAS-G410 Greek Prose Authors (3 cr.)\*  
 CLAS-G411 Greek Comedy (3 cr.)\*  
 CLAS-G510 Readings in Greek Historians (4 cr.)\*  
 CLAS-G511 Readings in Greek Oratory and Rhetoric (4 cr.)\*  
 CLAS-G512 Readings in Greek Philosophers (4 cr.)\*  
 CLAS-G513 Readings in the Greek Novel (3 cr.)\*  
 CLAS-G516 Readings in Greek Comedy (4 cr.)\*  
 CLAS-G517 Readings in Greek Tragedy (4 cr.)\*  
 CLAS-G518 Readings in Greek Epic (4 cr.)\*  
 CLAS-G536-G537 Survey of Greek Literature I-II (4-4 cr.)\*  
 CLAS-G540 Readings in Byzantine Greek (4 cr.)\*  
 CLAS-G600 Intermediate Greek I (3 cr.)\*  
 CLAS-G601 Seminar in Greek Poetry (4 cr.)\*  
 CLAS-G603 Seminar on Greek Tragedy (4 cr.)\*  
 CLAS-G610 Seminar in the Greek Novel (4 cr.)\*  
 CLAS-G611 Seminar in Greek Epigraphy, Papyrology, and Paleography (4 cr.)\*  
 CLAS-G613 Seminar in Greek Tragedy (4 cr.)\*  
 CLAS-G620 Seminar in Historical Texts and Historiography (4 cr.)\*  
 CLAS-G622 Seminar on Topics in Greek Literature (4 cr.)\*  
 CLAS-G650 Introduction to Attic Greek Prose and Poetry (3 cr.)\*

**Latin**

CLAS-L305 Ovid (3 cr.)\*  
 CLAS-L307 Cicero (3 cr.)\*  
 CLAS-L308 Caesar (3 cr.)\*  
 CLAS-L309 Introduction to Virgil's Aeneid (3 cr.)\*  
 CLAS-L407 Roman Lyric and Elegy (3 cr.)\*  
 CLAS-L408 Roman Comedy (3 cr.)\*  
 CLAS-L409 Readings in Medieval Latin (3 cr.)\*  
 CLAS-L423 Roman Satire (3 cr.)\*  
 CLAS-L424 Silver Age Historians (3 cr.)\*  
 CLAS-L426 Rhetoric and Oratory (3 cr.)\*  
 CLAS-L427 Virgil's Eclogues and Georgics (3 cr.)\*

CLAS-L428 Advanced Study of Virgil's Aeneid (3 cr.)\*  
 CLAS-L429 Roman Letters (3 cr.)\*  
 CLAS-L430 Lucretius (3 cr.)\*  
 CLAS-L432 Livy (3 cr.)\*  
 CLAS-L509 Cicero, His Life and Works (4 cr.)\*  
 CLAS-L510 Readings in Latin Historians (4 cr.)\*  
 CLAS-L511 Readings in Latin Oratory and Rhetoric (4 cr.)\*  
 CLAS-L513 Readings in the Roman Novel (4 cr.)\*  
 CLAS-L515 Readings in Latin Elegy (4 cr.)\*  
 CLAS-L536-L537 Survey of Latin Literature I-II (4-4 cr.)\*  
 CLAS-L540 Medieval Latin (4 cr.)\*  
 CLAS-L600 Seminar in Latin Epic (4 cr.)\*  
 CLAS-L602 Seminar in Latin Comedy (4 cr.)\*  
 CLAS-L603 Seminar in Latin Tragedy (4 cr.)\*  
 CLAS-L610 Seminar in Roman Novel (4 cr.)\*  
 CLAS-L611 Seminar in Latin Epigraphy or Palaeography (4 cr.)\*  
 CLAS-L620 Seminar in Latin Historical Texts and Historiography (4 cr.)\*

**Classics - (non language study courses)**

CLAS-C405 Comparative Mythology (4 cr.)\*  
 CLAS-C409 Roman Literature and Art (3 cr.)\*  
 CLAS-C411 (FINA A411) The Art and Archaeology of Anatolia (4 cr.)\*  
 CLAS-C412 (FINA A412) The Art and Archaeology of the Aegean (4 cr.)\*  
 CLAS-C413 (FINA A413) The Art and Archaeology of Greece (4 cr.)\*  
 CLAS-C414 (FINA A414) The Art and Archaeology of Rome (4 cr.)\*  
 CLAS-C419 The Art and Archaeology of Pompeii (4 cr.)\*  
 CLAS-C502 Bibliography and Research Resources for Classical Studies (1 cr.)\*  
 CLAS-C503 The Ancient City (4 cr.)\*  
 CLAS-C610 Seminar in the Greek and Roman Novels (4 cr.)\*  
 CLAS-C623 Seminar in Classical Archaeology (4 cr.)\*

**Religious Studies**

REL-R521 Advanced Readings in Early Christian Religious Texts (1-4 cr.)\*+  
 REL-R736 Advanced Readings in Early Christian Religious Texts (1-4 cr.)\*+

+When these numbers are applied to Syriac or Coptic language instruction beyond the first semester introduction level.

\*These cross-listed courses are awarded History Department graduate credit for students in the Ancient field only.

## History and Philosophy of Science

### College of Arts and Sciences

**Departmental E-mail:** hpscdept@indiana.edu

**Departmental URL:** <https://hpsc.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Arts, Dual Master of Arts and Master of Library Science (jointly with the Department of Information and Library Science), Scientific Inquiry and Research Integrity Master of Arts, and Doctor of Philosophy. Students at IU may also pursue double Ph.D.'s with related departments, such as History or Philosophy, writing a single dissertation.

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

#### Admission Guidelines

Either (1) an undergraduate major in a science or a related group of sciences with a minor in either history or philosophy; (2) an undergraduate major in either history or philosophy with a strong minor in science; (3) or a similar background is preferred. Applicants with divergent backgrounds who can demonstrate serious interest and research potential in HPSC are encouraged to apply.

#### Master of Arts Degree

##### Course Requirements

This track is designed for students intending to pursue a Ph.D. A total of 30 credit hours of graduate coursework is required, including 24 hours of coursework in the department. Students must also complete:

- At least 3 core courses from the list (X506, X507, X511, X551, X552, X556, X706)
  - At least one of X506 or X507
  - At least one of X551, X552, or X556
- 1 semester each of X501 and X733
- 1 course that requires the writing of a major research paper
- 4 additional graduate lecture and/or seminar courses in the department
  - X501, X733, and X600 are not lecture/seminar courses
- X700 Masters Thesis credits do not count toward the credit requirements

Students intending to complete a Master's Thesis must do so under the guidance of and accepted by a thesis committee, which will be drawn up in consultation with the student's advisor. The members of the committee retain the option to request an oral defense of the thesis.

A maximum of 12 credit hours of X700 may be taken, but they will not count toward the required 30 credits of coursework.

Students intending to take Ph.D. qualifying exams are advised to take more than the minimum number of core courses required for the M.A.

#### Grades

A 3.3 (B+) grade point average in departmental courses is required.

#### Foreign Language/Tool Skill Requirement

Proficiency in one approved foreign language or one research/tool skill. Students are typically expected to complete this requirement before registering for their third semester in the department. Any courses below the 500-level that are used to satisfy the language/tool skill requirement do not count toward the total number of graduate credits required for the Master's Degree.

Approved languages include Spanish, Greek, Latin, French, German, and Russian. Approved tool skills include Logic, Probability Theory, Advanced Computer Languages, and Statistics.

#### Dual Master of Arts and Master of Library Science Degrees

##### Course Requirements

Study for these two degrees can be combined for a total of at least 51 credit hours rather than the 66 credit hours required for the two degrees taken separately.

Students must take at least 21 credit hours in History and Philosophy of Science and Medicine, including 3 core courses (X506, X507, X511, X551, X552, X556, or X706), the Professional Development Seminar (X501), and Colloquium Series (X733). Core coursework must include at least one of X506 or X507 and at least one of X551, X552, or X556. The course of study must be planned in consultation with a department advisor. X600 Advanced Readings Course can be repeated for no more than 9 total credit hours.

Students must also complete 30 credit hours of Department of Information and Library Science (ILS) courses, coursework to be determined by ILS. Admission to each of the two areas of study is approved separately on the same basis as for other applicants not in the dual program.

#### Foreign Language/Tool Skill Requirement

Proficiency in one approved foreign language or one research/tool skill. Students are typically expected to complete this requirement before registering for their third semester in the department. Any courses below the 500-level that are used to satisfy the language/tool skill requirement do not count toward the total number of graduate credits required for the combined Master's Degree.

Approved languages include Spanish, Greek, Latin, French, German, and Russian. Approved tool skills include Logic, Probability Theory, Advanced Computer Languages, and Statistics.

## **Master of Arts Degree Track in Scientific Inquiry and Research Integrity**

### **Course Requirements**

This track is for students who are pursuing a professional (and possibly terminal) Master's Degree within the department. A total of 30 credit hours of graduate coursework for both the course-based M.A. and the case study or thesis-based M.A. are required. Department requirements for both tracks include:

- 3 courses from the core course list (X507, X511, X540, X551)
  - Each in conjunction with 1 credit hour of case study credit (X533)
- At least 3 out of 4 seminars in the Responsible Conduct of Research (RCR) Seminar Series at IUB (zero credit requirement)
- 3 credit hours of practicum or internship credit (X633)

Course-based M.A. students must also select 3 special topics courses (X506, X609, X632, X690, X693, X705, X755), including at least one with a history component (X506, X609, X632 or X705). X700 credits do not count toward the 30 required for the course-based M.A. option.

Case study or thesis-based M.A. students must select one special topics course with a history component (X506, X609, X632 or X705) and complete 6 credit hours of X700 Masters Thesis. Students may either chose to complete a thesis or extended case study in fulfillment of the research/thesis requirement.

Students intending to take Ph.D. qualifying exams are advised to take more than the minimum number of core courses required for the M.A.

### **Grades**

A 3.3 (B+) grade point average in departmental courses is required.

### **Tool Skill Requirement**

Proficiency in one approved tool skill (500-level or above), requiring two courses at three credit hours each. Depending on the area chosen, tool skill courses may be in Logic, Probability Theory, Statistics, Survey Research Methodology, Big Data Software and Projects, or similar. Courses should be chosen in consultation with the advisor. Students are typically expected to complete this requirement before registering for their third semester in the department.

## **Doctor of Philosophy Degree**

### **Fields of Study**

A student may concentrate in either the history or the philosophy of science or pursue both fields simultaneously. This affects the Foreign Language/Tool Skill Requirement and the Course Requirements below.

### **Course Requirements**

A total of 90 credit hours, including a maximum of 30 credit hours of dissertation work (X800) and a maximum of 9 credit hours of individualized study (X600).

Ph.D. students must select at least 4 core courses (X506, X507, X511, X540, X551, X552, X556, X706), including

at least one of X506 or X507, and at least one of X551, X552, or X556. Those students intending to emphasize history must take both X506 and X507. Those students intending to emphasize philosophy must take at least two of X551, X552, or X556.

Students must also select 5 additional graduate lecture and/or seminar courses in the department. X501, X733, and X600 are not lecture/seminar courses. Two semesters each of the Professional Development Seminar (X501) and Colloquium Series (X733) are also required.

### **Minor**

One minor outside the department is required. The requirements for this minor are set by the department involved. Outside minor fields that students in the History and Philosophy of Science and Medicine have commonly taken include history, mathematics, philosophy, or one of the sciences, such as astronomy, physics, mathematics, and biology. Should a student wish to take an "unusual" minor, it is necessary to get approval from the department.

### **Foreign Language/Tool Skill Requirement**

Proficiency either (1) in two languages, (2) in one language and one tool skill (only for those emphasizing philosophy), or (3) in one language in depth, depending on the recommendation of the student's advisory committee. Students are normally expected to complete one of these requirements before their third semester in residence and the second language or tool skill requirement before their fifth semester. The choice of languages or tool skill is to be made in consultation with the student's advisor. Courses used to satisfy the language/tool skill requirement do not count as graduate credit toward the Ph.D.

Approved languages include Spanish, Greek, Latin, French, German, and Russian. Another language demonstrably crucial to a student's dissertation research may be accepted upon approval by the student's academic advisor and the Director of Graduate Studies. Programming in Advanced Computer Languages may also be counted as a language.

Approved tool skills include: Logic, Probability Theory, Advanced Computer Languages, and Statistics. Another formal topic demonstrably crucial to a student's dissertation research may be accepted upon approval by the faculty. In general, students are expected to possess a level of proficiency in the practical ability to apply formal methods and an understanding of the theory underlying the formal methods. The level of proficiency demanded is at least equivalent to "B" level performance in upper-division undergraduate or graduate courses in the relevant disciplines, i.e. philosophy, mathematics, statistics, and computer science.

There are two methods for satisfying this requirement:

a). Certification by a committee of two HPSC faculty with expertise in the chosen tool skill. This committee may use any combination of special examination (written or oral), inspection of the student's transcripts, or requiring the student to obtain passing grades of at least "B" in pre-selected courses taken outside the department. In logic, this entails performance at least to the level of a "B" grade in the second semester of a formal logic course that covers predicate logic, practical familiarity with the logic of identity and modal operators, and the equivalent

of one upper-level or graduate course in logical theory at least covering the completeness of first-order predicate logic.

b). Certification by an external department. Where another department offers certification in a tool skill, students may choose to meet that requirement. Primarily, this refers to logic certification by the Philosophy Department, although other graduate certification programs in other departments may be considered. Students should consult the Director of Graduate Studies in the other department to determine which courses they may take to meet that department's certification requirements.

### Qualifying Examination

Written and oral. Examination in minor area is left to the discretion of the minor department. Examinations may not be taken more than twice, except in extraordinary cases.

### Research Proposal

In order to advance to Ph.D. candidacy, the student must submit and gain departmental approval of a dissertation research proposal. A grant proposal, suitable for submission to an external funding agency or institution, must also be prepared and approved at this stage (or earlier).

### Ph.D. Minor in History and Philosophy of Science

Graduate students from other departments desiring a minor in History and Philosophy of Science and Medicine must complete 12 graduate credit hours of coursework in the department with a B+ or higher. The set of courses should represent a coordinated objective and must be approved by the Director of Graduate Studies.

### Ph.D. Minor in Scientific Inquiry and Research Integrity

Graduates who complete the Minor will acquire a conceptual framework for reflecting on and understanding the methodological and ethical challenges of current scientific and medical research. The Minor extends the conception of science literacy from an understanding of scientific facts to a broader understanding of how science works, including an understanding of scientific rigor, the significance of replicability and replication, error, the possibilities and challenges involved in collaborative practices, and the role of values in science. Students will be acquainted with a broad set of ethical issues, including questions of authorship and publication ethics, expertise and the evidential basis for science policy decisions, and responsible communication both within science and beyond.

The student will complete two of the following four courses:

**HPSC-X 540** Scientific Methods: How Science Really Works

**HPSC-X 511** Science, Values, and Objectivity

**HPSC-X 507** Survey of History of Science since 1750

**HPSC-X 551** Survey of the Philosophy of Science

### Faculty

#### Chairperson

Jutta Schickore\*

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Director of Graduate Studies

Sander Gliboff\*

### Professors

Domenico Bertoloni Meli (Provost Professor)\*, James Capshew\*, Amit Hagar\*, Elisabeth A. Lloyd (Distinguished Professor)\*, William Royall Newman (Distinguished Professor)\*, Jutta Schickore (Ruth N. Halls Professor)\*

### Associate Professors

Jordi Cat\*, Sander Gliboff\*

### Assistant Professor

Ann-Sophie Barwich\*

### Lecturer

Leah Savion

### Courses

#### Core Courses

- HPSC-X 506 Survey of History of Science up to 1750 (3 cr.) Ancient, Medieval, Renaissance, and Enlightenment science.
- HPSC-X 507 Survey of History of Science since 1750 (3 cr.) Growth of physical, biological, and social sciences during the nineteenth and twentieth centuries. Attention will be paid not only to the scientific contents but to the institutional and social context.
- HPSC-X 511 Science and Values (3 cr.) The course covers the debates about the view that science is (or ought to be) value-free. The course combines historical and systematic perspectives. Topics include: 19th-century ideas about 'pure science' and scientific freedom, ideals of 'value-free science' and current debates about the roles values play (or should play) in science.
- HPSC-X 533 Case Study (1 cr.) Case study to apply skills acquired in core courses.
- HPSC-X 540 How Science Really Works: Scientific Methods (3 cr.) Introduction to philosophical and historical debates about scientific methods. Students will acquire the conceptual tools to discuss and reflect on the rules and procedures that make the pursuit of knowledge scientific.
- HPSC-X 551 Survey of the Philosophy of Science (3 cr.) Science claims to tell us what the world is like, even the part of the world we cannot see, and to explain why things happen the way they do. But these claims are controversial. Examination of competing models of scientific explanation and the ongoing debate over whether scientific theories should or even can be interpreted realistically.
- HPSC-X 552 Modern Philosophy of Science (3 cr.) Origin and character of twentieth-century



philosophy of science. Examination of the historical development of the philosophy of science—in interaction with parallel developments within the sciences themselves—from 1800 to the early twentieth century.

- HPSC-X 556 History and Philosophy of Premodern Science (3 cr.) Historical survey of philosophical discussions of the nature of science, in the premodern period.

### Courses in History of Science

- HPSC-X 632 History of medical and life sciences (3 cr.) Historical development of the theory and practice of medicine, biology, and related sciences. Content will vary
- HPSC-X 609 History of the physical and chemical sciences (3 cr.) Advanced and intensive study of selected topics in the history of the physical and chemical sciences. To include topics not ordinarily covered by existing survey courses in history of science
- HPSC-X 642 History of the social and human sciences (3 cr.) Explores the scientific, professional, and cultural dimensions of modern social and human sciences, including its emergence as an academic discipline in the late 19th century. Focus on interpretive issues raised by recent scholarship
- HPSC-X 705 Topics in the History of Science (3 cr.) Content and instructors will vary; students may thus receive credit more than once. Admission by consent of instructor or chairperson

### Courses in Philosophy of Science

- HPSC-X 690 Philosophical issues in the physical and chemical sciences (3 cr.) Topics in the philosophy of the physical and chemical sciences; topics may include space, time, and space-time, substances and elements, atomism, chemical explanations
- HPSC-X 693 Philosophical issues in the medical and life sciences (3 cr.) Survey of important concepts in the biological and medical sciences from antiquity to the present. A familiarity with biology or medicine is helpful but not necessary
- HPSC-X 755 Topics in the Philosophy of Science (3 cr.) Content and instructors will vary; students may thus receive credit more than once. Admission by consent of instructor or chairperson.

### Courses in HPS

- HPSC-X 521 Research Topics in the History and Philosophy of Science (3 cr.) For beginning graduate students. An introduction to research on a specialized topic, the use of tools and methods in history and philosophy of science, and how to plan and execute a project. Topics may include Digital HPS; Visual Representation in Science and Medicine; History of Ecology and Evolutionary Biology
- HPSC-X 706 Special Topics in the History and Philosophy of Science (3 cr.) Content and instructors will vary; students may thus receive credit more than once. Admission by consent of instructor or chairperson.

### Cross-Listed Courses Individualized Study

- HPSC-X 600 Advanced Readings Course (cr. arr.)\*\*
- HPSC-X 633 Practicum (2 cr.) Practicum or internship. Students will have the opportunity to develop and apply the analytic and reflexive competencies gained in the course work.
- HPSC-X 700 Masters Thesis (cr. arr.)\*\* Students will write a thesis. The topic will be selected in consultation with a faculty advisor.
- HPSC-X 800 Ph.D. Thesis (cr. arr.)\*\*

\*\*These courses are eligible for a deferred grade.

### Logic Courses

- A variety of logic courses are regularly offered through the Philosophy and Mathematics departments. Students should consult the Philosophy Department's graduate bulletin for the most current list of logic courses offered for graduate credit.
- Ph.D. students in History and Philosophy of Science and Medicine who wish to satisfy their tool skill requirement in logic must consult with the Director of Graduate Studies in the Philosophy Department to determine which courses they may take to meet that department's formal logic requirement. Minimally, students must demonstrate a thorough understanding of first-order logic and take two graduate courses in logic broadly construed to include philosophy of mathematics and philosophy of language, of which at least one is in logic narrowly construed, i.e., involving formal methods and metatheory.

## Human Dimensions of Global and Environmental Change

Departmental E-mail: [jafarmer@indiana.edu](mailto:jafarmer@indiana.edu)

**Departmental URL:** This doctoral minor is comprised of courses that are taught by faculty from an array of departments and schools across the IUB campus.

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff uses those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

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### Ph.D. Minor in the Human Dimensions of Global Environmental Change

The graduate minor will instruct students in theories and methods that combine the physical and social sciences on human dimensions of global environmental change (HDGEC). The curriculum, as described below, will familiarize students with (1) the history and concerns of human dimensions of global change research; (2) core theoretical dimensions of the study of coupled natural-human systems; and (3) fundamental methodological

tools for human-environment research. Students will be expected to become familiar with GIS and/or remote sensing as tools in the analysis of global environmental change through both formal courses and hands-on apprenticeship as part of team research projects.

### Course Requirements

The Minor in Human Dimensions of Global Environmental Change requires 12 credit hours of approved courses. The core course GEOG-G561 is required. Three credit hours of methods courses are required. To complete the HDGEC Ph.D. minor, students must (1) complete the required credit hours in good standing and (2) have at least one member of the HDGEC Ph.D. minor core faculty serve on the student's Ph.D. advisory committee. The director of the HDGEC Ph.D. minor can approve course substitutions for the core skills or elective requirements.

### Faculty

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### Director

Associate Professor James Farmer (O'Neill School of Public and Environmental Affairs)- [jafarmer@indiana.edu](mailto:jafarmer@indiana.edu)

### Core Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Eduardo Brondízio\* (Anthropology), Dan Cole (O'Neill School of Public and Environmental Affairs, Maurer School of Law), Vicky Meretsky\* (O'Neill School of Public and Environmental Affairs)

### Associate Professors

Shahzeen Attari\* (O'Neill School of Public and Environmental Affairs), James Farmer\* (Public Health), Rebecca Lave\* (Geography), Kim Novick (O'Neill School of Public and Environmental Affairs)\*, Michael Wasserman (Anthropology)

### Assistant Professor

Stephen Macekura (Hamilton Lugar School of Global and International Affairs), Jessica O'Reilly (Hamilton Lugar School of Global and International Affairs), Sarah Osterhoudt (Anthropology), Adam Ward (O'Neill School of Public and Environmental Affairs), Kurt Waldman (Geography), Landon Yoder (O'Neill School of Public and Environmental Affairs)

### Associated Graduate Faculty

### Professors

Jerome Busemeyer\* (Psychology), Chris Craft\* (O'Neill School of Public and Environmental Affairs), Michael Hendryx\* (School of Public Health), Dan Knudsen\* (Geography), J. Scott Long\* (Sociology), Scott Robeson\* (Geography), Todd Royer (O'Neill School of Public and Environmental Affairs), Jeanne Sept\* (Anthropology), James Walker\* (Economics), Andrea Wiley (Anthropology)\*

### Associate Professor

Darren Ficklin\* (Geography), Stacie King (Anthropology)\*, David Konisky\* (O'Neill School of Public and Environmental Affairs), Justin Maxwell\* (Geography), Heather Reynolds\* (Biology), Rich Phillips\* (Biology)

### Assistant Professors

### Clinical Professor

Burnell C. Fischer\* (O'Neill School of Public and Environmental Affairs)

### Academic Advisors

James Farmer \* (812) 856-0969, Email [jafarmer@indiana.edu](mailto:jafarmer@indiana.edu)

### Courses

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### Core Course

- GEOG-G 561 Human Dimensions of Global Environmental Change (3 cr.) Introduction of global environmental change (GEC), focusing on the human causes and consequences of biophysical transformations of land systems. Emphasis on socioeconomic, political, institutional and environmental dimensions of land change; tropical forests, grasslands and urbanizing areas; international environmental regimes; spatial methodologies in GEC research, and integrated approaches.

### Methods Elective Courses

- ANTH-E 600 Research Design and Proposal Writing (3 cr.).
- ANTH-E 606 Ethnographic Methods (3 cr.)
- GEOG-G 535 Environmental Remote Sensing (3 cr.) Principles of remote sensing of the earth and its atmosphere, emphasizing satellite data in visible, infrared, and microwave portions of the electromagnetic spectrum. Emphasis on practical applications and digital image analysis. A satellite data analysis project is required.
- GEOG-G 536 Advanced Remote Sensing: Digital Image Processing (3 cr.) Advanced remote sensing theory and digital image processing techniques with an emphasis on environmental science applications. Hands-on computer exercises provide significant experience in digital image processing techniques for extraction of qualitative and quantitative information about Earth's terrestrial and aquatic environments.
- GEOG-G 538 Geographic Information Systems (3 cr.) Overview of the principles and practices of Geographic Information Systems (GIS). Spatial data models, database design, introductory and intermediate GIS operations, and case studies of real-world GIS applications. Laboratory exercises will provide significant hands-on experience. Lecture and laboratory.
- GEOG-G 539 Advanced Geographic Information Systems (3 cr.) Intermediate and advanced topics

in geographic information science and spatial analysis techniques using GIS software. This advanced course is for graduates who seek a greater understanding of this rapidly developing field and to learn how to construct, manage and analyze their own GIS data and models.

- GRAD-G 591 Methods of Population Analysis & Applications (3 cr.) Techniques of measuring and analyzing population size and trends, fertility and mortality patterns, migration flows. Population estimates and projections. Major models of formal demography.
- POLS-Y 673 Empirical Theory & Methodology (3 cr.)
- POLS-Y 773 Empirical Theory & Methodology (3 cr.)
- SPEA-E 518 Vector-based Geographic Information Systems (3 cr.) Geographic information systems using vector data structure. Vector GIS capabilities and uses. Data structure and file management of spatial data. Laboratory exercises using vector-based GIS software such as ARC/INFO.
- SPEA-E 527 Applied Ecology (3 cr.) Ecosystem concepts in natural resource management. Techniques of ecosystem analysis. Principles and practices of ecological natural resource management.
- SPEA-E 528 Forest Ecology & Management (3 cr.) Field and laboratory exercises in quantitative analysis of forest ecosystems. Sampling and data collection methodologies, data analysis and interpretation. Concepts in forest ecology and forest management.

### Minor Elective Courses

#### University Graduate School

- GRAD-G 513 Topics Seminar in Human Dimensions of Environmental Change (3 cr.) Topical courses related to the study of institutions, population, and environmental change will be arranged in light of recent scientific developments and student and faculty interests. Analysis of human roles in environmental change is contextualized by attention to biophysical and ecosystematic relationships.
- GRAD-G 514 Fieldwork Practicum in Human Dimensions of Environmental Change (12 cr.) P: Approval from director of the Center for the Study of Institutions, Population, and Environmental Change. Topical courses related to the study of institutions, population, and environmental change will be arranged in light of recent scientific developments and student and faculty interests. Analysis of human roles in environmental change is contextualized by attention to biophysical and ecosystematic relationships.
- GRAD-G 591 Methods of Population Analysis and Applications (3 cr.) P: An undergraduate course in statistics. This is a course about methods of measuring and projecting population dynamics. We focus on describing the three basic demographic processes (mortality, fertility, and migration) and showing how each one affects population size and age structure. An understanding of these basic

processes is fundamental for studying behavioral aspects of population change.

- GRAD-G 593 International Perspectives on Population Problems (3 cr.) International trends in population growth, characteristics, and structure with attention to major social, environmental, economic, and political implications. Comparisons between industrially advanced economies and less developed countries in Latin America, Africa, and Asia. Special emphasis will be placed on local and national circumstances affecting fertility, mortality, migration, and emerging roles of population policies in development planning.

#### Anthropology

- ANTH-B 540 Hormones and Human Behavior (3 cr.) This course examines the roles of hormones in the evolution (ultimate explanations) and expression (proximate mechanisms) of human and nonhuman primate behaviors in an ecological framework. Emphasis is placed on aspects of endocrinology and behavior associated with eating, stress, social cohesion, mating, pregnancy, parenting, and aggression.
- ANTH-B 543 Evolution of Human Ecological Footprint (3 cr.) The current environmental crisis did not begin overnight and likely has roots deep in our evolutionary history. Although the scale of our effects on the biosphere has only recently shown exponential growth, it is worth examining how we got to this point today. This course explores a series of threshold moments in the history of our species that had great implications for the environment.
- ANTH-B 545 Nutritional Anthropology (3 cr.) A biocultural approach to diet and nutrition. Basic concepts in nutrition. Methods to assess dietary intake and nutritional status. Diet in human evolution, human biological variation, and the adaptive significance of food processing. Contemporary critiques of nutrition and food policies; globalization of diet; and anthropological perspectives on under- and over-nutrition.
- ANTH-E 527 Environmental Anthropology (3 cr.) Graduate course on theory and method in the study of human-environment interactions. Emphasis on contemporary debates and approaches and on research design in environmental research.
- ANTH-E 600 Topic Seminar: Remote Sensing for Social Scientists (3 cr.) This course combines a historical review on the use of remote sensing in the social sciences, conceptual discussions on applications of remote sensing to social science problems, and a formal introduction to remote sensing techniques based on hands-on laboratory sessions. The course will consist of a conceptual and a laboratory session each week.
- ANTH-E 600 Topic Seminar: People and Forest: Contemporary Issues on Deforestation, Forest Management, and Agroforestry (3 cr.) The main goal of this seminar is to provide a semester-long "environment" in which the student's individual research interest (research paper, proposal, etc.

related to “people and forest”) can be “nurtured” and discussed with an interdisciplinary group of graduate colleagues. The goal is to work on a single research paper or dissertation proposal or dissertation chapter during the whole semester while interacting with colleagues in class.

- ANTH-E 621 Food and Culture (3 cr.) Discusses the political economy of food production, trade and consumption on a global basis. Gives a cross cultural and historical perspective on the development of cooking and cuisine in relationship to individual, national, and ethnic identity. Relates cuisine to modernity, migration and forms of cultural mixing and Creolization.
- ANTH-E 644 People and Protected Areas: Theories & Realities of Conservation (3 cr.) Explores major theories and approaches to conservation, from “fortress conservation” to community-based and participatory strategies. It considers the implications of protected areas for local human populations and cultural diversity. It evaluates outcomes and unintended consequences of protected areas, and controversies over the “best” way to protect natural resources.

## Geography

- GEOG-G 511 Sustainable Development Systems (3 cr.) P: G208 or consent of instructor. An examination of the notion of sustainable development and its meaning and implementation in the areas of resources, agriculture, water, transport, cities, and tourism. Also considers how such systems can be implemented in developed countries.
- GEOG-G 517 Geography and Development: Critical Perspectives (3 cr.) Critical analysis of development theory, development practice, and the discourse of development, particularly within the context of the Third World. Geographic approach to the study of neoliberalism and globalization, commodity chains, transnational corporations, multi-lateral organizations, labor relations, NGOs, consumption practices, sustainability, gender, and culture.
- GEOG-G 520 Migration and Population Redistribution (3 cr.) P: G314 and G320, or consent of instructor. Examines the history of geography. Particular reference is made to the use of philosophical traditions of positivism, structuralism, humanism and postmodernism within geography and to the major debates about philosophy and methodology in the last two centuries within the discipline.
- GEOG-G 535 Environmental Remote Sensing (3 cr.) P: G314 and G320, or consent of instructor. Principles of remote sensing of the earth and its atmosphere, emphasizing satellite data in visible, infrared, and microwave portions of the electromagnetic spectrum. Emphasis on practical applications and digital image analysis. A satellite data analysis project is required.
- GEOG-G 536 Advanced Remote Sensing: Digital Image Processing (3 cr.) P: G535 or consent of instructor Advanced remote sensing theory and digital image processing techniques with an emphasis on environmental science applications. Hands-on computer exercises provide significant experience in digital image processing techniques for extraction of qualitative and quantitative information about Earth's terrestrial and aquatic environments.
- GEOG-G 538 Geographic Information Systems (3 cr.) Overview of the principles and practices of geographic information systems (GIS). Spatial data models, database design, introductory and intermediate GIS, operations and case studies of real-world GIS applications. Laboratory exercises will provide significant hands-on experience. Lecture and laboratory.
- GEOG-G 539 Advanced Geographic Information Systems (3 cr.) P: G538 or consent of instructor. Intermediate and advanced topics in geographic information science and spatial analysis techniques using GIS software. This advanced course is for students who seek a greater understanding of this rapidly developing field and to learn how to construct, manage, and analyze their own GIS data and models.
- GEOG-G 544 Climate Change Impacts (3 cr.).
- GEOG-G 549 Political Ecology (3 cr.) P: G315, G320, G341, G343 or consent of instructor. This seminar introduces political ecology, an approach which focuses on the political-economic context of natural resource conflicts with particular attention to issues of equity, justice and power. This course covers the theoretical lineage of political ecology, its development over the last twenty years, and current hot topics in the field.
- GEOG-G 551 Water Resources (3 cr.) P: One introductory physical science course and at least one 300-level physical/biological science course or consent of instructor. Introduction to hydrological processes occurring at multiple spatial and temporal scales. Principles of water resources such as infiltration, runoff, surface- and groundwater flow will be explored. Topics covered also include the environmental, economic, and social implications of floods, droughts, dams, and water usage as well as current and future issues in water quality, water pollution, and water-resource regulation.
- GRAD-G 578 Global Change, Food and Farming Systems (3 cr.) P: G208 or consent of instructor. Introduction to systems of food production and consumption, emphasizing linkages to globalization and environmental change. Reviews the origins of agriculture, contemporary farming systems, and agricultural adaptation and sustainability, with attention to the impacts of changing climate, land use, and social systems (including industrialization, urbanization, population growth, and economic liberalization). Additional topics include agricultural decision making; farming livelihoods; gender and poverty; prospects and challenges of biotechnology; agroecology; and food security and global health.

- GEOG-G 639 Topical Seminar in Geographic Information Science (3 cr.) Applications of geographic information science principles in the collection and analysis of spatial data. Integration of GIS, remote sensing, and GPS technologies. Review of current literature on technique, theory, technology, and applications with an emphasis on environmental topics. Discussion, laboratory, and research project.

### International Studies

- INTL-I 502 Global History of Sustainability (3 cr.). Investigations into the environmental history behind unsustainable and sustainable practices around the globe. Examines long-term changes in both space and time to develop a keener understanding of how the human-nature relationship has evolved. Special emphasis will be placed on the relationship between "the West" and the rest of the globe, as well as on how notions of "development" and "modernization" led people to alter the natural world in many different ways.

### Maurer School of Law

- LAW-B 506 Climate Law & Policy (3 cr.) Climate change presents enormous legal and policy challenges for society. This course examines those challenges and proposed solutions to them at all levels of governance. Students will learn about the science of climate change, the socio-economic consequences of rising global mean temperatures (along with uncertainties and other problems of climate modeling), climate change law and policies at international (e.g., United Nations processes and EU policies), national (focused predominantly on the US), regional, state, municipal and even private levels of governance, and climate change litigation. The goal of the course is to prepare students to engage effectively as lawyers and policy makers in the developing field of climate law and policy. Please note that this class meets according to SPEA regulations and calendar.

### Political Science

- POLS-Y 669 International Relations: International Political Economy (3 cr.) Illustrative topics: approaches and issues; international conflict; international organization; quantitative international relations; analysis and evaluation of policy making; U.S. foreign policy; Soviet foreign policy; international and comparative communism.
- POLS-Y 773 Empirical Theory and Methodology: Revisiting Collaborative Forest Communities in Indiana (3 cr.)

### O'Neill School of Public and Environmental Affairs

- SPEA-E 465 Environmental Management in the Tropics (3 cr.) Historical examination of land use in tropical, non-Western cultures. Resource use in physical and cultural settings is explored through an interface with ecology, economics, and policy analysis. Common principles of analysis are used to help the students understand the cultural and historical dimensions of how people relate to their environment.

- SPEA-E 501 Human Behavior and Energy Consumption (3 cr.) We face many barriers that prevent us from conserving energy and other natural resources. This course is aimed at decreasing energy use independent of top down regulations. Students will understand the nature of energy, the importance of human behavior, and how to create, and evaluate behavioral change.
- SPEA-E 518 Vector-Based Geographic Information Systems (3 cr.) Geographic information systems using vector data structure. Vector GIS capabilities and uses. Data structure and file management of spatial data. Laboratory exercises use ARC/INFO software.
- SPEA-E 522 Urban Forest Management (2-3 cr.) Originally an outgrowth of aboriculture, urban forestry now encompasses the broader concepts of managing the trees, forests, and other natural resources of cities for ecological, economic, and social benefits. Lectures, discussion, and field projects will be supplemented by outside speakers. (IUB and Bloomington will be the field laboratory.)
- SPEA-E 527 Applied Ecology (3 cr.) P: One introductory-level ecology course. Ecosystem concepts in natural resource management. Techniques of ecosystem analysis. Principles and practices of ecological natural resource management.
- SPEA-E 528 Forest Ecology and Management (3 cr.) P: E538 or V506. Field and laboratory exercises in quantitative analysis of forest ecosystems. Sampling and data collection methodologies. Data analysis and interpretation. Concepts in forest ecology and forest management.
- SPEA-E 534 Restoration Ecology (3 cr.) P: E538 or V506. The course will cover basic concepts of ecosystem restoration, including development of energy flow and nutrient cycles, soil formation, mechanisms of species dispersal, and colonization and mutualistic relationships. Restoration of specific terrestrial and aquatic ecosystems, including grasslands, forests, lakes, rivers and streams, and wetlands, will be covered.
- SPEA-E 555 Topics in Environmental Science: Fundamentals of Sustainable Agriculture (3 cr.) This course will present the fundamentals of specialty crop and animal sustainable agriculture based on an agroecological framework. Students will learn about and apply ecological, social, and economic concepts in evaluating for farm sustainability. The course includes both "in-class" and field lab experiences. Participation, observation, and thoughtful, open discussion will be essential to successful learning. Lectures will include overviews of the basic principles and practices guiding ecological farming systems.
- SPEA-E 557 Conservation Biology (3 cr.) P: One 300-level ecology course. Ecological principles associated with rare species and with biodiversity, laws and statutes used to conserve biodiversity, and land and species management practices. Our aim is to understand scientific and political complexities of



conservation biology and to study different methods used to conserve living resources and resolve conflicts associated with conservation.

### School of Public Health-Bloomington

- SPH-O 510 Human Health, Quality of Life, and Natural Environments (3 cr.) Numerous textbooks address the relationship between human health and natural environments from either the perspectives of toxicity or environmental degradation. This course, on the other hand, approaches the issues of human health and quality of life from a broader context that also includes the perspective of interaction with the natural environment. That is, in what ways do natural environments impact human health and an individual's reported sense of quality of life?

## Human Evolutionary Studies

### College of Arts and Sciences

Departmental E-mail: [toth@indiana.edu](mailto:toth@indiana.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Admission Requirements

Students must be admitted to a Ph.D. program in the Department of Anthropology, the Department of Biology, the Department of Geological Sciences, the Department of Psychological and Brain Sciences, or other related department or program. They must also apply to the Program in Human Evolutionary Studies.

### Program Information

Students should select an advisory committee made up of the two core faculty and at least one of the associate faculty members. For students whose home department is anthropology, at least one member of the advisory committee is expected to be from a department outside anthropology.

### Ph.D. Minor in Human Evolutionary Studies Course Requirements

The minor in human evolutionary studies requires four courses. Three of the four required courses are S510 The Archaeology of Human Evolution (3 cr.); S511 Seminar on Current Issues in Paleoanthropology (3 cr.) (Topics will vary; may be repeated for graduate credit); and ANTH B464 Human Paleontology (3 cr.).

The fourth required course will be chosen from the following: S512 Human Evolution and the Prehistory of Intelligence (3 cr.); S513 Modeling Human Evolution (3 cr.); or BIOL L505 Molecular Biology of Evolution (3 cr.).

### Grades

A minimum of B (3.0) is required in each course that is to count toward the minor.

### Faculty

### Core Faculty Professors

Kathy Schick\* (Anthropology), Nicholas Toth\* (Anthropology)

### Associated Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Abhijit Basu\* (Geological Sciences), Geoffrey Conrad\* (Anthropology), Della Collins Cook\* (Anthropology), Jesus Dapena\* (School of Public Health), Paul Jamison\* (Emeritus, Anthropology), Robert Meier\* (Emeritus, Anthropology), Emilio Moran\* (Anthropology), Christopher Peebles\* (Anthropology), Lisa Pratt\* (Geological Sciences), Anne Pyburn\* (Anthropology), Elizabeth Raff\* (Biology), Rudolf Raff\* (Biology), Jeanne Sept\* (Anthropology), Julie Stout\* (Psychology), Richard Wilk\* (Anthropology)

### Courses

#### Cross-Listed Courses

##### Anthropology

B464 Human Paleontology (3 cr.)

##### Biology

L505 Molecular Biology of Evolution (3 cr.)

L567 Evolution (3 cr.)

#### HVST-S 510 The Archaeology of Human Evolution

**(3 cr.)** Overview of the Paleolithic (Old Stone Age) from 2.6 million years to 10,000 years ago. Focuses on the theory and method of reconstructing hominid behavior in the Stone Age. Course will take an evolutionary perspective, considering both biological and technological evolution.

#### HVST-S 511 Seminar on Current Issues in

**Paleoanthropology (3 cr.)** Provides a forum for professional-level discussion of current reports on human evolution. Will often focus on one aspect or theme in human evolutionary studies.

#### HVST-S 512 Human Evolution and the Prehistory of Intelligence (3 cr.)

Explores the different avenues of inquiry pertaining to the evolution of human intelligence from an archaeological and human paleontological perspective. Topics include technology, subsistence strategies, symbolic behavior, human paleontology, and paleoneurology (especially study of endocasts and fossil skulls).

#### HVST-S 513 Modeling Human Evolution (3 cr.)

Explores the breadth of animal (mostly primate) models for human evolution. Areas for discussion include digestive physiology, bone density, language acquisition, locomotion, tool use, foraging, and social behavior. After a brief overview of theory and method in animal analogy, we will review animal models for the evolution of humans.

## Human Sexuality

### The Kinsey Institute and the Interdepartmental Graduate Committee on Human Sexuality

Departmental E-mail: [kinsey@indiana.edu](mailto:kinsey@indiana.edu)

Departmental URL: <http://www.kinseyinstitute.org/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Ph.D. Minor in Human Sexuality

This minor is co-directed by the Kinsey Institute for Research in Sex, Gender, and Reproduction and the Interdepartmental Graduate Committee on Human Sexuality. The Human Sexuality Program offers a doctoral minor of 12 credits from related interdisciplinary subject areas. It is intended for students currently enrolled in a doctoral program, such as counseling, education, health behavior, psychology, gender studies, or sociology. Students should select an advisor for this minor from members of the Interdepartmental Graduate Committee, listed in the Bulletin, or from Kinsey Institute affiliated faculty (see webpage). One core course (K690, H555, or S522) is required, although all may be taken for credit toward the minor, with the remaining hours being selected, upon consent of the student's minor area faculty advisor, from other courses that have a major emphasis on sexuality (example courses are listed below). The program provides a basic yet broad overview of human sexuality. The behavioral, biological, cultural, and social components of sexuality are examined, including the study of the role of sexuality in the arts and public policy. The program will be particularly useful for persons entering fields involving the social and behavioral sciences, education, health science and medicine, counseling and therapy, nursing, social work, humanities, criminal justice, and public policy.

Students interested in the Ph.D. Minor in Human Sexuality should check the Web site for up-to-date information about the minor, course offerings, and a list of affiliated faculty ([www.kinseyinstitute.org/graduate/phminor.html](http://www.kinseyinstitute.org/graduate/phminor.html)). All students intending to complete the minor should contact Professor William L. Yarber, School of Public Health-Bloomington 142, (812) 855-7974, [yarber@indiana.edu](mailto:yarber@indiana.edu) and/or Professor Justin R. Garcia, The Kinsey Institute, Morrison Hall 313, (812) 855-7686, [jusrgarc@indiana.edu](mailto:jusrgarc@indiana.edu).

#### Core Courses

Kinsey Institute: KINS-K 690 Sexual Science Research Seminar (1-3 cr.)

Public Health: SPH-H 562 Issues in Human Sexuality and Health (3 cr.)

Sociology: SOC-S 522 Constructing Sexuality (3 cr.)

(See **Courses** for additional course examples.)

#### Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Co-Chairpersons

Professor William Yarber\* (Applied Health Science) and Professor Justin R. Garcia\* (Gender Studies, Kinsey Institute)

### Professors

Judith Allen\* (History), Claudia Breger (Germanic Studies), C. Sue Carter\* (Biology, Kinsey Institute), Kathryn Coe (Fairbanks School of Public Health), Wendy Gamber (History), Julia R. Heiman\* (Psychological and Brain Sciences, Psychiatry), Scott Herring (English), Amy Holtzworth-Munroe (Psychological and Brain Sciences), J. Dennis Fortenberry (School of Medicine), Stephanie Li (English), Elizabeth Lloyd (History and Philosophy of Science), Sumie Jones\* (Emerita, Comparative Literature, East Asian Languages and Cultures), Ellen Ketterson (Biology), Noretta Koertge\* (Emerita, History and Philosophy of Science), J. Scott Long (Sociology), Filippo Menczer (Informatics), Brea Perry (Sociology), Brian Powell (Sociology), Michael Reece\* (Applied Health Science), Jean Robinson\* (Political Science), Stephanie A. Sanders\* (Gender Studies, Kinsey Institute), Dale Sengelaub (Psychological and Brain Sciences), David H. Smith\* (Emeritus, Religious Studies), Beverly Stoeltje\* (Anthropology), Peter M. Todd (Cognitive Science, Psychological and Brain Sciences Informatics), Virginia J. Vitzthum\* (Anthropology), Martin Weinberg\* (Sociology), Brenda Weber\* (Gender Studies), Colin Williams\* (Sociology, Indiana University–Purdue University Indianapolis)

### Associate Professors

Jeffrey Bardzell (Informatics), Shaowen Bardzell (Informatics), Heather Bradshaw (Psychological and Brain Sciences), Silvia M. Bigatti (Fairbanks School of Public Health), Gracia Clark\* (Anthropology), Brian Dodge (Applied Health Science), Debby Herbenick (Applied Health Science), Thomas James (Psychological and Brain Sciences), Colin Johnson (Gender Studies), Stephanie Kane\* (Criminal Justice), Jennifer Maher (Gender Studies), Bryant Paul (Media School), Steve Sanders (School of Law), Shane Vogul (English, Cultural Studies)

### Assistant Professors

Justin R. Garcia\* (Gender Studies, Kinsey Institute), Beth Meyerson\* (Applied Health Science), Paul Wright\* (Media School)

### Academic Advisor

Professor William L. Yarber\*, School of Public Health Building 142; (812) 855-7974; [yarber@indiana.edu](mailto:yarber@indiana.edu)

### Courses

#### Anthropology

**ANTH-A 501 Animal Behavior (3 cr.)**

**ANTH-B 600 Human Variation and Anthropology (3 cr.)**

**ANTH-B 600 Behavioral Genetics (3 cr.)**

#### Biology

**BIOL-A 501 Techniques in Reproductive Diversity (arr. cr.)**

**BIOL-Z 620 Special Topics in Zoology (3 cr.)**

## Communication and Culture

CMCL-C 622 Advanced Pedagogy (3 cr.)

CMCL-C 688 Rhetorics of Transgression and/or Resistance (3 cr.)

## East Asian Languages and Cultures

EALC-E 505 Japanese Fiction and Culture: Modern Japanese Women Writers (3 cr.)

EALC-H 637 Gender, Education, and Development (3 cr.)

## Fine Arts

FINA-A 543 History of Twentieth Century Photography (3 cr.)

## Gender Studies

GNDR-G 600 Concepts of Gender (3 cr.)

GNDR-G 701 - (3-4 cr.) May count toward minor when topic applies to human sexuality.

GNDR-G 704 Cultural Politics and Twentieth Century Sexuality (3 cr.)

## History

HIST-H 661 Histories of Gender and Sexuality (3 cr.)

HIST-H 760 Researching Gender & Sexualities in Modern Cultures (3 cr.)

## Psychological and Brain Sciences

PSY-P 631 Intervention and Evaluation (3 cr.)

PSY-P 657 Topical Seminar (3 cr.) May count toward minor when topic applies to human sexuality.

## School of Public Health

SPH-C 501 Assessment and Planning in Public Health (3 cr.)

SPH-H 540 Practicum in College Human Sexuality (3 cr.)

## India Studies

School of Global and International Studies

College of Arts and Sciences

Departmental E-mail: [india@indiana.edu](mailto:india@indiana.edu)

Departmental URL: [www.indiana.edu/~isp](http://www.indiana.edu/~isp)

India Studies is affiliated with the new School of Global and International Studies (SGIS) in the College of Arts and Sciences, dedicated to providing Indiana University graduate students with the intellectual tools they will need to live, work, and thrive in the globalized world of the twenty-first century. Degree programs associated with SGIS emphasize language proficiency, cultural competency, and in-depth training in qualitative and quantitative methodologies. SGIS students will enjoy unparalleled access to a stellar faculty and professional development opportunities. For further information regarding the mission, structure and resources of the School of Global and International Studies see <http://sgis.indiana.edu/>.

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements

contained only in *The University Graduate School Bulletin*.)

## Curriculum

### Program Information

The Dhar India Studies Program promotes original research and innovative teaching on all aspects of the Indian subcontinent (also referred to as South Asia). Students undertaking a PhD Minor in India Studies may specialize in nearly any topic related to this region, from contemporary politics, health, and cultural practices to historical studies of society, religion, and the state. Simultaneously, the PhD Minor may be used to provide students a broad background in area studies and language training. The program offers beginning to advanced training in a number of South Asian languages, including Hindi, Urdu, Sanskrit and Bengali. The program's 35+ affiliated faculty members conduct original research in most regions of the subcontinent, including Bengal, southern India, the Hindi belt of north India, Pakistan, Nepal, and Bangladesh. The program also organizes regular academic seminars and cultural activities which form an important part of a graduate student's training, and routinely offers competitive funding for travel to the subcontinent.

India Studies is affiliated with the new School of Global and International Studies in the College of Arts and Sciences, dedicated to providing Indiana University graduate students with the intellectual tools they will need to live, work, and thrive in the globalized world of the twenty-first century. Degree programs associated with SGIS emphasize language proficiency, cultural competency, and in-depth training in qualitative and quantitative methodologies. SGIS students will enjoy unparalleled access to a stellar faculty and professional development opportunities. For further information regarding the mission, structure and resources of the School of Global and International Studies see: <http://sgis.indiana.edu/>

### Ph.D. Minor in India Studies

Requirements:

4 graduate (i.e., 500-level or higher) courses, each of at least 3 credit hours. Credit will be awarded for courses listed as Dhar India Studies Program offerings, and may, at the discretion of the DISP Director, be awarded for additional, unlisted courses that have extensive content pertaining to India/South Asia. No more than 2 language courses may be counted toward the four course total; each course so counted must be taken at the second year (i.e., Intermediate) level or higher. Specific courses, as well as language requirements (if any) should be chosen in consultation with the Program Director. Ordinarily, only 1 course from the student's major program may be counted towards the Ph.D. minor; this course may not simultaneously be counted toward other major or minor requirements. (Students who matriculated prior to Fall 2013 may use the earlier requirements for the Ph.D. minor. Please consult with the Director on this point.)

## Faculty

## Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Director

Michael S. Dodson\*, Associate Professor of South Asian History, Director, Dhar India Studies Program, and Academic Director of the Indiana University Gateway in Gurgaon, India.

### Professor of Practice

Rajendra Abhyankar (School of Public and Environmental Affairs)

### Professors

Christopher Beckwith\* (Central Eurasian Studies), Kevin D. Brown\* (Maurer School of Law), Jamsheed Choksy\* (Central Eurasian Studies), J. Clancy Clements\* (Spanish & Portuguese, Linguistics), David Fidler\* (Maurer School of Law), Sumit Ganguly\* (Political Science), David L. Haberman\* (Religious Studies), Jayanth Krishnan\* (Maurer School of Law), Terrence Mason\* (School of Education), Radhika Parameswaran\* (School of Journalism), Steven Raymer (School of Journalism), Samrat Upadhyay\* (English), Munirpallam Venkataramanan\* (Kelley School of Business), John Walbridge\* (Near Eastern Languages and Cultures), Andrea Wiley\* (Anthropology)

### Associate Professors

Purnima Bose\* (English), Judith Brown\* (English), Michael S. Dodson\* (History), Nandini Gupta (Kelley School of Business), R. Kevin Jaques\* (Religious Studies, Islamic Studies), Sreenivas Kamma\* (Kelley School of Business), Paul Losensky\* (Central Eurasian Studies, Comparative Literature), Rebecca Manning\* (India Studies, Religious Studies), Richard Nance (Religious Studies), Susan Seizer\* (Communication and Culture), Ron Sela\* (Central Eurasian Studies), Pravina Shukla\* (Folklore and Ethnomusicology), Elliot Sperling\* (Central Eurasian Studies), Ranu Samantrai\* (English), Arvind Verma\* (Criminal Justice)

### Assistant Professors

Majed Akhter\* (Geography), Keera Allendorf (Sociology), Ishan Ashutosh\* (Geography), Kelly Berkson\* (Linguistics), Pedro Machado (History)

### Lecturer

Kashika Singh

### Director of Language Instruction

Rebecca J. Manning

### Librarian for South Asian and Southeast Asian Studies

Karen S. Farrell

### Academic Advising

William E. Smith, III, Sycamore Hall 123, (812) 855-2736

## Courses

### INST-I 500 Non-Western Theatre and Drama (3 cr.)

**Not currently being offered.** Provides an overview of the great diversity of drama, dance, and theatre genres of India, looks at the influence of Indian theatre on Western theatre artists, and serves as an introduction to Indian culture and society through its performing arts (Joint offering with Theatre and Drama T583).

**INST-H 510 Advanced Hindi I (3 cr.)** Students will work at systematically developing higher level linguistic functions and cultural literacy. Class is conducted entirely in Hindi. Students will develop and support arguments, working with authentic materials in print, broadcast, and film formats. Students will produce a research paper on a subject of their choosing (with instructor's approval).

**INST-H 511 Advanced Hindi II (3 cr.)** Students will continue to work at systematically developing higher level linguistic functions and cultural literacy. Class is conducted entirely in Hindi. Students will develop and support arguments, working with authentic materials in print, broadcast, and film formats. Students will produce a research paper on a subject of their choosing (with instructor's approval).

**INST-I 501 Elementary Sanskrit I (4 cr.)** Introduction to Sanskrit, a classical language of ancient India. Basic grammatical structure and vocabulary in preparation for the reading of both secular and religious texts.

**INST-I 502 Elementary Sanskrit II (4 cr.)** Continuing introduction to Sanskrit. Basic grammatical structure and vocabulary in preparation for the reading of both secular and religious texts. Students will read a short epic Sanskrit piece.

**INST-I 506 Beginning Hindi I (4 cr.)** Introduction to the Hindi language through its writing system and basic grammar. Graded exercises and readings leading to mastery of grammatical structures and essential vocabulary. Development of reading and writing competence and simple conversations in contemporary Hindi. Classroom use of story books, tapes, and films in Hindi.

**INST-I 507 Beginning Hindi II (4 cr.)** Continuation of the first semester. Graded exercises and reading for mastery of grammatical structures and essential vocabulary. Composing short dialogues from the students' own environment. Reading, writing, and conversational skills are sharpened.

**INST-I 508 Second-Year Hindi I (3 cr.)** Focuses on reading such literature as mythology, folklore, and modern short stories and poetry, including several examples from Urdu literature. Students compose and perform their own dialogues based on the material read.

**INST-I 509 Second-Year Hindi II (3 cr.)** Promotes rapid reading skills and building vocabulary. Study of grammar is based on Hindi reading materials and includes regular grammar drills. Students sharpen composition skills by retelling stories from the reading material orally and in writing.

**INST-I 546 Philosophies of India (3 cr.) Not currently being offered.** Historical and critical-analytic survey of the major intellectual traditions of the cultures and civilizations of India. Attention to early philosophizing and the emergence of the classical schools in Hindu, Buddhist,



and Jain traditions. Attention also to contemporary thought in India, including critical theory and subaltern theorizing.

**INST-I 561 Intermediate Sanskrit I (3 cr.)**

**INST-I 562 Intermediate Sanskrit II (3 cr.)**

**INST-I 570 Literature of India in Translation: Ancient and Classical (3 cr.) Not currently being offered.**

Survey of the ancient and classical Sanskrit literatures of India in translation, presented in cultural context.

**INST-I 571 Medieval Devotional Literatures of India (in translation) (3 cr.)** Survey of medieval Indian devotional literature with reference to the various cultural milieus in which it was produced and its impact on and importance to Indian cultures today.

**INST-I 580 Women in South Asian Religious Traditions (3 cr.)** A historical view of the officially sanctioned roles for women in several religious traditions in South Asia, and women's efforts to become agents and participants in the religious expressions of their own lives.

**INST-I 597 Sanskrit Religious Literature (3 cr.) Not currently being offered.** Arranged tutorial readings from selected Indian religious texts in the original Sanskrit representing a variety of styles, periods, and religious traditions; includes selections from Hindu scriptures, religious epics, commentaries, religious law, hymns, philosophical texts, and Buddhist literature. Not currently being offered. May be repeated once for credit when topics vary.

**INST-I 605 Seminar on India Studies (3 cr.)** Advanced research seminar on selected topics in India studies. Seminar may focus on specific texts, specific historical figures, basic themes, or issues in India studies.

**INST-I 656 Graduate Readings in India Studies (1-6 cr.)** Reading knowledge of Sanskrit and Hindi. Selected and substantive topics investigated from ancient, medieval, and modern texts about the civilization of India. May be repeated when topic varies for a maximum of six credit hours.

**INST-L 500 Elementary Indian Languages I (3 cr.)** Language instruction in the specific Indian language named in the schedule of classes. Various languages will be offered when available. These courses may be retaken for credit, but only in a language different from that of the first enrollment.

**INST-L 550 Elementary Indian Languages II (3 cr.)** Language instruction in the specific Indian language named in the schedule of classes. Various languages will be offered when available. These courses may be retaken for credit, but only in a language different from that of the first enrollment.

**INST-L 560 Intermediate Indian Languages I (3 cr.)** Language instruction in the specific Indian language named in the schedule of classes. Various languages will be offered when available. These courses may be retaken for credit, but only in a language different from that of the first enrollment.

**INST-L 570 Intermediate Indian Language II (3 cr.)**

**INST-U 506 Beginning Urdu I (4 cr.)** Introduction to the Urdu language and basic grammar. Graded exercises

and readings leading to mastery of grammatical structures and essential vocabulary. Simple conversations based on personal information, courtesy expressions, and greetings in contemporary Urdu. Classroom use of stories, tapes, films, and songs.

**INST-U 507 Beginning Urdu II (4 cr.)** Continuation of the first semester. The writing system of Urdu and development of reading for mastery of grammatical structures and essential vocabulary. Composing short dialogues on everyday survival topics.

**INST-U 508 Second Year Urdu I (3 cr.)** P: U550 or equivalent proficiency. Urdu short stories, essays, poetry (gazals), dramas, newspapers, and magazine articles, etc., will be utilized for reading. Initiate basic communicative tasks related to daily activities and various situations.

**INST-U 509 Second Year Urdu II (3 cr.)** P: U510 or equivalent proficiency. Promotes rapid reading skills and vocabulary building. Study of grammar is based on Urdu reading material and includes regular grammar drills. Students sharpen composition skills by retelling stories from the reading material orally and in writing. Increase speaking skills to initiate, sustain, and close a general conversation on a range of topics.

**INST-U 510 Advanced Urdu I (3 cr.)** Students will work at systematically developing higher level linguistic functions and cultural literacy. Class is conducted entirely in Urdu. Students will develop and support arguments, working with authentic materials in print, broadcast, and film formats. Students will produce a research paper on a subject of their choosing (with instructor's approval).

**INST-U 511 Advanced Urdu II (3 cr.)** Students will continue to work at systematically developing higher level linguistic functions and cultural literacy. Class is conducted entirely in Urdu. Students will develop and support arguments, working with authentic materials in print, broadcast, and film formats. Students will produce a research paper on a subject of their choosing (with instructor's approval).

### Cross-Listed Courses

The Dhar India Studies Program routinely cross-lists courses that can be used for credit towards its degrees in departments such as Central Eurasian Studies, English, Folklore, Geography, History, Political Science, Religious Studies, and others. Please check the program's website ([www.indiana.edu/~isp/](http://www.indiana.edu/~isp/)) for a current list of cross-listed courses.

## Informatics

### Luddy School of Informatics, Computing, and Engineering

Departmental Email: [gradvise@indiana.edu](mailto:gradvise@indiana.edu)

Departmental URL: <https://informatics.indiana.edu>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum



## Degrees Offered

The Doctor of Philosophy (Ph.D.) in Informatics and the Ph.D. Minor in Informatics are offered through the University Graduate School.

In addition, the Informatics Department offers the Master of Science in Human-Computer Interaction and the Master of Science in Informatics (including a track in Animal-Computer Interaction). For other MS degree programs within the School of Informatics, Computing, and Engineering, please see specific Department entries.

All graduate programs offered by the Informatics Department fall under STEM (science, technology, engineering, and mathematics) classification.

### Ph.D. in Informatics

The Ph.D. in Informatics provides a balance among technological, scientific, and social dimensions involved in the development, study, and application of information technology. A student must successfully complete ninety (90) credit hours of graduate-level course work. The specific track requirements are listed below.

### Tracks of Study

Tracks of study approved within the Informatics Department are Animal Informatics, Bioinformatics, Complex Networks and Systems, Computing, Culture, and Society, Health Informatics, Human-Computer Interaction, Intelligent Interactive Systems, Security Informatics, and Virtual Heritage.

### Admission Requirements

All applicants must have a minimum of a four-year bachelor's degree. To apply to the Informatics Department, applicants need to complete and submit an online application. Along with the online application, the following supporting materials are required: statement of purpose, resume/CV, three (3) letters of recommendation, transcripts and degree certificates, IELTS or TOEFL scores (required for international students, must be taken within two years of application), and a portfolio (required for all HCI applicants). GRE scores are not required, but students will have the option to include them in their application. For an application to be reviewed, it must be complete.

The admissions committee takes a holistic approach and reviews applications in their entirety. There are no cut-offs for GRE/TOEFL/IELTS test scores or GPA, as the admission committee prefers to use the full information available in the application.

For specific track requirements, please contact [admit2iu@indiana.edu](mailto:admit2iu@indiana.edu).

### Doctor of Philosophy in Informatics

Ninety (90) credit hours are required to earn a Doctor of Philosophy in Informatics. The curriculum includes: core courses, seminars, research rotations, methodology and theory courses, electives in related disciplines, minor courses, and dissertation research courses. We encourage students to also pursue internships and related activities.

There are eighteen (18) required credits, which include I501 and I502, six (6) credits of seminar work (I609 and/

or I709), and six (6) credits of research rotation (I790). The student must take an additional twelve (12) credits of theory and methodology courses applicable to the student's specialty area. These courses can be taken inside or outside the school. The student must also take an additional thirty (30) credits in elective coursework. The required Ph.D. minor and transfer credits are included in this category. The remaining thirty (30) credits will be taken in dissertation credits.

It is possible to transfer up to thirty (30) credit hours of graduate work completed at Indiana University or a graduate program at another university. All transfer credit is subject to approval by the student's advisor and the Informatics Director of Graduate Studies.

### Ph.D. in Informatics Requirements Plus Track-Specific Requirements

**Informatics Core Requirements** (6 cr.): A student must take INFO-I 501 Introduction to Informatics (3 cr.) and INFO-I 502 Human-Centered Research (3 cr.).

**Informatics Seminar Requirement** (6 cr.): A student must take INFO-I 609 Seminar I in Informatics (3 cr.) and/or INFO-I 709 Seminar II in Informatics (3 cr.).

**Informatics Research Rotation Requirement** (6 cr.): A student must complete two (2) INFO-I 790 Informatics Research Rotation (3 cr.). A third rotation will not count for course credit.

**Animal Informatics Track Requirements** (15 cr.): A student in the Animal Informatics track must take INFO-I 511 ACI Methods (3 cr.), INFO-I 512 Direct Observation and Design (3 cr.), INFO-I 513 Usable Artificial Intelligence (3 cr.), INFO-I 514 Seminar in ACI (3 cr.), and INFO-I 590 Prototyping with Arduino Tools (3 cr.).

**Bioinformatics Track Requirements** (6 cr.): A student in the Bioinformatics track must take INFO-I 519 Introduction to Bioinformatics (3 cr.) and INFO-I 529 Machine Learning in Bioinformatics (3 cr.).

**Complex Networks and Systems Track Requirements** (6 cr.): A student in the Complex Networks and Systems track must take INFO-I 601 – Introduction to Complex Networks and Systems (3 cr.) and INFO-I 606 – Network Science (3 cr.).

**Health Informatics Track Requirements (6 cr.):** A student in the Health Informatics track must take INFO-I 527 Mobile and Pervasive Design (3 cr.) and INFO-I 530 Field Deployments (3 cr.).

**Security Track Requirements** (6 cr.): A student must take INFO-I 520 Security for Networked Systems (3 cr.) and INFO-I 533 Systems and Protocol Security and Information Assurance (3 cr.).

**Virtual Heritage Track Requirements** (9 cr.): A student must take INFO-I 587 Introduction to Virtual Heritage (3 cr.), INFO-I 588 Advanced Topics in Virtual Heritage (3 cr.), and INFO-I 698 Research in Informatics: Virtual Heritage Laboratories (3 cr.).

**Theory and Methodology Requirement** (12 cr.): These courses must be appropriate for a Ph.D. in Informatics (12 credits).

**Minor** (6-15cr.): All Informatics doctoral students are required to complete either a minor within the School or

an approved minor outside of the School. Internal and external minors should be appropriate to the student's research as determined by the student's advisory committee. All minors must be approved by the University Graduate School, the Informatics Director of Graduate Studies, and the student's advisor. If a student is pursuing a double major/dual degree, there is no minor requirement.

**Electives** (12-30 cr.): A student must have all electives approved by the student's advisor and the Informatics Director of Graduate Studies prior to enrolling in the course.

**Thesis Reading and Research** (a minimum of 21 cr. and a maximum of 30 cr.): A student must complete 21-30 credits of INFO-I 890.

### Grades

The minimum overall GPA of a grade of B (3.0) for all Ph.D. Informatics courses is required. A student whose semester GPA falls below a grade of B (3.0) will be put on probation. The student must raise their semester and cumulative grade point average of B (3.0) or higher by the end of the following semester. Failure to do so may result in academic dismissal from the program. A student whose cumulative GPA falls below a grade of B (3.0) for two consecutive semesters (excluding summer) may result in academic dismissal from the program.

### Qualifying Examination

Each track in Ph.D. in Informatics may have specific requirements that must be followed by the student in that track. Check with the track director for the specific qualifying examination requirements.

The student who does not successfully pass the examination can retake the exam a second time. The qualifying examination can only be taken twice. The student must pass the qualifying examination before passing on to candidacy until the degree is conferred.

After passing the qualifying examination, the student must remain continuously enrolled beginning the next semester after passing the qualifying exam (excluding the summer sessions).

Candidacy expires seven (7) years from the date that the student passed the qualifying exam. For double majors, candidacy expires eight (8) years from the date that the student passed the qualifying exam.

### Dissertation Proposal

The proposed research for the dissertation must be presented and approved by the student's research committee.

### Final Examination

Oral defense of the dissertation must be approved by the student's research committee and presented at a public colloquium in the school.

### Annual Review

Each academic year, the faculty will evaluate each student's academic progress in the Informatics program during the Graduate Evaluation Day (GED). The student will be evaluated in three areas: Milestones to Complete,

Noteworthy Accomplishments, and Evaluation Summary. In preparation for the GED, all students are required to submit an Annual Report for the previous academic year. The faculty will review each student's Annual Report and submit feedback of the student's academic progress.

### Doctor of Philosophy in Informatics – Double Major

To pursue a double major, there must be a substantive relationship between the two major fields, particularly with respect to the topic of the student's dissertation. Since the Ph.D. in Informatics program is very interdisciplinary spanning many disciplines, it gives students the ability to pursue a double major if so desired. Each department and their respective Deans must approve the double major.

Once a student has the approval of each department and their respective Deans, the student must submit the Application to Change from a Single to a Double Major for the Ph.D. Degree form, (3) both majors must fulfill all degree requirements. In some instances, it may be possible to count the same work toward requirements in both departments, and (4) the student must pass two sets of qualifying examinations.

The student's advisors from both majors determine the exact course of study and examinations. The entire advisory committee negotiates, with the approval of the respective deans, in any area of substantial overlap in the two programs of study and in the examinations.

Ninety (90) credits are required to earn a Doctor of Philosophy with a double major. While judicious program planning may permit completion of some double majors within the ninety (90) credits, another student may accrue additional hours due to the programs of study required for each major. Double majors have one additional year, for a total of eight years, before they are required to take the qualifying examinations. Double majors are not required to complete a minor.

### Minors Offered by SICE

#### Ph.D. Minor in Informatics

**(9 cr.) (External Minor for non-Informatics students only)**

A minor in Informatics requires nine (9) credit hours. The required nine credit hours refer to any three graduate courses suitable for the student's research, decided by the student's advisor (in the student's department) and the Informatics Director of Graduate Studies. Typically, these three graduate courses will include INFO-I 501 Introduction to Informatics (3 cr.) and two other approved Informatics courses available in the Informatics Ph.D. program. For information about the Informatics minor, contact the Luddy SICE Graduate Studies Office (gradvise@indiana.edu).

#### Ph.D. Minor in Animal Informatics

**(9 cr.) (External and Internal Minor)**

The ACI PhD Minor requires 3 courses:

- INFO I514 Seminar in Animal-Computer Interaction (3 cr.)
- INFO I511 Animal-Computer Interaction Methods (3 cr.)
- One elective from the following list (to be amended as needed over time)

## Qualitative Methods and Design

I512 Direct Observation and Design

INFO I527 Mobile and Pervasive Design & CSCI P535 Pervasive Computing

INFO I540: Human-Robot Interaction

## IoT Systems and Physical Fabrication

INFO I590 Prototyping with Arduino Tools

INFO I590 Makerspace: Design and Fabrication

INFO I540: Human-Robot Interaction

INFO I527 Mobile and Pervasive Design & CSCI P535 Pervasive Computing

ENGR E537 Rapid Prototyping for Engineers

## Mobile App Development

INFO I527 Mobile and Pervasive Design & CSCI P535 Pervasive Computing

## Virtual Reality Platform

INFO I590 Intro to Virtual Reality

INFO I590 Creating Virtual Assets

INFO I590 Building Virtual Worlds

INFO I590 Artificial Life in VR

## Data Analytics

INFO I513 Usable Artificial Intelligence

INFO I590 Data Visualization

INFO I526/CSCI P556 Applied Machine Learning

INFO I606 Network Science

CSCI B555 Machine Learning

CSCI B565 Data Mining

ENGR E534 Big Data Applications

ENGR E584 Scientific Visualization

ENGR E511 Machine Learning for Signal Processing

ENGR E533 Deep Learning Systems

## Artificial Intelligence

INFO I590 Artificial Intelligence in VR

INFO I513 Usable Artificial Intelligence

INFO I540: Human-Robot Interaction

CSCI B551 Elements of AI

CSCI B657 Computer Vision

## Ph.D. Minor in Bioinformatics (12 cr.) (External and Internal Minor)

A minor in Bioinformatics requires twelve (12) credit hours. The core curriculum consists of graduate level courses in Informatics. The student may select electives based on personal interests from a broad list of courses in biology, chemistry, computer science, information science, and medical and molecular genetics. The

graduate bioinformatics courses in the School of Informatics, Computing, and Engineering assume a minimal knowledge of cell and molecular biology. That level of understanding could be gained with at least six (6) undergraduate credit hours in molecular biology, genetics, or evolution. However, undergraduate credits do not count towards a Ph.D. degree unless specifically listed in the University Graduate Bulletin without the notation "Not for graduate credit." For information about the Bioinformatics minor, contact the Luddy SICE Graduate Studies Office ([gradvise@indiana.edu](mailto:gradvise@indiana.edu)).

**NOTE:** Undergraduate credits do not count towards a Ph.D. degree unless specifically listed in the University Graduate School Bulletin as a course that may be taken for graduate credit. Before enrolling in an undergraduate course, please consult the Luddy SICE Graduate Studies Office.

## Ph.D. Minor in Complex Networks and Systems (9 cr.) (External and Internal Minor)

A minor in Complex Networks and Systems requires nine (9) credit hours. Both INFO-I 609 and INFO-I 709 are required. The student may choose among the following courses to obtain the degree:

- INFO-I 609 Advanced Seminar I in Informatics: Human Computer Interaction (3 cr.)
- INFO-I 709 Advanced Seminar II in Informatics: Human Computer Interaction (3 cr.)
- INFO-I 585 Biologically inspired Computing (3 cr.)
- INFO-I 586 Artificial Life as an Approach to Artificial Intelligence (3 cr.)
- INFO-I 601 Introduction to Complex Networks and Systems (3 cr.)
- INFO-I 690 Mathematical Methods for Complex Networks and Systems (3 cr.)

In consultation with both the Complex Networks and Systems Core director and the student's advisor; a student may apply additional classes toward the degree. For information about the Complex Networks and Systems minor, contact the Luddy SICE Graduate Studies Office ([gradvise@indiana.edu](mailto:gradvise@indiana.edu)).

## Ph.D. Minor in Computer Science (9 cr.) (External and Internal Minor)

A minor in Computer Science requires nine (9) credit hours. The student must select a minimum of nine credit hours at the 500 level or above as follows:

- CSCI-A 500-level courses and 400-level courses are excluded (with these exceptions: CSCI-A 595, CSCI-B 401, CSCI-B 403, CSCI-P 423, CSCI-P 436, CSCI-P 438, CSCI-B 441, CSCI-P 442, and CSCI-B 443) are approved for graduate credit toward the Ph.D. minor.
- CSCI-A 593, CSCI-A 594, and any two courses totaling six (6) credit hours or more from the list: CSCI-A 595, CSCI-A 596, plus the computer science courses meeting the requirements of the first option.

For information about the Computer Science minor, contact the Luddy SICE Graduate Studies Office ([gradvise@indiana.edu](mailto:gradvise@indiana.edu)).

### **Ph.D. Minor in Data Science (12 cr.) (External and Internal Minor)**

A minor in Data Science requires twelve (12) credit hours. The Data Science minor consists of four (4) courses (twelve (12) credit hours) of graduate coursework in data science or related topics. The required twelve (12) credit hours include any four courses suitable for the student's research, which are selected by the student, the student's advisor, and the Director of Data Science Academic Programs. For information about the Data Science minor, contact the Luddy SICE Graduate Studies Office ([gradvise@indiana.edu](mailto:gradvise@indiana.edu)).

### **Ph.D. Minor in Human-Computer Interaction (HCI) (12 cr.)**

The Human-Computer Interaction (HCI) minor requires twelve (12) credit hours. Students must take a three (3) credit hour introductory HCI graduate course either from Informatics or Information Library Science: INFO-I 541 Human-Computer Interaction Design (3 cr.) or ILS-Z 516 Introduction to HCI (3 cr.). Additionally, students must take nine (9) credit hours from at least one department (Informatics, Computer Science, Sociology, etc.) other than the student's home department (Informatics, Computer Science, Sociology, etc.), including courses that include but are not limited to those listed below. All topical seminar classes must be approved by the student's HCI advisor and the Informatics Director of Graduate Studies. A minimum of B (3.0) is required in each course that is to count toward the minor. For information about the HCI Minor, contact the Luddy SICE Graduate Studies Office ([gradvise@indiana.edu](mailto:gradvise@indiana.edu)).

- EDUC-P 544 Applied Cognition and Learning Strategies (3 cr.)
- INFO-I 528 Participatory Design (3 cr.)
- INFO-I 541 Human-Computer Interaction Design (3 cr.)
- INFO-I 542 Foundations of HCI (3 cr.)
- INFO-I 543 Interaction Design Methods (3 cr.)
- INFO-I 544 Experience Design (3 cr.)
- INFO-I 561 Visual Thinking Meaning and Form (3 cr.)
- INFO-I 604 Human-Computer Interaction Design Theory (3 cr.)
- INFO-I 609 Advanced Seminar I in Informatics: Human Computer Interaction (3 cr.)
- INFO-I 709 Advanced Seminar II in Informatics: Human Computer Interaction (3 cr.)
- ILS-Z 515 Information Architecture (3 cr.)
- ILS-Z 516 Human-Computer Interaction (3 cr.)
- ILS-Z 561 User Interface Design for Information Systems (3 cr.)
- ILS-Z 661 Concepts and Contemporary Issues in Human-Computer Interaction (3 cr.)
- ILS-Z 662 Interface Design for Collaborative Information Spaces (3 cr.)
- SPH-K 578 Cognitive Ergonomics (3 cr.)
- MSCH-T 571 Applied Cognitive and Emotional and Psychology Theory (3 cr.)

### **Ph.D. Minor in Information Science (12 cr.) (External and Internal Minor)**

The outside minor in Information Science consists of four courses (twelve (12) credit hours) of graduate coursework in the Department of Information & Library Science.

Coursework for the minor is identified in consultation with the ILS faculty member who serves as the outside member on the student's advisory committee. A qualifying examination is generally not required for the minor in Information Science. For information about the Information Science minor, contact the Luddy SICE Graduate Studies Office ([gradvise@indiana.edu](mailto:gradvise@indiana.edu)).

### **Ph.D. Minor in Security Informatics (9 cr.) (External and Internal Minor)**

A minor in Security Informatics requires nine (9) credit hours, selected from the following courses:

- INFO-I 520 Security for Networked Systems (3 cr.)
- INFO-I 521 Malware Epidemic: Threat and Defense (3 cr.)
- INFO-I 525 Organizational Informatics and Economics of Security (3 cr.)
- INFO-I 533 Systems and Protocol Security and Information Assurance (3 cr.)
- INFO-I 536 Foundational Mathematics of Cybersecurity (3 cr.)
- INFO-I 537 Legal and Social Informatics of Security (3 cr.)

For information about the Security Informatics minor, contact the Luddy SICE Graduate Studies Office ([gradvise@indiana.edu](mailto:gradvise@indiana.edu)).

### **Ph.D. Minor in Social Informatics (12 cr.) (External and Internal Minor)**

Social Informatics (SI) refers to the interdisciplinary study of the design, uses, and consequences of information and communications technologies (ICT) that takes into account their interaction with institutional and cultural contexts. Social Informatics research examines the roles of technologies in social and organizational change and the social shaping of ICT. SI research and SI courses are organized within diverse fields, including information systems, telecommunications, journalism, information science, and political science. One key goal of the field is to shape ICTs and policies relevant to them in order to enhance human communication and lead to more acceptable technological developments at organizational and social levels.

For more information about requirements for the Social Informatics minor, contact the Director of the Rob Kling Center for Social Informatics ([rkcsi.luddy.indiana.edu/ph-d-minor](http://rkcsi.luddy.indiana.edu/ph-d-minor)).

### **Ph.D. Individualized Minor (12 cr. or more in two or more programs) (External and Internal Minor administered by the University Graduate School)**

In addition to the minors that the School of Informatics, Computing, and Engineering offers, the University Graduate School offers an individualized minor which requires a minimum of twelve (12) credits. The University Graduate School must approve an individualized minor prior to enrolling in any courses that are to fulfill the individualized minor requirements.



The student must complete the Request for Individualized Minor form at One.IU.edu prior to taking any courses. Then the University Graduate School must approve the individualized minor, the requirements (i.e. minimum accepted grades), and the examination procedure (if any). The name of the individualized minor cannot be a name of a minor that already exists.

NOTE: Upon approval of the Individualized Minor form, the student is eligible to take the approved courses. If a student wants to "substitute" a course with a non-approved course, the student will need to submit a substitution request prior to taking the course. Therefore, in the "Coursework used to satisfy the minor" section of the Request for Individualized Minor form, the student should include additional possible courses to fulfill the individualized minor requirement.

The student needs to provide a rationale for taking the courses indicated. The courses should form a package leading to a goal relevant to the student's research.

The student must have the individualized minor approved by their advisor, the student's track director, the Informatics Director of Graduate Studies, and the University Graduate School prior to taking these classes.

## Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### SICE Leadership

Raj Acharya\*, School of Informatics, Computing, and Engineering Dean

David Leake\*, Executive Associate Dean

Erik Stolterman Bergqvist\*, Senior Executive Associate Dean

Esfandiar Haghverdi\*, Executive Associate Dean for Undergraduate Education

Selma Šabanovič\*, Associate Dean for Graduate Education

Katherine Hane Connelly\*, Associate Dean for Research

Travis J. Brown\*, Assistant Dean for Innovation, Entrepreneurship, & Commercialization

Katie Siek\*, Informatics Chair

Cassidy Sugimoto\*, Informatics Director of Graduate Studies

### Professors

Jeffrey S Bardzell\*, Shaowen Bardzell\*, Randall D Beer\*, Eli B. Blevins\*, Johan L. Bollen\*, L Jean Camp\*, Katherine Hane Connelly\*, Ying Ding\*, Hamid Ekbai\*, Alessandro Flammini\*, Santo Fortunato\*, Bernard Frischer\*, Dennis Patrick Groth\*, Esfan Haghverdi\*, Filippo Menczer\*, Christena Nippert-Eng\*, Luis M. Rocha\*, Katie A. Siek\*, Cassidy Rose Sugimoto\*, Erik Stolterman Bergqvist\*, and Peter Martin Todd\*, and David J. Wild\*

### Associate Professors

Yong-Yeol Ahn\*, David Crandall\*, Nathan Ensmenger\*, Mary L. Gray\*, Staša Milojevič\*, John C. Paolillo\*, Filippo Radicchi\*, Selma Šabanovič\*, Norman Makoto Su\*, and Justin Wood\*

### Assistant Professor

Chia-Fang (Christina) Chung\*, James Clawson\*, Dana Habeeb\*, Eduardo J. Izquierdo\*, Sameer Patil\*, and Patrick C. Shih\*

### Senior Lecturer

J Duncan, Matthew Hottell, Shabnam Kavousian, Erika Biga Lee, Nina S. Onesti, Daniel Pierz, Jennifer Anne Terrell, and Daniel John Richert

### Lecturer

Bradford Finch Demarest, Matthew Francisco, Chase McCoy, Logan Paul, Roderick Stark, and Joanna Zai

### Adjunct Faculty

Rex Cutshall, Barbara Hillers, Christopher Martin, Alexis Pierce Caudell, Olga Scrivner, Kurt Sieffurt, James Shanahan, Brian Wood

## Courses

- **INFO-I 500 Fundamental Computer Concepts for Informatics (3 cr.)**An Introduction to fundamental principles of computer concepts for Informatics study, including an overview of computer architecture, computer algorithms, fundamentals of operating systems, data structure, file organization and database concepts. INFO I500 is expected to impart the required level of competency in computer science. This course may be waived in lieu of 6 undergraduate credit hours of computer science or informatics coursework, covering areas of programming, discrete structures, and data structures. **Not currently offered.**
- **INFO-I 501 Introduction to Informatics (3 cr.)**P: Graduate standing. This course serves as an intensive introduction to the most central technical tools of Informatics, most importantly, probability and statistics, linear algebra, and numerical optimization. The course weaves in computation, using R, as a uniting theme, while including numerous examples and applications of the techniques presented.
- **INFO-I 502 Human-centered Research Methods in Informatics (3 cr.)**This course surveys a broad range of research methods employed in Informatics, exploring their meta-theoretical underpinnings and exemplifying their application to specific research questions. This course is intended only for Ph.D. students in Informatics and is a required course. Previously listed as Topics Course INFO I590, with titled topic, credit given for only one (either INFO I590 with this titled topic, or INFO I502).
- **INFO-I 504 Social Dimensions of Science Informatics (3 cr.)**Examines ethical, legal, and social issues surrounding contemporary research and practice in science informatics. Topics include the nature of science and technology, the ramifications of recent advances in science informatics, and relevant science policy and research ethics. General knowledge of science



informatics is assumed. **Not currently being offered.**

- **INFO-I 505 Social Media Informatics (3 cr.)** Social media platforms and research on social media are both defined by their applications of algorithms and interpretations of human agents. This course emphasizes the interplay of these elements, drawing on techniques from linguistics and computational approaches such as natural language processing, network modeling and analysis, and vector space modeling.
- **INFO-I 506 Globalization and Information (3 cr.)** Explores the processes that promote and impede
  - movement of human action and informational activities to the most general levels, e.g., the level of the world as a whole. Surveys diverse theories of globalization to identify the best approaches for professional informatics career planning and making information globally accessible. **Not currently being offered.**
- **INFO-I 507 Introduction to Health Informatics (3 cr.)** This is a combined advanced undergraduate and graduate course that provides an introduction to health informatics. By the end of the course, students will be able to describe and apply informatics methods that improve health and well being.
- **INFO-I 512 Direct Observation and Design (3 cr.)** Research methods course focused on the skills of direct observation; the collection, analysis, and representation of observation-based data and its uses in user-centered design. Students carpool for classes held weekly at Indy Zoo, observing orangutans.
- **INFO-I 514 Seminar in Animal-Computer Interaction (3 cr.)** This exploratory seminar is an introduction to ACI. We will draw on faculty and student selected readings, multimedia materials, and guest lectures from current ACI practitioners to see what we think about the ethics, history, state-of-the-art, and possible futures for this broad field of practice.
- **INFO-I 516 Informatics in Disasters and Emergency Response (3 cr.)** This course teaches students the skills needed to design and deploy informatics technologies in emergency response and disaster situations, including practical applications. Specific areas include technology design, situational awareness, threat modeling, and data science. Credit not given for both INFO-I 516 and I 426.
- **INFO-I 519 Introduction to Bioinformatics (3 cr.)** P: One semester programming course or equivalent. Sequence alignment and assembly; RNA structure, protein and molecular modeling; genomics and proteomics; gene prediction; phylogenetic analysis; information and machine learning; visual and graphical analysis bioinformatics; worldwide biologic databases; experimental design and data collection techniques; scientific and statistical data analysis; database and data mining methods; and network and Internet methods.
- **INFO-I 520 Security for Networked Systems (3 cr.)** This course is an extensive survey of system and network security. Course materials cover the threats to information confidentiality, integrity and availability and the defense mechanisms that control such threats. The course provides the foundation for more advanced security courses and hands-on experiences through course projects.
- **INFO-I 521 Malware Epidemic: Threat and Defense (3 cr.)** This course is designed to be research and hands-on oriented. Students are required to read and present research papers that reflect the state of the art in malware-related research and participate in course projects that expose them to the cutting-edge technologies on malware defense. **Not currently being offered.**
- **INFO-I 523 Big Data Applications and Analytics (3 cr.)** The Big Data Applications & Analytics course is an overview course in Data Science and covers the applications and technologies (data analytics and clouds) needed to process the application data. It is organized around rallying cry: Use Clouds running Data Analytics Collaboratively processing Big Data to solve problems in X-Informatics. Credit given for only one of INFO-I 523, I 423, or ENGR-E 534.
- **INFO-I 524 Big Data Software and Projects (3 cr.)** This course studies software HPC-ABDS used in either High Performance Computing or the open source commercial Big Data cloud computing. The student builds analysis systems using this software on clouds and then to use it on a project either chosen by student or selected from list given by instructor. Credit not given for both INFO-I 524 and I 424.
- **INFO-I 525 Organizational Informatics and Economic Security (3 cr.)** Security technologies make explicit organizational choices that allocate power. Security implementations allocate risk, determine authority, reify or alter relationships, and determine trust extended to organizational participants. The course begins with an introduction to relevant definitions (security, privacy, trust) and then moves to a series of timely case studies of security technologies. **Not currently being offered.**
- **INFO-I 526 Applied Machine Learning (3 cr.)** The main aim of the course is to provide skills to apply machine learning algorithms on real applications. We will consider fewer learning algorithms and less time on math and theory and instead spend more time on hands-on skills required for algorithms to work on a variety of data sets.
- **INFO-I 527 Mobile and Pervasive Design (3 cr.)** The aim of this course is to provide students with the ability to design and implement novel interactions with mobile and pervasive technologies. We will discuss interaction paradigms and explore different technologies. Students will design, build, implement and refine mobile and pervasive computing applications for their domain of interest.
- **INFO-I 528 Participatory Design (3 cr.)** Participatory Design is a design approach that democratizes the design process by involving end-users. This course has two objectives: we will survey PD's emergence in the creation of computing systems; we will also explore what participation means in technology design today, in contexts such as international development, citizen science, etc. **Not currently being offered.**

- **INFO-I 529 Machine Learning in Bioinformatics (3 cr.)**P: INFO I519, or equivalent knowledge. The course covers advanced topics in Bioinformatics with a focus on machine learning. The course will review existing techniques such as hidden Markov models, artificial neural networks, decision trees, stochastic grammars, and kernel methods. Examine application of these techniques to current bioinformatics problems including: genome annotation and comparison, gene finding, RNA secondary structure prediction, protein structure prediction, gene expression analysis, proteomics, and integrative functional genomics.
- **INFO-I 530 Field Deployments (3 cr.)**Lab fee. The aim of this course is to provide students with the ability to design, facilitate and analyze in situ user studies with pervasive systems. We will discuss study designs based on the type of systems, in situ evaluation methods, and how to analyze the study data.
- **INFO-I 531 Seminar in Health Informatics (1-3 cr.)**P: Graduate standing. Variable topic. Emphasis is on advanced topics and research in health informatics. Can be repeated once with a different topic, subject to approval of the program director.
- **INFO-I 532 Seminar in Bioinformatics (1-3 cr.)**P: Graduate standing. Variable topic. Emphasis is on advanced topics and research in bioinformatics. Can be repeated with different topics, subject to approval of the Dean.
- **INFO-I 533 Systems & Protocol Security & Information Assurance (3 cr.)**This course looks at systems and protocols, how to design threat models for them and how to use a large number of current security technologies and concepts to block specific vulnerabilities. Students will use a large number of systems and programming security tools in the laboratories.
- **INFO-I 534 Seminar in Human-Computer Interaction (1-3 cr.)**P: Graduate standing. Variable topic. Emphasis is on advanced topics and research in human-computer interaction. Can be repeated once with a different topic, subject to approval of the program director.
- **INFO-I 535 Management, Access, and Use of Big and Complex Data (3 cr.)**Innovation today is emerging from a preponderance of data from sensors, social media, and the Internet. This course covers knowledge representation, data process, and data management for big and complex data. Specific topics include data integration, semantics, and provenance; workflows and pipelines; and distributed noSQL stores. Credit not given for both INFO-I 535 and I 435.
- **INFO-I 536 Foundational Mathematics of Cybersecurity (3 cr.)**P: Knowledge of undergraduate level probability, lined algebra or calculus. Students will learn mathematical tools necessary to understand modern cyber security. The course will cover introductory mathematical material from a number of disparate fields, including probability theory, computational theory, complexity theory, group theory, and information theory. **Not currently offered.**
- **INFO-I 537 Legal and Social Informatics of Security (3 cr.)**This is a case-based course on privacy and security in social contexts. Cases will particularly address the specific designs of technologies (e.g., P3P, PICS) and discuss how different technically feasible design choices would result in distinct regulatory regimes, business strategies, or support different forms of social interaction. This course will focus on specific security and privacy technologies as socio-technical systems.
- **INFO-I 538 Introduction to Cryptography (3 cr.)**Introduction to the foundational primitives of cryptography and implementations. A primary goal of this course will be to understand the security definitions for each primitive, and how they are used in cryptographic protocols. The ethics of insecure or on-the-fly protocol design will be discussed.
- **INFO-I 539 Cryptographic Protocols (3 cr.)**Provides a basic understanding of computer security by looking at how things go wrong and how people abuse the system. Once it is understood how computer systems are attacked, it is possible to propose ways to make the system secure.
- **INFO-I 540 Human Robot Interaction (3 cr.)**This course surveys the field of human-robot interaction (HRI), which involves understanding how people perceive and respond to robots and creating robots that interact naturally with people. We will discuss the design, evaluation and societal significance of interactive robots from a human-centered perspective through readings, discussion and developing HRI prototypes. Credit given for only one of INFO-I 540, I 440 or H 440.
- **INFO-I 541 Introduction to HCI/d (3 cr.)**Human-Computer Interaction Design refers to designing interactive products, services, and experiences. This course offers a holistic and practice-oriented introduction to the field. Working individually and in teams, students will take on an authentic design problem and follow a creative process to achieve design outcomes.
- **INFO-I 542 Foundations of Human Computer Interaction (3 cr.)**Offers a survey overview of the field of Human-Computer Interaction Design. It introduces the main themes of HCI set generally in a historical context. Themes include interaction design, cognitive modeling, distributed cognition, computer-supported cooperative work, data, visualization, ubiquitous computing, affective computing, and domestic computing, among others.
- **INFO-I 543 Interaction Design Methods (3 cr.)**Students will learn basic concepts and methods for usability studies and evaluation of interactive systems as well as apply those methods to actual system design evaluations. This course is not only for understanding the basics and traditional approaches in this area, but also for exploring new ways of evaluating the usability of state-of-the-art technology-based systems such as systems in ubiquitous computing, CSCW, tangible and social computing areas.
- **INFO-I 544 Experience Design (3 cr.)**Accompanying its move from workplace productivity into culture-at-large, HCI is

increasingly concerned with designing engaging user experiences. "Experience Design" is an interdisciplinary course that brings anthropological, philosophical, design, and technological perspectives together to explore novel ways to research, design, and evaluate qualities of user experience.

- **INFO-I 545 Music Information Representation, Search, and Retrieval (3 cr.)**P: Major, minor, or outside area standing in music informatics or music information technology. A comprehensive, comparative study of computer-based representation schemes for music, including those oriented toward music notation, music performance, and music analysis. Overview of musical metadata. Techniques and tools for search and retrieval of music information. Credit not given for both INFO I545 and MUS N564. **Not currently offered.**
- **INFO-I 546 Music Information Processing: Symbolic (3 cr.)**This course deals with both methodology and specific applications that attempt to algorithmically annotate, understand, recognize, and categorize music in symbolic (score like) form. Particular applications will include key finding, harmonic analysis, note spelling, rhythm recognition, meter induction, piano fingering, and various classification problems such as genre or composer identification. The methodology we will employ will be probabilistic and will include ideas from Machine Learning such as optimal classifiers, hidden Markov models, and Bayesian Networks. Students will have computing assignments, present papers, and be expected to implement solutions to problems using a high-level language such as R or Matlab. **Not currently offered.**
- **INFO-I 547 Music Information Processing: Audio (3 cr.)**This course deals with various music analysis and processing problems that use sampled audio as the primary data representation. Discusses digital signal processing, including filtering and its relationship to Fourier techniques. Topics include synthesis, effects processing, score following, blind music recognition, and accompaniment systems. **Not currently offered.**
- **INFO-I 548 Introduction to Music Informatics (3 cr.)**P: Solid understanding of music fundamentals; music theory background recommended. History, issues, and applications in music information technology. Survey of various types of musical information. Introduction to digital musical media, including data standards and processing; database structure and organization standards and processing; database structure and organization of audio-, score-, and text file objects; and discussion of copyright issues. **Not currently offered.**
- **INFO-I 549 Advanced Prototyping (3 cr.)**INFO-I 540 recommended. Lab fee. Prototyping is the activity of exploring a design space and developing design ideas. The course will cover issues surrounding the construction of prototypes (e.g., breadth, depth, look, interaction, low/high, vertical/horizontal, etc.). Students will practice manipulating different prototyping materials, both physical and digital, and learn about different prototype evaluation techniques.
- **INFO-I 552 Ind Study in Bioinformatics (1-3 cr.)**Permission of instructor and completion of at least one 500-level informatics course. Independent readings and research under the direction of a faculty member culminating in a written report. May be repeated for a maximum of 3 times and 9 credit hours.
- **INFO-I 553 Ind Study in Chem Informatics (1-3 cr.)**Permission of instructor and completion of at least one 500-level informatics course. Independent readings and research under the direction of a faculty member, culminating in a written report. May be repeated for a maximum of 3 times and 9 credit hours.
- **INFO-I 554 Ind St Human Computer Interaction (1-3 cr.)**Permission of instructor and completion of at least one 500-level informatics course. Independent readings and research under the direction of a faculty member, culminating in a written report. May be repeated for a maximum of 3 times and 9 credit hours.
- **INFO-I 561 Meaning and Form in HCI (3 cr.)**As a continuation of HCI 1 (I541), students will learn methodologies and principles for two types of core activities in human-computer interaction design: a) requirements analysis, contextual inquiry and ethnography as applied to the design of interactive systems in the social context b) conceptual design for the modeling of the interactive structure of the web, hypermedia and software applications.
- **INFO-I 566 Technology Innovation (3 cr.)**This course teaches students the process of innovation, specifically in respect to technological innovation. Students are required to ideate technological concepts given a set of constraints and an opportunity space. The focus of the course is on students inventing and implementing without considering the commercial potential of their innovations. Credit not given for both INFO-I 566 and I 436.
- **INFO-I 567 Design Strategy (3 cr.)**Permission of instructor. The course requires students to apply "the" design process to better understand the factors affecting the success or failure of a design beyond the target audience and problem space in order to iterate on the design to propose solutions to avoid its failure, a process known as strategic design.
- **INFO-I 568 Technology Entrepreneurship (3 cr.)**This course will teach students the importance of systems and design thinking as they relate to building and managing a startup holistically. Students will be required to take a business concept from inception to implementation, at least to the degree required to have a minimum viable product (MVP). Credit not given for both INFO-I 568 and I 438.
- **INFO-I 569 Collective Intelligence (3 cr.)**This course examines the phenomenon of Collective Intelligence from a computational perspective, with theory and applications in the biological, cultural, and economic domains. We will, in particular, focus on the role of social media which is enabling collective intelligence applications at previously unimagined scales.

- **INFO-I 571 Introducing Cheminformatics (3 cr.)** Overview of chemical informatics techniques, including chemical structure coding, chemical data representation, chemical database and search systems, molecular visualization and modeling techniques, and the development of chemical informatics software.
- **INFO-I 572 Computational Chemistry and Molecular Modeling (3 cr.)** This course has two main objectives. 1) To give you a thorough introduction to computational chemistry and modern methods of electronic structure theory that form the basis of molecular modeling today. Mainly, we will concentrate on quantum mechanical methods and pay special attention to Density Functional Theory. Instead of digging deep into the mathematics of quantum chemistry, we will concentrate on practical aspects and examine in detail how computational chemistry can be used to explain chemical reactions and electronic properties. 2) To get your 'Hands Dirty' and conduct real and original research designed to allow you to see the knowledge obtained from the first part of the course in action and apply a wide range of state-of-the-art methods to solve a specific chemical research problem at a high level of scientific rigor.
- **INFO-I 573 Programming for Chemical & Life Science Informatics (3 cr.)** Students will receive a thorough understanding of software development for chem- and bioinformatics, and broaden experience of working in a scientific computing group. Topics include programming for the web, depiction of chemical and biological structures in 2D and 3D, science informatics tool kits, software APIs, AI and machine-learning algorithm development, high performance computing, database management, managing a small software development group, and design and usability of science informatics software.
- **INFO-I 585 Bioinspired Computing (3 cr.)** Biologically-inspired computing is an interdisciplinary field devoted to computational methods modeled after natural design principles. The goal is to produce informatics tools with enhanced robustness, scalability, flexibility and natural human-machine interaction. Topics include: Self-organization, Evolutionary Systems, Cellular Automata, Boolean Networks, L-Systems, Collective and Swarm Behavior, Artificial Immune Systems, Complex Networks. **Not currently being offered.**
- **INFO-I 586 Artificial Life (3 cr.)** Artificial life is a broad discipline encompassing the origins, modeling, and synthesis of natural and artificial living entities and systems. Artificial intelligence, as a discipline, tries to model and understand intelligent systems and behavior, typically at the human level. **Not currently being offered.**
- **INFO-I 587 Introduction to Virtual Heritage (3 cr.)** This course focuses on how digital technology can represent, restore, disseminate, and help with analysis of artifacts such as vases, furniture, sculpture, monuments, and buildings. Other topics covered include the history and methodologies of Virtual Heritage. Each semester a different case study will provide the focus for the course. Credit not given for both INFO-I 587 and I 487.
- **INFO-I 588 Advanced Topics in Virtual Heritage (3 cr.)** This course teaches students how to create simulations of complex cultural heritage environments such as a room and its furnishings, a building, or a settlement. Also covered are the principles of restorations of art, technologies to disseminate 3D models, and the use of simulations as tools of scientific discovery. Credit not given for both INFO-I 588 and I 488.
- **INFO-I 590 Topics in Informatics (1-3 cr.)** P: Graduate standing. Variable topic. Emphasis is on new developments and research in informatics. Can be repeated with different topics, subject to approval of the student's academic advisor.
- **INFO-I 591 Graduate Internship (0-6 cr.)** P: Approval required. Students gain professional work experience in an industry or research organization setting, using skills and knowledge acquired in Informatics course work. May be repeated for a maximum of 6 credit hours.
- **INFO-I 601 Introduction to Complex System (3 cr.)** P: MATH M118, INFO I201, or equivalent course. The course will cover fractals, emergent behavior, chaos theory, cooperative phenomena, and complex networks. Students will learn how to think differently about complex realities, finding ways to understand their complexity and addressing the problems they pose.
- **INFO-I 602 Music Information Processing: Audio (3 cr.)** This course deals with various music analysis and processing problems that use sampled audio as the primary data representation. Digital signal processing including filtering and its relationship to Fourier techniques. Focus on applications including score following, automatic music transcription and annotation from audio, musical accompaniment systems, as well as some useful audio effects. **Not currently being offered.**
- **INFO-H 604 Human Computer Interaction Design Theory (3 cr.)** The course will explore, analyze and criticize underlying assumptions and the rationale behind some of the most influential theoretical attempts in HCI and related fields. The purpose of the course is to make students aware of how theories can influence practice and to develop critical thinking around the role, purpose, and function for theories.
- **INFO-I 605 Social Foundations of Informatics (3 cr.)** Topics include the economics of information businesses and information societies, legal and regulatory factors that shape information and information technology use, the relationship between organization cultures and their use of information and information technology, and ownership of intellectual property. **Not currently being offered.**
- **INFO-I 606 Network Science (3 cr.)** Requires strong working knowledge of mathematics and programming, specifically, proficiency in the topics such as probability, statistics, linear algebra, data structures, and algorithms. Python is the main programming language. This course teaches the fundamental theories, algorithms, and key applications of network science across social and biological systems.

- **INFO-I 609 Advanced Seminar I in Informatics (3 cr.)**P: Advanced graduate standing or consent of instructor. Ph.D. student introduction to major historical and emerging theories, methods, technologies, and applications in Informatics. Provides students with opportunities to explore relevant research literature, results, and applications. Students will develop a profound understanding of leading research approaches and paradigms in their research area.
- **INFO-I 611 Mathematical and Logical Foundations of Informatics (3 cr.)**P: Basic Discrete Mathematics equivalent to MATH M 118, or consent of instructor. An introduction to mathematical methods for information modeling, analysis and manipulation. Topics include proof methods in mathematics, models of computation, counting techniques and discrete probability, optimization, statistical inference and more advanced topics that include but are not limited to Markov chains and random walks, random graphs, and Fourier analysis. **Not currently being offered.**
- **INFO-I 617 Informatics In Life Sciences and Chemistry (3 cr.)**Introduces the fundamental notions in genome and proteome informatics and chemical informatics, focusing on the design and organizing issues in information systems used in those areas. The course is designed for students with no biology or chemistry background, but some knowledge in informatics, who want to learn basic topics in bioinformatics and chemical informatics.
- **INFO-I 619 Structural Bioinformatics (3 cr.)**Informatics approaches addressing the sequence and 3D structure of biological macromolecules (DNA, RNA, Protein), with the objective of improving understanding of the function of these molecules. Topics will include molecular visualization; structure determination, alignment, and databases; and prediction of protein structure, interactions, and function. **Not currently being offered.**
- **INFO-I 621 Computational Techniques in Comparative Genomics (3 cr.)**Summarizes computational techniques for comparing genomes on the DNA and protein sequence levels. Topics include state of the art computational techniques and their applications: understanding of hereditary diseases and cancer, genetic mobile elements, genome rearrangements, genome evolution, and the identification of potential drug targets in microbial genomes. **Not currently being offered.**
- **INFO-I 651 The Ethnography of Information (3 cr.)** Introduces ethnography as a social science methodology and way of knowing with which to study information and its social contexts. Places ethnography in the Informatics knowledge base. Trains students in the use of a broad range of ethnographic techniques relevant to study of automated information technology in use. Designed to be open to students from other programs with sufficient methodological and substantive background. **Not currently being offered.**
- **INFO-I 667 Seminar in Health Informatics I (3 cr.)**INFO-I 531 recommended. This course provides graduate students with advanced knowledge on a wide range of technical and analytical topics in health informatics. The course involves a combination of lectures, practicums, and discussions to engage students in the various aspects of an informatist's role. The topics and presenters will be different each semester.
- **INFO-I 690 Topics in Informatics (1-3 cr.)**P: Graduate standing. Variable topic. Emphasis is on new developments and research in informatics. (May be repeated with different topics, subject to approval of the Dean.)
- **INFO-I 692 Thesis/Project Bioinformatics (1-6 cr.)**Department approval. The student prepares and presents thesis or project in an area of bioinformatics. The product is substantial, typically a multi-chapter paper or carefully designed and evaluated application, based on well-planned research or scholarly project. Details are worked out between student and sponsoring faculty member. May be repeated for a maximum of 6 credit hours.
- **INFO-I 694 Thesis/Project in Human-Computer Interaction (1-6 cr.)**Department approval. The student prepares and presents a thesis or project in an area of human-computer interaction. The product is substantial, typically multi-chapter paper, or a carefully designed and evaluated application, based on well-planned research or scholarly project. Details are worked out between the student and sponsoring faculty member. May be repeated for a maximum of 6 credit hours.
- **INFO-I 698 Research in Informatics (1-12 cr.)**Research not dissertation related under the direction of a member of the graduate faculty. May be repeated for a maximum of 30 credits.
- **INFO-I 699 Independent Study in Informatics (1-3 cr.)**P: Consent of instructor. Independent readings and research for Ph.D. students under the direction of a faculty member, culminating in a written report. More than 12 credit hours requires approval of Academic Advisor, and Director of Graduate Studies. May be repeated for a maximum of 12 credits.
- **INFO-I 709 Advanced Seminar II in Informatics (3 cr.)**P: Advanced graduate standing or consent of instructor. Ph.D. student introduction to major historical and emerging theories, methods, technologies, and applications in Informatics and its sub-areas. Provides students with opportunities to explore relevant research literature, results, and applications. Seminar II, unlike Seminar I, focuses on recent advances in sub-areas of Informatics.
- **INFO-I 790 Informatics Research Rotation (3 cr.)**Working with faculty to investigate research opportunities. May be repeated for a maximum of 6 credits.
- **INFO-I 798 Professional Practicum/Internship (0 cr.)**P: Current enrollment in graduate degree program in Informatics. Participation in graduate level professional training and internship experience.
- **INFO-I 890 Thesis Readings and Research (1-12 cr.)**Research under the direction of a member of the graduate faculty leading to a Ph.D. dissertation. May be repeated for a maximum of 30 credits.



- **INFO-G 599 Thesis Research (0 cr.)** Master's students who have enrolled in 30 or more hours of graduate course work applicable to the degree and who have completed all other requirements of the degree except the thesis of final project of performance may enroll in INFO-G 599. Requires section authorization.
- **INFO-G 901 Advanced Research (3 cr.)** Available to graduate students who have completed all course requirements for their doctorates, have passed doctoral qualifying examinations, and have the requisite number of degree credit hours. This course provides the advanced research students with a forum for sharing ideas and problems under the supervision of a senior researcher.

## Information and Library Science

### School of Informatics, Computing, and Engineering

Departmental E-mail: [ilsmain@indiana.edu](mailto:ilsmain@indiana.edu)

Departmental URL: [www.ils.indiana.edu](http://www.ils.indiana.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

Note: The School of Library and Information and the School of Informatics and Computing merged on July 1, 2013. Historical information for the Department of Information and Library Science can be found under earlier School of Library and Information Science Bulletins.

### Curriculum

[CurriculumCourses Faculty](#)

### Degrees Offered

- Master of Library Science
- 4+1 Masters Program in Library Science
- Master of Information Science
- 4+1 Masters Program in Information Science
- Specialist in Library and Information Science
- Graduate Certificate in Information Architecture
- D. in Information Science

### Dual Master's Degree Programs with the University Graduate School

- Master of Information Science/Master of Library Science
- African American and African Diaspora Studies (M.A.) and Master of Library Science (M.L.S.)
- African Studies (M.A.) and M.L.S.
- Art History (M.A.) and M.L.S.
- Central Eurasian Studies (M.A.) and M.I.S.
- Central Eurasian Studies (M.A.) and M.L.S.
- Comparative Literature (M.A.) and M.L.S.
- English (M.A.) and M.L.S.
- Folklore and Ethnomusicology (M.A.) and M.I.S.
- Folklore and Ethnomusicology (M.A.) and M.L.S.
- History (M.A.) and M.L.S.
- History and Philosophy of Science (M.A.) and M.L.S.
- Latin American and Caribbean Studies (M.A.) and M.L.S.

- Latin American and Caribbean Studies (M.A.) and M.I.S.
- Law (J.D.) and M.L.S.
- Musicology (M.A.) or Music Theory (M.M.) and M.L.S.
- Public Affairs (MPA) and M.I.S.
- Public Affairs (MPA) and M.L.S.
- Russian and East European Studies (M.A.) and M.I.S.
- Russian and East European Studies (M.A.) and M.L.S.

For additional information about admission and degree requirements for degrees granted by the Luddy School of Informatics, Computing, and Engineering see the Luddy School of Informatics, Computing, and Engineering Bulletin.

### Doctor of Philosophy in Information Science Admission Requirements

A bachelor's degree with a minimum grade point average of 3.2 on a 4.0 scale for undergraduate work and a cumulative grade point average of 3.5 or better on a 4.0 scale for any previous graduate level work. The Graduate Record Examination (GRE) is required and must have been taken within three years of application. An approximate minimum GRE score of Verbal = 153, Quantitative = 144 and Analytical Writing = 4.0 is required; however, admission is competitive and higher GRE scores are expected. The Test of English as a Foreign Language (TOEFL) is required for all applicants for whom English is not a native language; a minimum score of 600 on the TOEFL Paper-based Test (PBT) or 100 on the TOEFL Internet-based Test (IBT) is expected. Additional requirements include a personal statement of 800-1000 words; three letters of recommendation from academic or professional sources; a current curriculum vita or résumé; and a writing sample. The writing sample may be a single-authored publication, a technical white paper, a grant proposal, or a paper submitted to fulfill a course requirement.

### Course Requirements

A total of 90 credit hours are required for the Ph.D. in Information Science. At least 60 of the 90 credit hours must be taken at the Bloomington (IUB) or Indianapolis (IUPUI) campuses of Indiana University. ILS courses required for the doctoral degree are: Z701 Introduction to Doctoral Research in Information Science (3 cr.); Z702 Doctoral Research Practicum I (3 cr.); Z703 Doctoral Research Practicum II (3 cr.); Z710 Doctoral Research Practicum III (3 cr.); and three sections of Z764 Seminar in Information Science (total of 9 cr.). Up to 15 credit hours of Z799 Ph.D. Thesis may be counted toward the required 90 credit hours.

### Major

A minimum of 21 credit hours of graduate coursework, approved by the student's advisory committee, must be completed in the major area. The requirement for three sections of Z764 may be counted toward the total 21 credit hours for the major.

### Minor

The outside minor generally consists of 9-15 credit hours. The number of credit hours, specific courses, and other requirements for the outside minor are determined by the minor department.

### Research Skills

The research skills requirement consists of a minimum of 9 credit hours of basic and advanced research courses: one graduate level statistics course (3 credits) and two advanced courses (3 credits each) in graduate-level statistics, research methods, or research design.

### Qualifying Examination

The qualifying examination in ILS consists of an extended written review and analysis of a problem area that addresses critical theoretical and methodological issues relevant to the problem area. The examination includes an oral presentation and defense of the qualifying paper.

### Final Examination

Final examination for the Doctor of Philosophy in Information Science consists of a public oral defense of the doctoral dissertation.

### Ph.D. Minor in Information Science

The outside minor in Information Science consists of four courses (12 credit hours) of graduate coursework in the Department of Information and Library Science. Coursework for the minor is identified in consultation with the ILS faculty member who serves as the outside member on the student's advisory committee. A qualifying examination is generally not required for the minor in Information Science.

### Faculty

#### Department Chair

Ronald Day\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Distinguished Professors

Katy Börner\*, Herbert White\* (Emeritus)

#### Professors

Ronald E. Day\*, Pnina Fichman\*, Noriko Hara\*, Susan C. Herring\*, Howard S. Rosenbaum\*

#### Associate Professors

Xiaozhong Liu\*, John A. Walsh\*

#### Assistant Professors

Kahyun Choi\*, Devin Donaldson\*, Allen Riddell\*

Lecturers

Carol Choksy, Ali Ghazinejad, Younei Soe

#### Adjunct Faculty and Visiting Scholars

\*see [www.ils.indiana.edu](http://www.ils.indiana.edu) for complete list, including:

Michael McRobbie\*

### Senior Fellow

Charles H. Davis

### Graduate Advisors

#### Graduate Program Director

Howard Rosenbaum\*, LH 2118, (812) 855-3250

#### PhD Program Director

Xiaozhong Liu\*, LH 2120 (812) 855 2793

#### MIS Program Director

Howard Rosenbaum\*, LH 2118, (812) 855-3250

#### MLS Program Director

Devan Donaldson\*, LH 2126, (812) 855-9723

### Emeriti

#### Distinguished Professor

Herbert White\* (Emeritus)

### Professors

Blaise Cronin (Emeritus)\*, Daniel Callison\* (Emeritus), Stephen Harter\* (Emeritus), Thomas Nisonger\* (Emeritus), Debora Shaw\* (Emerita)

### Associate Professors

Josefa Abrera\* (Emerita), Shirley Fitzgibbons\* (Emerita), Elin K. Jacob\* (Emerita), Alice Robbin\* (Emerita)

### Courses

- **ILS-Z 501 User Services and Tools (3 cr.)** This course introduces students to the basic information sources and services among different types of libraries and information centers, including academic, public, special, and school media.
- **ILS-Z 502 Collection Development and Management (3 cr.)** Theoretical and pragmatic aspects of the selection, evaluation, and management of collections in all types of libraries. Acquisitions, publishers, and publishing, policy making, and intellectual freedom and censorship are also covered.
- **ILS-Z 503 Representation and Organization (3 cr.)** Introduces students to various disciplines' approaches to the understanding, organization, representation (summarizing), and use of knowledge and information. This survey looks for commonality among the approaches taken in information science, cognitive psychology, semiotics, and artificial intelligence, among others. The goal is to identify criteria for evaluation and improvement of ways to organize and represent information for future retrieval. Information systems currently used in libraries and information centers will be studied as examples. Emphasis in the course is on concepts and ideas, with appropriate attention to terminology and technology.
- **ILS-Z 504 Cataloging (3 cr.)** Historical development and principles essential to the understanding of the conceptual foundations of providing bibliographic access and control of materials and information. Discussion and examples in the application of AACR2r will be presented to illustrate and reflect

current practice. Emphasis is on monographic publications.

- **ILS-Z 505 Evaluation of Resources and Services (3 cr.)**Examines applied evaluation of library resources and services: collections, document delivery, technical and reference services, and overall library performance. Emphasis on developing data collection and analysis skills broadly applicable in ILS contexts, including interviewing, observational and ethnographic techniques, textual analysis, collections evaluation, user experience methods, and methodological and ethical issues .
- **ILS-Z 506 Introduction to Research (3 cr.)**9 credit hours for the MLS program must be completed. The research process, including concepts, design, conduct, and evaluation. Principles and characteristics of approaches and methodologies relevant to research in the field. Examples of data sources and introduction to methods of statistical description and analysis; ethical issues.
- **ILS-Z 510 Introduction to Information Studies (3 cr.)**Information science students are introduced to the dynamic and shifting information professions, complex organizations, and emerging careers in the field. Issues in information management, user-oriented systems design, socio-technical concepts, and usability are major themes for the course.
- **ILS-Z 511 Database Design (3 cr.)**Concerned with a comprehensive view of the processes involved in developing formal access to information from a user-centered point of view. Considers various database models such as flat file, hierarchical, relational, and hypertext in terms of text, sound, numeric, image, and geographic data. Students will design and implement databases using several commercial database management systems.
- **ILS-Z 512 Information Systems Design (3 cr.)**Students identify, design, and implement a significant information design project, such as the redesign of a complex Web site for a local business, library, or nonprofit. Principles and practices of project management are discussed in the context of team-based web site redesign.
- **ILS-Z 513 Organizational Informatics (3 cr.)**Introduces information, technology, and social behavior in the organizational context. Concepts of organization theory, organization behavior, knowledge and information management, and organizational intelligence provide a critical foundation for managing information, people, and information and communication technologies in rapidly changing and dynamic environments.
- **ILS-Z 514 Social Aspects of Information Technology (3 cr.)**The objective of this course is to help students think critically and constructively about information & communication technology and its relationship to work, leisure, and society at large. This course covers a series of concepts and analytical devices as well as empirical case studies related to social consequences of information & communication technologies when it is shaped and used by individuals, public agencies, and businesses.
- **ILS-Z 515 Information Architecture (3 cr.)**Effective information system design integrates knowledge of formal structures with understanding of social, technological, and cognitive environments. Drawing from a range of disciplines, this course investigates how people represent, organize, retrieve, and use information to inform the construction of information architectures that facilitate user understanding and navigation in conceptual space.
- **ILS-Z 516 Human-Computer Interaction (3 cr.)**Examines the human factors associated with information technology and seeks to provide students with knowledge of the variables likely to influence the perceived usability, and hence the acceptability, of any information technology. In so doing it will enable students to progress further towards specialist's work in the important field of human-computer interaction.
- **ILS-Z 517 Web Programming (3 cr.)**The main focus of this course is to instruct students to develop and implement dynamic and interactive web applications. In order to do so, students will learn the basics of an open source programming language both through lectures and hands-on exercises in the lab.
- **ILS-Z 518 Communication in Electronic Environments (3 cr.)**Examines conceptual perspectives on information in organizations, covering topics such as types of information, information activities, organizational culture and information technology, communication as information flow, obtaining and using information from the environment, managing information in specialized extended communities, and ethical and quality issues. Focus varies by type of community studied.
- **ILS-Z 519 Information Analytics (3 cr.)**Theoretical and practical exploration of issues surrounding contemporary information systems. A specific focus will be on evaluating information systems from the user perspective. This approach will cut across disciplinary frameworks: behavioral, cognitive, and social sciences. It will also cover multiple research methods: online surveys, sense-making, critical incident, and network analysis.
- **ILS-Z 520 Information Seeking and Use (3 cr.)**This course introduces students to the concepts of information analysis from a human perspective, focusing particularly on the theoretical models and practical techniques that underpin the field. Sociological and psychological perspectives will be examined in order to develop an approach to the assessment of users' information needs.
- **ILS-Z 523 Science and Technology Information (3 cr.)**General materials, reference books, periodicals, government documents, non-book media in the individual literature of individual disciplines; patents and report literature. Examination of production, publication, distribution, and forms of scientific and technical literature.
- **ILS-Z 524 Adult Readers Advisory (3 cr.)**A review and discussion of trends reflected in subject content and use of book and nonbook materials for patrons in secondary school and public libraries in relation to changing adult needs and the role of libraries in meeting such needs.
- **ILS-Z 525 Government Information (3 cr.)**Survey of government information dissemination in

all formats and at all levels of government. Consideration of government information policy. Primary emphasis given to U.S. government information but with some consideration given to state and local publications in the United States, and those of international organizations.

- **ILS-Z 526 Business Information (3 cr.)** Introduction to basic business materials. Includes resources, research methods, current developments, automated systems, and databases.
- **ILS-Z 531 Subject Access Systems (3 cr.)** P: ILS-Z 503. Principles, development, characteristics, and internal structures of subject access systems. Evaluation of the strengths and weaknesses of the major classification schemes and current subject heading systems.
- **ILS-Z 532 Information Architecture for the Web (3 cr.)** Focuses on Web site development. Students study information architecture as an approach for site organization and design, and learn about project management for complex web development tasks. In lab sessions, students work with advanced markup languages and scripting and develop sites, typically for real clients.
- **ILS-Z 533 Online Searching (3 cr.)** Principles, methods, and techniques of advanced online information retrieval (IR). Characteristics of, and search strategies for, the use of bibliographic, referral, citation, fact, numeric, and full text databases and search systems. Considers standards, use of communications software, front-ends and micro-based IR systems, and creation of in-house databases.
- **ILS-Z 534 Search (3 cr.)** The success of commercial search engines shows that Information Retrieval is a key in helping users find the information they seek. This course provides an introduction to information retrieval theories and concepts underlying all search applications. We investigate techniques used in modern search engines and demonstrate their significance by experiment.
- **ILS-Z 541 Information Policy (3 cr.)** Data creation, publication, dissemination, and use occur in a complex social context. Legal and regulatory structures continue to evolve to control these processes. This course explores international and U.S. principles, laws, and regulations affecting the information industry. Focus varies with the topic; for example, copyright of electronic information sources or transborder data flow. May be repeated for credit when topic varies.
- **ILS-Z 542 International Information Issues (3 cr.)** Comparison of information policies, information standards, and library systems as they affect commercial, scholarly, scientific, and political information contexts.
- **ILS-Z 543 Computer-Mediated Communication (3 cr.)** Computer-mediated communication (CMC) is human-to-human interaction via computer networks such as the Internet. This course examines potentials and constraints of several types of CMC, and considers how content and dynamics are influenced by the systems' technical properties and the cultures that have grown up around their use.
- **ILS-Z 544 Gender and Computerization (3 cr.)** This course explores the relationship between information communication technologies (ICTs) and the gender of the people who design, use, administer, and make policy concerning computer systems and computer networks such as the Internet.
- **ILS-Z 550 Information Institutions and their Management (3 cr.)** Information institutions preserve, conserve, and disseminate information objects. In this course students will learn about libraries, archives, museums, and related organizations, examining their commonalities and differences. Students will study relevant management issues including planning, leading and organizing. They will explore information policies, workflows, ethics, intellectual freedom, laws, and social norms.
- **ILS-Z 552 Academic Library Management (3 cr.)** Background and current trends in the management of academic libraries.
- **ILS-Z 553 Public Library Management (3 cr.)** Background and current trends in the management of public libraries.
- **ILS-Z 554 Library Systems (3 cr.)** Principles for the design, selection, implementation, and management of automated systems of all types in libraries, including systems for technical services processing, reference and user services, and management. Focus is on present and future applications of technology in libraries, their technical features, and their implications for library services and management. When possible, some practical experience with a particular application will be provided.
- **ILS-Z 555 Strategic Intelligence (3 cr.)** Introduces different concepts of strategic intelligence, and different contexts in which these are applied; the idea of intelligence is not restricted to national security, or corporate competition: it can apply at the level of the individual citizen, company, community, or country.
- **ILS-Z 556 Systems Analysis and Design (3 cr.)** This course introduces the basic concepts underlying systems analysis and design, focusing on contextual inquiry/design and data modeling, as well as the application of those analysis techniques in the analysis and design of organizational information systems.
- **ILS-Z 561 User Interface Design for Information Systems (3 cr.)** This course focuses on established principles and methods to design effective interfaces for information systems, emphasizing document retrieval, filtering, visualization, correlation, analysis, and research.
- **ILS-Z 571 Materials for Youth (3 cr.)** Evaluation and use of books, magazines, recordings, films, radio and television broadcasts, and other sources of information and recreation.
- **ILS-Z 572 Youth Services (3 cr.)** This course emphasizes the history, philosophy, and description of children and young adult library services. It takes a holistic look at the role of the youth services librarian from planning and evaluation to specific services and programs, and examines the current and future outlook for this type of librarianship.

Emphasis is on the public library, but cooperation with appropriate services and programs such as school media centers is also discussed.

- **ILS-Z 573 Education of Information Users (3 cr.)**Reviews important educational theories for application to secondary school, college, and university settings which provide training and education programs to teach students skills leading to information literacy. Standards from AASL and ACRL are applied to instructional design and practice including lecture, collaboration with faculty, and evaluation of online tutorials.
- **ILS-Z 574 Information Inquiry for School Teachers (3 cr.)**This course is intended to be an opportunity for teachers and future teachers (including school library media specialists as teachers) to practice methods in critically thinking about information/media, and to use that process as a means to teach their students to be critical reviewers and communicators as well.
- **ILS-Z 580 History of Libraries (3 cr.)**Development of libraries and information services from earliest times to the present, with emphasis on the library in relation to social, economic, cultural, and political trends.
- **ILS-Z 581 Archives and Records Management (3 cr.)**Introduces basic theories, methods, and significant problems in archives and records management. The course also discusses how archivists are responding to the challenge of managing and preserving electronic records.
- **ILS-Z 582 Preservation (3 cr.)**Examines causes of library and archival materials deterioration. Develops conceptual framework and management perspective for preservation programs using technical standards, program development tools, scientific and administrative research reports, and advocacy literature. Explores the new information technologies and media as both preservation tools and challenges.
- **ILS-Z 583 Rare Book Librarianship (3 cr.)**Introduction to the development, organization, and operation of rare book libraries and special collections. Includes an overview of the fundamentals of book collecting, both private and institutional, the antiquarian book trade and auction market, and the profession and practice of rare book librarianship.
- **ILS-Z 584 Manuscripts (3 cr.)**Introduction to the nature, functions, and methodology of the organization and administration of archives and manuscript collections. The course will consist of lectures, discussions, field trips, and special projects.
- **ILS-Z 585 Records Management (3 cr.)**Records management is the management of documentary information for the purposes of supporting the goals and strategy of an organization. This requires understanding of business processes as well as statutes, regulations, the litigation process, disaster recovery and business continuity, and storage architecture.
- **ILS-Z 586 Digital Curation (3 cr.)**Preserving and providing long-term access to digital materials over time is a Grand Challenge. They require constant and ongoing maintenance. This course provides an overview of research, policy and current practices in curating and preserving digital data, gives students practical experience, working with digital materials, and creating digital curation plans.
- **ILS-Z 601 Directed Readings (1-6 cr.)**Permission of instructor. Readings and study in any area of library or information science having an extensive literature. A student may enroll for this course twice in the same semester under different instructors. Normally Z 601 is completed under the direction of a full-time faculty member. Readings done under Z 601 shall not duplicate the content of any course now in the curriculum of Information and Library Science.
- **ILS-Z 602 Directed Research (1-3 cr.)**Permission of instructor. Individual research in a problem in the field of library and information science.
- **ILS-Z 603 Workshop in Library and Information Science (1-3 cr.)**Group study of specific problems in the library and information field. Generally includes a hands-on element. May be repeated for a maximum of 6 credit hours.
- **ILS-Z 604 Topics in Library and Information Science (1-4 cr.)**Study of specific topics in librarianship and information science. May be repeated with different topics.
- **ILS-Z 605 Internship in Library and Information Science (2-6 cr.)**Permission of instructor or faculty advisor. Supervised internship in an information management environment. Professionals in library and information management mentor each graduate student. Sixty on-site hours must be completed for each credit earned. Students document their experiences through journals, abstracts of related publications, and a final presentation. Normally, at least 18 credits must be completed before enrollment. Guidelines and placement sites are available on the ILS Web site. Graded on S/F basis.
- **ILS-Z 621 Audio and Video Sources (3 cr.)**User-focused approach to decision making in the digital audio and video information environment. Emphasizes collection development in support of user services, including access to remote collections and evaluation of multimedia materials and delivery mechanisms, and issues related to emerging technologies. Scope includes adult and young adult audiences.
- **ILS-Z 622 Resources and Services for People with Disabilities (3 cr.)**Access to information is essential for sustained independence of people with disabilities. This course studies materials, services, and assistive technologies to support this access.
- **ILS-Z 623 Genealogy and Local History (3 cr.)**Focuses on developing collections and providing reference services in genealogy and local history.
- **ILS-Z 629 Topics in Information Sources and Services (3 cr.)**The purpose of this course is to provide the opportunity for greater in-depth study of the information and literature sources related to area studies, specific academic disciplines, and/or specific library patron audiences. Examples include Slavic materials, Latin American bibliography, and international legal bibliography. Depending on the potential market, the demand for knowledge



concerning the specific information, literature, and material, and the expertise of available faculty, there is a wide range of possible topics.

- **ILS-Z 631 Advanced Cataloging (3 cr.)**P: ILS-Z 504. Provides extensive background in description and access for electronic and non-book resources.
- **ILS-Z 632 Technical Services (3 cr.)**P: ILS-Z 550. Principles of organization and function of library technical services, including acquisition, cataloging, serials, circulation. Special emphasis on research and development in library systems and technology. Includes file organization, documentation system development, analysis, and evaluation for manual, mechanical, and automated applications.
- **ILS-Z 633 Indexing (3 cr.)**P: ILS-Z 504 or Z 515. Theoretical concepts of subject indexing and thesaurus construction for information retrieval. Examines alternative approaches to traditional indexing techniques. Evaluation and use of appropriate computer software.
- **ILS-Z 634 Metadata (3 cr.)**P: ILS-Z 503 or Z 515. Metadata is essential in designing and developing effective knowledge systems; it facilitates resource discovery, database documentation, and recording digital documents' textual and conceptual histories. This course introduces principles supporting the development and implementation of metadata schemes, focusing on issues of interoperability, internal and external standardization, and evaluation.
- **ILS-Z 635 Ontologies (3 cr.)**P: ILS-Z 634. An ontology is a common semantic conceptualization of reality that is shared by members of a knowledge domain; it supports exchange of knowledge among participants. This course explores formal specifications for ontology construction among systems applications and software agents.
- **ILS-Z 636 Data Semantics (3 cr.)**Explores the technologies of the Semantic Web by examining the application of technologies to WWW information delivery and the principles of formal logic and computation guiding their developments.
- **ILS-Z 637 Information Visualization (3 cr.)**Introduces information visualization, highlighting processes which produce effective visualizations. Topics include perceptual basis of information visualization, data analysis to extract relationships, and interaction techniques.
- **ILS-Z 638 Big Data Analytics for Web and Text (3 cr.)**Basic programming skills recommended. Introduces fundamentals of big data analysis, focusing on its theoretical methodological aspects, including numerical and textual processing, statistical analysis, machine learning, and data retrieval, representation, semantics, and data storage. Open source data-operation frameworks and tools (R, Hadoop, NoSQL) are introduced and demonstrated that students use with real-world data sets.
- **ILS-Z 639 Social Media Mining (3 cr.)**Basic Unix skills recommended. This course provides a graduate-level introduction to social media mining and methods. The course provides hands-on experience mining social data for social meaning extraction (focus on sentiment analysis)

using automated methods and machine learning technologies. We will read, discuss, and critique claims and findings from contemporary research related to SMM.

- **ILS-Z 640 Seminar in Intellectual Freedom (3 cr.)**9 ILS graduate credit hours must be completed. Beginning with a history of and alternative philosophical justifications for censorship, the student is introduced to constraints, obligations, and problems relating to intellectual freedom.
- **ILS-Z 641 Computer-Mediated Discourse Analysis (3 cr.)**Computer-mediated discourse analysis (CMDA), applies theories from linguistic discourse analysis, pragmatics, ethnomethodology, and semiotics in the analysis of discourse-language and language use in computer-mediated communication. This course provides hands-on experience in applying empirical analytical methods, and in interpreting the results.
- **ILS-Z 642 Content Analysis for the Web (3 cr.)**Application of Content Analysis methods to web documents, interactivity features, and links.
- **ILS-Z 643 The Information Industry (1-3 cr.)**This course examines various aspects of the information industry: products, producers, suppliers, trends, and market opportunities. Focus varies with the topic; for example, structural market characteristics, or technical developments and their impact.
- **ILS-Z 644 Information Networks (3 cr.)**In this course we will survey historical and theoretical foundations of network studies, introduce basic concepts in network theory, discuss metrics and models, use software tools to experiment with real-world network data, and study specific applications of network approaches in different information related phenomena. Students will learn how to gather and analyze network data and interpret the results. NodeXL, Pajek and Network Workbench will be used for data gathering and analysis.
- **ILS-Z 645 The Social and Organizational Informatics of Big Data (3 cr.)**This course surveys organizational, legal, political, and social issues surrounding the creation, dissemination and use of big data from the perspective of social and organizational informatics. It focuses on ways in which the integration of big data is changing structure, culture, and work practices in private and public sector organizations.
- **ILS-Z 646 Seminar in Documents and Documentation (3 cr.)**This seminar explores epistemological and genre assumptions of modern documentation and the different events and genre modes by which "information" in many various forms is produced through presentations of "fact." It involves an historical and social survey of the various types of collections of documents and their construction and use.
- **ILS-Z 650 Library Philanthropy Fundraising (3 cr.)**Introduces the role of private giving in support of libraries. Examines personal and corporate philanthropy and their applicability in libraries and information centers.
- **ILS-Z 651 Art Librarianship (3 cr.)**Academic art library administration, collection development, reference services, technical services operations,

facilities, and slide and photograph/picture collections will be emphasized.

- **ILS-Z 652 Digital Libraries (3 cr.)**Examines the design and operation of digital libraries and related electronic publishing practices from a socio- technical perspective. Students develop understanding of major issues, concepts, and trends, enabling them to understand the socio- technical character of digital libraries that can and will be effectively supported and used by various groups.
- **ILS-Z 653 Health Sciences Librarianship (3 cr.)**Health sciences library administration, materials organization, and information services. Emphasis on National Library of Medicine classification, subject headings, printed indexes, and online databases.
- **ILS-Z 654 Law Librarianship (3 cr.)**An introduction to basic legal materials and law librarianship. Primary and secondary resources; indexes; digests and citators; specialized research methods; current developments in automated legal research. History of law libraries in the U.S., their organization and administration. The role of law librarians in law schools and law firms.
- **ILS-Z 655 Music Librarianship (3 cr.)**P: MUS-M 539. Academic music library administration, collection development, technical services operations, record and performing ensemble collections, and reference services will be emphasized.
- **ILS-Z 656 Digital Publishing Standards and Systems (3 cr.)**This course will teach students to design and publish documents on the Web and for common eBook platforms such as iBook and Kindle. We will learn about XML-based document formats (such as TEI, DocBook, Office Open XML) and eXtensible Stylesheet Language Transformations (XSLT), a special-purpose programming language for transforming XML documents into other XML and non-XML formats. We will also learn to develop publications in common eBook formats, including ePub (iBook, etc.), AZW (Amazon Kindle), and KF8/ AZW3 (Amazon Kindle).
- **ILS-Z 657 Digital Humanities (3 cr.)**This course is an introduction to the use of information technology in literary and humanistic study. We will survey the field of digital humanities, or humanities computing as it is sometimes called, from electronic scholarly editing, to the computational analysis of style, theme, and structure, to considerations of the cultural impact of information technology on scholarly discourse, publishing, and the academy. We will also study several specific technologies in detail, including eXtensible Markup Language (XML) and the Text Encoding Initiative. Students will be expected to generate critical work on subjects related to digital humanities and to perform some hands-on exercises using technologies common in digital humanities research.
- **ILS-Z 672 Seminar on Literature for Youth (3 cr.)**An advanced seminar, addressing such topics as: images of minority groups, societal problems (e.g., poverty and family patterns), or informational needs and materials including access and availability of print, nonprint, and computer resources. May be repeated twice for credit when topic varies.
- **ILS-Z 680 The Book to 1450 (3 cr.)**Covers the introduction and development of writing and the history of the manuscript and printed book, from their beginnings to approximately the year 1450. Although there will be some coverage of the non-Western book, the emphasis will be on the history of the book in the West.
- **ILS-Z 681 The Book 1450 to the Present (3 cr.)**A survey of the book from 1450 to the present, with emphasis on the development of the book in the West. Focuses on the physical aspects of the book from the mid-fifteenth through the twentieth centuries, and on some of the many roles of the book in society during this period; also increases awareness of current scholarly trends in the history of the book.
- **ILS-Z 683 Reference Sources for Rare Books (3 cr.)**Introduces and evaluates reference sources that are useful in working with rare books in many fields.
- **ILS-Z 684 Descriptive Bibliography (3 cr.)**The development of the practice of printing, typefounding, and papermaking; the principles and practice of the bibliographical description of printed books, with emphasis on the period to 1880.
- **ILS-Z 685 Building Trustworthy Digital Repositories: Theory and Practice (3 cr.)**Addresses the major issues and challenges facing the archival/records management professions in their quest to manage electronic records. Students will study and evaluate the impact automation has had on archival theory and practice, analyzing various models and strategies archivists have developed to manage electronic records.
- **ILS-Z 690 Capstone in Information and Library Science (3 cr.)**This course integrates theoretical and practical components of the specialization the student is completing. Working with the specialization director(s), the student will determine the scope and extent of the capstone project and publicly present and defend it upon completion..
- **ILS-Z 701 Introduction to Doctoral Research in Information Science (6 cr.)**Role and function of research in society; history of library and information science scholarship; current need for research in LIS; critical analysis of present state of knowledge in the field; relevant research methodologies; barriers to individual initiatives in research.
- **ILS-Z 702 Doctoral Research Practicum I (2 cr.)**P: ILS-Z 701. Student acquires practical hands-on experience with the research process through involvement in a ILS faculty member's research project.
- **ILS-Z 703 Doctoral Research Practicum II (2 cr.)**P: ILS-Z 701 and Z 702. Student acquires practical, hands-on experience with the research process through involvement in a ILS faculty member's research project. The ILS-Z 703 research project should differ substantially from the ILS-Z 702 project with which the student was involved.
- **ILS-Z 706 Introduction to Research (3 cr.)**The research process, including concepts, design, conduct, and evaluation. Principles and

characteristics of approaches and methodologies relevant to research in the field. Examples of data sources and introduction to methods of statistical description and analysis; ethical issues.

- **ILS-Z 710 Doctoral Research Practicum III (3 cr.)**P: ILS-Z 701, Z 702 and Z 703. The student applies methods of research under the supervision of a ILS faculty member. The research project may originate with the student or may be one on which the faculty member seeks student assistance.
- **ILS-Z 763 Research Problems and Methods in Information Science (3 cr.)**P: Permission of instructor. Study of current problems and methodological approaches in information science research.
- **ILS-Z 764 Seminar in Information Science (3 cr.)**Permission of instructor. A doctoral seminar in IS introduces students to topic areas within the domain of information science (e.g., social informatics, scientometrics, information retrieval, representation and organization of resources, philosophy of information, human computer interaction, visualization). It is a reading-and-writing intensive experience and emphasizes depth over breadth.
- **ILS-Z 765 Doctoral Research in Information Science (1-6 cr.)**Independent research or study. A student may enroll for this course more than once in one semester under different instructors.
- **ILS-Z 790 Dissertation Proposal in Information Science (3 cr.)**Must have successfully completed the qualifying exam. Contact PhD Recorder for permission to register. Doctoral students develop their plans for theses subject to criticism by other doctoral students and faculty.
- **ILS-Z 799 Ph.D. Thesis (arr. cr.)**Must have been admitted to candidacy. Contact PhD Recorder for permission to register. See advisor for more information.
- **ILS-G 901 Advanced Research (6 cr.)**Must have 90 credit hours completed. Contact PhD Recorder for permission to register. Please see advisor for more information on Advanced Research. May be repeated a maximum of 6 times.

#### Elective Courses

- CSCI-A 538 Network Technologies and Administration (3 cr.)
- GRAD-G 732 Bibliography of Sub-Saharan Africa (3 cr.)
- FINA-A 575 Research Sources in Art History (2 cr.)
- MUS-M 539 Introduction to Music Bibliography (3 cr.)

## Inner Asian and Uralic National Resource Center

Hamilton Lugar School of Global and International Studies

College of Arts and Sciences

Center E-mail: [iaunrc@indiana.edu](mailto:iaunrc@indiana.edu)

Center URL: <https://iaunrc.indiana.edu>

Inner Asian and Uralic National Resource Center is affiliated with the Hamilton Lugar School of Global and

International Studies (HLS) of the College of Arts and Sciences, dedicated to providing Indiana University graduate students with the intellectual tools they will need to live, work, and thrive in the globalized world of the twenty-first century. Degree programs associated with HLS emphasize language proficiency, cultural competency, and in-depth training in qualitative and quantitative methodologies. HLS students enjoy unparalleled access to a stellar faculty and professional development opportunities. For further information regarding the mission, structure and resources of the Hamilton Lugar School of Global and International Studies see <http://hls.indiana.edu>.

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in The University Graduate School Bulletin.)

### Curriculum

#### Area Certificate in Inner Asian and Uralic Studies

The Inner Asian and Uralic National Resource Center offers a strong interdisciplinary training program for students interested in the languages and societies of Central Eurasia, stretching from the Baltic, Hungary, and Turkey to Central Asia, Tibet, and Mongolia. IU's greatest concentration of expertise and instruction in the area is brought together by the Inner Asian and Uralic National Resource Center. Center faculty pursue both historical and contemporary analysis in a wide range of disciplines, including anthropology, business, comparative literature, economics, folklore, history, journalism, linguistics, music and drama, political science, public administration, and religious studies. Center faculty also offer three levels of instruction in all of the following living languages indigenous to the Center's area: Estonian, Finnish, Hungarian, Kazakh, Kurdish, Kyrgyz, Mongolian, Persian/Tajik, Tibetan, Turkish, Uyghur, and Uzbek. Other living and classical languages of Central Eurasia are offered less frequently, including, Azerbaijani, Chagatai, Dari, Evenki, Mordvin, and Turkmen.

#### Course Requirements

Eighteen (18) credit hours of graduate course work, including 9 credit hours from the Department of Central Eurasian Studies; or in the case of Turkish Studies, the Departments of Near Eastern Languages and Cultures and/or Central Eurasian Studies. All courses are to be selected in consultation with the Inner Asian and Uralic National Resource Center director.

#### Language Requirements

Students will be required to demonstrate intermediate competence in a relevant language. No credit toward the certificate will be awarded for first-year language courses. No more than 6 hours of language courses may be counted toward the certificate.

#### Grades

Minimum of a B (3.0) in all courses that count toward the certificate.

#### Examination

None

## Faculty

### Director

Toivo Raun\* (Central Eurasian Studies)

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Distinguished Professors

Robert Campbell\* (Emeritus, Economics)

### Professors

Michael Alexeev\* (Economics), Matthew Auer\* (Public and Environmental Affairs), İlhan Başgöz\* (Emeritus, Central Eurasian Studies), Christopher I. Beckwith\* (Central Eurasian Studies), Jack Bielasiak\* (Political Science), Laszlo Borhi (Central Eurasian Studies), Maria Bucur-Deckard\* (History), Jamsheed Choksy\* (Central Eurasian Studies), Devin DeWeese\* (Central Eurasian Studies), Ben Eklof\* (History), David Fidler (Law), William Fierman\* (Emeritus, Central Eurasian Studies), Henry Glassie\* (Emeritus, Folklore), Margaret Graves (Art History), Mary Goetze\* (Emerita, Music), Michael Hamburger\* (Geological Sciences), Michael Kaganovich\* (Economics), György Kara\* (Central Eurasian Studies), Paul Losensky\* (Central Eurasian Studies), Marjorie A. Lyles\* (Emerita, Business), John L. Mikesell\* (Emeritus, Public and Environmental Affairs), Vicky Meretsky\* (Public and Environmental Affairs), Christine L. Ogan\* (Emerita, Journalism), K. Anne Pyburn\* (Anthropology), Toivo Raun\* (Central Eurasian Studies), Nazif Shahrani\* (Anthropology, Central Eurasian Studies), Kemal Silay\* (Central Eurasian Studies), Martin Spechler\* (Emeritus, Economics), Frances Trix\* (Emerita, Anthropology), Timothy Waters\* (Law), David Williams\* (Law)

### Associate Professors

Gardner Bovingdon\* (Central Eurasian Studies), Owen V. Johnson\* (Journalism), Marianne Kamp (Central Eurasian Studies) Dodona Kiziria (Emerita, Slavics and East European Languages and Cultures), Jason Mokhtarian (Religious Studies), Richard Nance (Religious Studies), Martha Nyikos\* (Education), Öner Özçelik (Central Eurasian Studies), Kaya Sahin\* (History), Jonathan Schlesinger\* (History), Ron Sela\* (Central Eurasian Studies), Abdulkader Sinno\* (Political Science), Margaret Sutton\* (Education), Herbert Terry\* (Emeritus, Telecommunications)

### Assistant Professors

Kathryn Graber\* (Central Eurasian Studies and Anthropology), Stacey Van Vleet (Central Eurasian Studies), Elizabeth Dunn (Geography)

### Academic Specialists/Senior Lecturers

Cigdem Balim-Harding\* (Emerita, Near Eastern Languages and Cultures), Edward Lazzerini, Emeritus, Central Eurasian Studies), Roman Zlotin (Emeritus, Geography)

### Academic Advisor

Toivo Raun (Central Eurasian Studies), GISB 3006, raunt@indiana.edu

## Courses

### Anthropology

E455 Anthropology of Religion

E600 Seminar in Cultural and Social Anthropology

### Business

D503 International Business Environment

D504 Operations of International Business

D545 East Europe and Russia Transition

D594 Competitive Strategic Global Industries

D595 Management of Transnational Corporations

### Central Eurasian Studies

R501 The Baltic States since 1918

R502 Finland in the 20th Century

R504 Modern Finnish Literature

R508 Estonian Culture and Civilization

R513 Islam in the Former Soviet Union

R516 Peoples and Cultures of Central Asia

R528 Post-Soviet Transition in Central Asia

R562 Mongolian Civilization and Folk Culture

R563 Mongolian Historical Writings

R570 Introduction to the History of Tibet

R571 Tibet and the West

R572 Sino-Tibetan Relations

R573 The Religions of Tibet

R592 Uralic Peoples & Cultures

R599 Topics in Central Eurasian Studies

R611 Ethnic History of Central Asia

R629 Islamic Hagiography of Central Asia

R661 Mongolian Literature and Folklore

R690 Advanced Readings in Central Eurasian Studies

R710 Seminar in Central Asian Studies (3 cr.)

T690 Introduction to Manchu (3 cr.)

T693 Introduction to Sakha (Yakut)

All language courses in the following languages:

- Azeri
- Chaghatay
- Estonian
- Finnish
- Hungarian
- Kazakh
- Kurdish
- Kyrgyz

- Mongolian
- Classical Mongolian
- Pashto
- Tibetan
- Classical Tibetan
- Classical Old Tibetan
- Turkish
- Ottoman Turkish
- Uyghur
- Uzbek

### **East Asian Languages and Cultures**

E384 East Asian Nationalism and Cultural Identity

E505 Studies in East Asian Society (Topics course)

### **Economics**

E698 Comparative Economics and Economics of Transition

### **Education**

H551 Comparative Education I

H552 Comparative Education II

H560 Education and Change in Societies

### **Art History**

A421 Pagans and Christians: Christian Art in the Roman Empire

### **Folklore**

F440/540 Turkish Art

F600 Asian Folklore and Folk Music

F617 Middle East Folklore and Folk Music

### **Geography**

G427 Geography of Former Soviet Lands

### **History**

C393 Ottoman History

D521 Hungarian History and Civilization to 1711

G582 Imperial China I

G583 Imperial China II

H645 Eastern Europe 1945-1989: Survival and Resistance

H675 Colloquium in East Asian History

### **India Studies**

I501/502 Elementary Sanskrit I/II

I561/562 Intermediate Sanskrit I/II

### **Information and Library Science**

Z610 International Information Issues

Z620 Slavic Bibliography

### **The Media School**

J660 Topics Colloquium

### **Music**

E571 Kodaly Concept I

E 572 Kodaly Concept II

E573 Kodaly Concept III

### **Near Eastern Languages and Cultures**

N545 Introduction to Ancient Near East

N565 Introduction to Islamic Civilization

N695 Graduate Topics in Near Eastern Languages and Cultures

P500/550 Elementary Persian

P600/650 Intermediate Persian

### **Political Science**

Y340 East European Politics

Y385 Russian Political Ideas

Y657 Comparative Politics

### **Religious Studies**

R552 Studies in Buddhism

R554 East Asian Religions

R635 Buddhism in North America

R655 East Asian Buddhism

R658 Methodologies and Methods in Buddhist Studies

R670/770 Buddhist Ethics

R750 Seminar on Indian Buddhist Texts

### **Russian and East European Institute**

R575 Graduate Readings in Russian and East European Study

R600 Proseminar Soviet/East European Area Studies

### **School of Public and Environmental Affairs**

E535 International Environmental Policy

V550 Governmental Finance in Transitional Economies

V551 Trade and Global Competition

V557 International Economic Strategies and Trade Policies

### **Slavics and East European Languages and Cultures**

R553 East European Cinema

In addition to the above, students are encouraged to take the initiative to find other courses that the professor would be willing and able to adapt for IAUNRC certificate credit. (This might be, for example, by agreeing that the student's papers and/or other projects would focus on the IAUNRC region or that the student may do additional reading and writing relevant to the region.)

## **Instructional Systems Technology**

### **School of Education**

**Departmental E-mail:** [istdept@indiana.edu](mailto:istdept@indiana.edu)

**Department URL:** <https://education.indiana.edu/faculty/departments/IST.html>



**Departmental Phone Number:** (812) 856-8450

**Graduate Studies Office E-Mail:** [educate@indiana.edu](mailto:educate@indiana.edu)

**School of Education URL:** [education.indiana.edu/](http://education.indiana.edu/)

**Degrees and Programs:** [education.indiana.edu/graduate/programs/index.html](http://education.indiana.edu/graduate/programs/index.html)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

## Curriculum

### Degree Offered

The Doctor of Philosophy (Ph.D.) degree is offered through the University Graduate School. In addition, the School of Education offers the Master of Science (M.S.) in Education, the Specialist in Education (Ed.S.), and the Doctor of Education (Ed.D.) degrees. For details, see the School of Education Graduate Bulletin.

### Doctor of Philosophy Degree

#### Fields of Study

Instructional Systems Technology

#### Plan of Studies

The Ph.D. degree with a major in education is pursued under the direction of a committee appointed by the University Graduate School and the School of Education. As with other Graduate School doctoral programs, a minimum of 90 credit hours of course work is required. This includes a major (selected from the fields of study listed previously), a minor, a series of research courses, and a dissertation. Written and oral qualifying examinations are taken following course work; a final oral defense of the dissertation completes the program. Up to 30 credit hours of graduate course work may be transferred from other universities, with the approval of the advisory committee and the Graduate Studies Office.

#### Admission

Admission recommendations are made by program area and School of Education admission committees and are based on graduate and undergraduate grades (especially in academic courses), scores on the General Test of the Graduate Record Examination (GRE), and letters of recommendation. The TOEFL examination is required for all international applicants. Online applications may be accessed through the School of Education Office of Graduate Studies Web site at the above URL.

Students earning a Ph.D. degree in education must fulfill all requirements of the University Graduate School (as found in this bulletin) and of the School of Education (as found in the School of Education Graduate Bulletin).

### Ph.D. in Instructional Systems Technology

For more information about this degree, please visit the degree page.

<https://education.indiana.edu/programs/graduate/doctoral/phd-instructional-systems-technology.html>

#### Degree Requirements (90 cr.)

#### Major Requirements (42 cr.)

These courses must be approved on the Plan of Studies by the student's doctoral advisory committee, Department Chair, and the Associate Dean for Graduate Studies. The courses in the major should include:

Instructional Systems Technology Core (18 cr.)

Instructional Systems Technology Electives (24 cr.)

#### Inquiry Requirements (9 cr.)

The Inquiry Core includes a survey course in research methodologies, and beginning courses in statistics, measurement, program evaluation, or in ethnographic, qualitative, quantitative, and historical research methods. Inquiry Core courses are to lay a rudimentary methodological foundation for applied inquiry courses in the major, and for dissertation research.

#### Minor Requirements (12 cr.)

The minor must have integrity in its own right and must complement the major. The minor field must demonstrate wholeness within itself and contribute to the student's overall doctoral program. Minors are normally formulated within a single program area. However, an interdisciplinary or individualized minor is also possible. Interdisciplinary or individualized minors require a written description of the minor's underlying theme along with a rationale for each course's contribution to that theme through the Minor Justification form. This form should be submitted and approved by the Graduate Studies Office prior to enrolling in the minor courses. Major area courses may not be used in the minor.

#### Foundations Requirements (6 cr.)

Options here include any School of Education courses outside of IST. These courses typically are in the areas of educational psychology and educational foundations.

#### Elective Requirements (6 cr.)

Options here include any graduate-level courses approved by the student's doctoral advisory committee.

#### Dissertation Requirements (15 cr.)

795 Dissertation Proposal Preparation (3 cr.)

799 Doctoral Dissertation (12 cr.)

### Ph.D. Minor in Adult Education

The minor in Adult Education is a 12-credit hour minor designed to meet the needs of PhD students in all areas of the IU School of Education and other degrees on campus.

#### Minor Requirements (12 cr. minimum)

#### Required Courses (9 cr.)

Select three courses from the following:

D500 Introduction to Adult Education Theory (3 cr.)

D505 Adult Learning through the Lifespan (3 cr.)

D506 Adult Education Planning and Development (3 cr.)

D512 Seminar in Forms and Forces in Adult Education (3 cr.)

#### Additional Required Courses (3 cr. minimum)

Select at least one course from the following:

D600 Seminar in Teaching-Learning Transaction in Adult Education (3 cr.)

**D625 Topical Seminar in Adult Education (3 cr.)**

One relevant course(s) from other departments or programs may be counted as adult education courses at the discretion of the minor advisor, though no more than one such course may be counted toward the 12 credit minimum.

The doctoral minor in Adult Education does not require a minor qualifying exam.

**Ph.D. Minor in Instructional Systems Technology**

The Instructional Systems Technology Doctoral minor is designed for individuals seeking to expand their knowledge of the field of instructional technology during their doctoral coursework.

**Minor Requirements (12 cr.)**

R711 Readings in Instructional Technology (3 cr.)

Three additional courses in Instructional Systems Technology (9 cr.)

Options here include all Instructional Systems Technology courses, as approved by the student's doctoral advisory committee.

The doctoral minor in Instructional Systems Technology does not require a minor qualifying exam.

**Faculty****Dean**

Professor Anastasia Morrone

**Associate Dean for Graduate Studies**

Professor Sarah Theule Lubienski

**Department Chair**

Professor Anne Leftwich

**Graduate Faculty**

Please visit the Faculty Directory on the School of Education website for an updated listing of faculty.

<https://education.indiana.edu/about/directory/index.html?status=Faculty>

**Faculty**

Curriculum Faculty

**Chair**

Geoffrey Fox

**Associate Chair**

Martin Swany

**Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

**Professors**

Raj Acharya, Katy Borner\*, Geoffrey Fox\*, Judy Qiu\*, Thomas Sterling\*, Martin Swany\*, James Glazier\*

**Associate Professors**

Maria Bondesson-Bolin, Paul Macklin

**Assistant Professors**

Eleftherios Garyfallidis, Alexander Gumennik, Vikram Jadhao, Lei Jiang, Minje Kim

**Bulletins****Luddy School of Informatics, Computing, and Engineering**

**Departmental E-mail:** [isegrad@indiana.edu](mailto:isegrad@indiana.edu)

**Departmental URL:** <https://www.engineering.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

**Curriculum**

Curriculum Faculty

**Ph.D. in Intelligent Systems Engineering Course Requirements**

A total of at least 90 credit hours of graduate-level (500+) coursework is required. These courses should include: (a) at least 24 credits to fulfill the requirements of the ISE major, (b) at least 9 credits to fulfill the requirements of the University Ph.D. minor, and (c) the remaining credits can be received from 500+ courses, independent studies, and research.

**Major Requirements**

The major is to be chosen in one of the seven defined ISE tracks in Bioengineering, Computer Engineering, Cyber-Physical Systems, Environmental Engineering, Molecular and Nanoscale Engineering, Neuroengineering and Intelligent Systems. The major requires 24 credits approved by ISE and includes:

- E500 (1 credit)
- One of E501-507 (3 credits)
- 9 credits of relevance to major
- 11 other engineering credits

Remaining elective credits can be satisfied by IU courses in other units related to the student's area of study in engineering with permission of ISE.

**Qualifying Exam**

The exam consists of a written and an oral component administered by the Ph.D. Advisory Committee. The exam is tailored by the advisory committee for students in each concentration. The qualifying exam is an opportunity for a student to demonstrate grounded, original thinking, thereby demonstrating their readiness and aptitude for Ph.D.-level research. The exam is normally administered at the end of major and minor coursework.

**Dissertation Proposal**

Prior to a student engaging in dissertation research, a research proposal must be approved by the student's research committee. The proposal is to be defended at a public colloquium.

**Ph.D. Minors in Intelligent Systems Engineering**

Doctoral students in other departments may complete a minor in one of 5 tracks within the Intelligent Systems Engineering department by satisfying the following requirements:

**Ph.D. Minor in Bioengineering**

A minor in Bioengineering requires 9 credit hours.

- E504 is required (3 Cr.)
- Choose 2 from any course listed as a Bioengineering track course at the 500 level or above to equal 6 credit hours. These can include E535, E537, E540, E541, E542, E543, E544, E545, E548, E570, E571, E572, and E599 topics course relevant to Bioengineering.

Other courses not listed can be counted toward the minor with consultation of both the Department Chair and advisor.

**Ph.D. Minor in Computer Engineering**

A minor in Computer Engineering requires 9 credit hours.

- E501 is required (3 Cr.)
- Choose 2 from any course listed as a Computer Engineering track course at the 500 level or above to equal 6 credit hours. These can include E510, E512, E513, E514, E515, E516, E517, E518, E519, E533, E534, E536, E621 and E599 topics course relevant to Computer Engineering.

Other courses not listed can be counted toward the minor with consultation of both the Department Chair and advisor.

**Ph.D. Minor in Cyber-Physical Systems**

A minor in Cyber-Physical Systems requires 9 credit hours.

- E502 is required (3 Cr.)
- Choose 2 from any course listed as a Cyber-Physical Systems track course at the 500 level or above to equal 6 credit hours. These can include E512, E513, E514, E515, E522, E523, E525, E526, E533, E537, E545, E621, E623 and E599 topics course relevant to Cyber-Physical Systems.

Other courses not listed can be counted toward the minor with consultation of both the Department Chair and advisor.

**Ph.D. Minor in Molecular and Nanoscale Engineering**

A minor in Molecular and Nanoscale Engineering requires 9 credit hours.

- E505 is required (3 Cr.)
- Choose 2 from any course listed as a Molecular and Nanoscale Engineering track course at the 500 level or above to equal 6 credit hours. These can include E537, E545, E551, E571, and E599 topics courses relevant to Molecular and Nanoscale Engineering.

Other courses not listed can be counted toward the minor with consultation of both the Department Chair and advisor.

**Ph.D. Minor in Neuroengineering**

A minor in Neuroengineering requires 9 credit hours.

- E506 is required (3 Cr.)

- Choose 2 from any course listed as a Neuroengineering track course at the 500 level or above to equal 6 credit hours. These can include E535 and E599 topics course relevant to Neuroengineering.

Other courses not listed can be counted toward the minor with consultation of both the Department Chair and advisor.

**International Studies**

**Hamilton Lugar School of Global and International Studies**

**College of Arts and Sciences**

**Departmental Contact:** [intl@indiana.edu](mailto:intl@indiana.edu); (812) 856-1816

**Departmental URL:** <http://www.indiana.edu/~intlweb/>

The Department of International Studies is affiliated with the Hamilton Lugar School of Global and International Studies (HLS) in the College of Arts and Sciences, dedicated to providing Indiana University graduate students with the intellectual tools they will need to live, work, and thrive in the globalized world of the twenty-first century. Degree programs associated with HLS emphasize language proficiency, cultural competency, and in-depth training in qualitative and quantitative methodologies. HLS students enjoy unparalleled access to a stellar faculty and professional development opportunities. For further information regarding the mission, structure and resources of the Hamilton Lugar School of Global and International Studies, see <http://hls.indiana.edu/>.

**Curriculum**

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

**Degrees Offered**

M.A. in International Studies, B.A./M.A. in International Studies, Ph.D. Minor in Global Studies, Ph.D. Minor in Human Rights

**Special Departmental Requirements**

(see also general University Graduate School Requirements)

**M.A. in International Studies**

The M.A. in International Studies is a two-year program that prepares students for careers in the private as well as the public sectors, including international business and both national and global governing institutions or NGOs. It is also open to students interested in academic and research-oriented careers.

**Course Requirements**

There are 36 credit hours (minimum) of graduate coursework for the M.A. degree including:

- INTL-I701, Interdisciplinary Seminar in Issues and Approaches in Global Studies (3 hours)
- INTL-I705, Human Rights Multidisciplinary Graduate Seminar (3 hours)

- Four additional graduate-level International Studies (IS) courses (12 hours), in consultation with the Director of Graduate Studies
- INTL-I515 (or equivalent), Research Methods in International Studies (3 hours)
- Two graduate-level area studies courses (6 hours), in consultation with the Director of Graduate Studies and based on the student's foreign language expertise and regional focus
- INTL-I680, International Studies Masters Capstone (thesis or project) (3 hours)

#### Additional Requirements

- Two additional semesters of a foreign language or Statistical Analysis
- International Experience (defined as overseas study, or internationally-focused internship or practicum)

In addition to all other requirements, completion of the M.A. degree depends on successful execution of the capstone project: a thesis between 10,000-12,000 words in length..

#### Thesis

Required. The student must select a thesis advisory committee of three faculty members, including a director and two readers, who must be approved by the Director of Graduate Studies. The International Studies Department adheres to thesis format and printing requirements set by the University Graduate School. An International Studies Master's thesis should be between 10,000-12,000 words in length.

As a condition to degree, the thesis must be submitted to ProQuest.

#### M.S. in International Studies

The M.S. in International Studies is a two-year program that prepares students for careers in the private as well as the public sectors, including international business and both national and global governing institutions or NGOs. It is also open to students interested in academic and research-oriented careers with a focus on quantitative analysis.

#### Course Requirements

There are 42 credit hours (minimum) of graduate coursework for the M.S. degree including:

- INTL I701, Introduction to Global Studies (3 hours)
- POLS Y569 Issues and Approaches to World Politics (3 hours)
- Quantitative Methods (3 hours) (selected in consultation with the DGS)
- INTL I550, Global Governance (3 hours)
- ECON E501, International Trade (3 hours)
- Advanced Topics in Quantitative Analysis (6 hours) (selected in consultation with the DGS)
- Two INTL 500-level or above courses in thematic concentration (6 hours)
- Two graduate-level area studies courses (6 hours)
- INTL I680 International Studies Masters Capstone (3 hours)

#### Additional Requirements

- Two additional semesters of a foreign language
- International Experience (defined as overseas study, or internationally-focused internship or practicum)

In addition to all other requirements, completion of the M.A. degree depends on successful execution of the capstone project: a thesis between 10,000-12,000 words in length..

#### Thesis

Required. The student must select a thesis advisory committee of three faculty members, including a director and two readers, who must be approved by the Director of Graduate Studies. The International Studies Department adheres to thesis format and printing requirements set by the University Graduate School. An International Studies Master's thesis should be between 10,000-12,000 words in length.

As a condition to degree, the thesis must be submitted to ProQuest.

#### Integrated B.A./M.A. in International Studies

The 5-year Integrated B.A./M.A. program allows students currently in International Studies to pursue advanced studies and complete both a Bachelor's and a Master's degree consecutively. Current International Studies students may apply to join the B.A./M.A. program in their sophomore year.

#### Course Requirements

In addition to the B.A. requirements, there are 30 credit hours (minimum) of graduate coursework for the M.A. portion of the degree including:

- INTL-I701, Interdisciplinary Seminar in Issues and Approaches in Global Studies (3 hours)
- INTL-I705, Human Rights Multidisciplinary Graduate Seminar (3 hours)
- Three additional graduate-level International Studies (IS) courses (9 hours)
- Three graduate-level area studies courses (9 hours)
- INTL-I515, Research Methods in International Studies, or equivalent (3 hours)
- INTL-I680, International Studies Masters Capstone (thesis) (3 hours)

In addition to all other requirements, completion of the B.A./M.A. degree depends on successful execution of the capstone project: a thesis between 10,000-12,000 words in length. Thesis requirements are the same as noted above for the M.A. degree.

#### Ph.D. Minor in Global Studies

Students in other departments may minor in Global Studies. The minor provides a theoretical and methodological framework for the interdisciplinary study and critical analysis of global phenomena. Each minor student develops an individualized program in consultation with the Director of Graduate Studies and their graduate advisor that best complements and furthers the student's disciplinary and professional academic programs and specific regional interests.

#### Course Requirements

A minimum of 15 credit hours including:



- INTL-I701, Interdisciplinary Seminar in Issues and Approaches to Global Studies

*Note: INTL-I702: Readings in Global Studies is strongly recommended*

- Four electives (12 credit hours) from an approved minor list of courses or as approved by the Director of the Ph.D. Minor.

### Examinations

Students complete the Minor through a capstone project that includes one of five options: (1) a specifically designated course; (2) an international internship; (3) international field work; (4) a substantial paper; or, (5) a question on the student's qualifying examination in the major department.

### Ph.D. Minor in Human Rights

Students in other departments may minor in Human Rights. The curriculum explores the intersection of global and local contexts at the heart of human rights discourse. It takes a holistic and multidisciplinary approach, asking students to be aware of how law, cultural values and practice, social and political institutions, national and supranational bodies, and policy interact, integrate, and conflict with one another to create an international human rights regime and the discourse and practice surrounding it. The program combines Human Rights practicums, as well as an emphasis on theory and research. Students should contact the Director of Graduate Studies in International Studies ([intl@indiana.edu](mailto:intl@indiana.edu)) for additional information.

### Course Requirements

A minimum of 15 credit hours, including:

- Three core courses (9 credit hours)
  - INTL-I705, Human Rights Multidisciplinary Graduate Seminar
  - ANTH-E600, Anthropology of Human Rights
  - LAW-B793, Human Rights or LAW-L793, Seminar in Human Rights
- Two elective courses (6 credit hours) from an approved minor list or as approved by the Director of the Ph.D. minor.

### Examinations

Completion of the minor is based on successfully finishing coursework in three academic areas beyond student's own discipline(s).

### Courses

- INTL-I 500 Topics in Global Studies (3 cr.) Explores a variety of world issues such as politics, religion, and globalization; urbanization, space, and development; and international security in the 21st century. May be repeated with a different topic for a maximum of 12 credit hours.
- INTL-I 502 Seminar in Global Health and Environment (3 cr.) Advanced seminar examining pressing health and environmental challenges around the world, such as deforestation, climate change, and the spread of infectious diseases. Focuses on the interaction of health and

environmental problems that cross national borders and require a multinational or global effort to solve.

- INTL-I 503 Seminar in Global Development (3 cr.) Advanced seminar that focuses on the interaction between social, political, and economic forces and human development at global, national, and subnational scales; introduces theoretical perspectives on economic development and the function of markets.
- INTL-I 504 Seminar in Human Rights and International Law (3 cr.) Advanced seminar that focuses on human rights discourse and the role international law, treaties and conventions play in addressing these rights globally. Course is interdisciplinary in theory and method.
- INTL-I 505 Seminar in International Communication and the Arts (3 cr.) Advanced seminar focusing on the circulation of ideas, images, and artistic expressions across national borders as means of interpersonal and cultural forms of communication. Examines communication as a process governed by culture-specific and institution-specific rules.
- INTL-I 506 Seminar in Identity and Conflict (3 cr.) Advanced seminar in examining concepts of nationalism and state ideology that shape the world's collective identities and contribute to conflicts nationally and internationally.
- INTL-I 510 Seminar in Diplomacy, Security, Governance (3 cr.) Advanced seminar examining the role of international organizations in maintaining global security and promoting global governance. Addresses issues of political and cultural diplomacy and their effect in international disputes.
- INTL-I 515 Research Methods in International Studies (3 cr.) Advanced seminar on research methodology used in international studies. Completion before the student's international experience/internship is strongly recommended.
- INTL-I 545 Practicum in Human Rights Law and International Organizations (1-6 cr.) Advanced seminar and practicum examining the development, structure, and potential of international human rights laws and the institutions designed to protect them, focusing on the theoretical and practical tools needed to effectively engage with the international human rights legal system.
- INTL-I 550 Global Governance (3 cr.) Discussion of debates over global governance. Focus on specific governance topics, including international organizations, law, and NGOs in creating order in global relations.
- INTL-I 680 International Studies Master's Capstone (3 cr.) P:I515 This seminar is designed to consolidate the studies of master's students who have completed all International Studies graduate degree requirements. Students must complete a project that addresses an issue appropriate to international studies.
- INTL-I 701 Interdisciplinary Seminar in Issues and Approaches in Global Studies (3 cr.) This graduate seminar is designed to stimulate students to think



critically about a broad range of theoretical and methodological issues involved in global research, including ethics, qualitative and quantitative approaches, the intersection of the global and local, and research designs from different disciplinary perspectives.

- INTL-I 702 Independent Study in Global Studies (1-4 cr.) Independent research, investigation, and synthesis of scholarship that crosses disciplines. Supervised by a faculty member upon the approval of the department. May be repeated for a maximum of 8 credits.
- INTL-I 705 Human Rights Multidisciplinary Graduate Seminar (3 cr.) This multidisciplinary seminar is the gateway course for the Ph.D. Minor in Human Rights, though students from all graduate programs and schools with interests in human rights are welcome to attend.

## Faculty

### Chair

Purnima Bose\*

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Nick Cullather\*, Hamid Ekbia\*, Stephanie Kane\*, Padraic Kenney\*, William Scheuerman\*

### Associate Professors

Keera Allendorf\*, David Bosco\*, Purnima Bose\*, Gardner Bovingdon\*, Emma Gilligan\*, Nur Amali Ibrahim\*, Stephen Macekura\*, Jessica O'Reilly\*

### Assistant Professors

Hussein Banai, Sarah Bauerle Danzman, Andrew Bell, Michael de Groot, Clémence Pinaud, Jessica Steinberg

### Senior Lecturers

Nicole Kousaleos

### Lecturers

Peter Nemes, Andrea Siqueira

### Professor of International Law Practice

Shruti Rana

### Professors of Practice

Feisal Istrabadi, Mark Minton

### Director of Graduate Studies

Stephen Macekura\*, GA 1021

## Jewish Studies

### College of Arts and Sciences

Departmental E-mail: [uijsp@indiana.edu](mailto:uijsp@indiana.edu)

Departmental URL: <https://jsp.sitehost.iu.edu/index.shtml>

**Departmental Phone:** (812) 855-0453

**Departmental Fax:** (812) 855-4314

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## Curriculum

### M.A. in Jewish Studies

The M.A. in Jewish Studies provides students with the advanced interdisciplinary study and the language background necessary to prepare them for doctoral programs in a disciplinary department or for nonacademic careers in the professional world and nonprofit sector. The program will normally take two years to complete. The program provides students with a working knowledge in one or more languages relevant to the study of Jewish culture (typically Modern Hebrew, Biblical Hebrew, and/or Yiddish), a broad exposure to the academic field of Jewish Studies in a number of different disciplines in the humanities and social sciences, and the analytical skills crucial for doctoral education related to Jewish Studies or employment in the professional world.

The M.A. in Jewish Studies can be combined with a certificate in nonprofit management from the School of Public and Environmental Affairs (SPEA).

### Admission Requirements

Bachelor's degree with evidence of superior ability. Second-year proficiency of Hebrew or another relevant language is desirable but not a requirement for admission.

### Course Requirements

A total of 32 credit hours. Students are required to complete JSTU-H 520 (4 cr.); 16 credits (at least four courses) to be distributed among courses taught by Jewish Studies faculty; and 12 credits (at least three courses) of electives. Of the electives, 3 credits can be in JSTU-J 699 for research towards an M.A. thesis.

### Grades

Only courses that receive a grade of B- or higher will count towards fulfillment of the course requirements. Students must retain an overall average in courses fulfilling the course requirements of B (3.0) or higher.

### Language Requirement

Completion of the Jewish Studies M.A. requires second-year reading proficiency in a language relevant to the student's research interest, normally Modern Hebrew, Biblical Hebrew, or Yiddish. First and second year (elementary and intermediate level) language course credits in the first foreign language do not count towards the degree requirements but may be necessary to demonstrate proficiency. Up to 6 credits in a second relevant language may be counted towards the required 16 credits of courses taught by Jewish Studies faculty.

### M.A. Thesis

To complete the M.A. in Jewish Studies, students will write an M.A. thesis (not to exceed 40 pages or 12,000 words). Students may register for JSTU-J 699 up to twice and will

be examined on the thesis by a committee of three faculty members, at least two of whom must be Jewish Studies faculty.

### **Dual M.A. in Jewish Studies and History**

The combined program will have a total of 52 credit hours, instead of the 62 hours required to attain the two degrees separately. Students will take 5 courses counting towards Jewish Studies and 5 courses counting towards History, as well as 12 credits of electives.

### **Admission Requirements**

Bachelor's degree with evidence of superior ability and completion of the Graduate Record Examination. Second-year proficiency of Hebrew or another relevant language is desirable but not a requirement for admission. Students will have to meet admission requirements in the Department of History (refer to the University Graduate School Bulletin).

### **Course Requirements**

20 credit hours in Jewish Studies, including JSTU-H 520 (4 cr.) and 16 credits (at least four courses) taught by Jewish Studies faculty; 20 credit hours in History, including HIST-H 601 and 16 credits of course work in the Department of History, with a minimum of one seminar and two colloquia; 12 credits (at least three courses) of electives. Courses taken to fulfill requirements in the Department of History can include courses on Jewish history but cannot be identical with the courses counted towards fulfillment of the Jewish Studies requirements.

### **Grades**

Only courses that receive a grade of B- or higher will count towards fulfillment of the course requirements. Students must retain an overall average in courses fulfilling the course requirements of B (3.0) or higher.

### **Language Requirement**

Second-year reading proficiency in one language relevant to the student's research interest, normally Modern Hebrew, Yiddish, or Biblical Hebrew, is required for completion of the degree. Language courses in a language relevant for the student's research interest, normally Modern Hebrew, Yiddish, or Biblical Hebrew, can be counted to fulfill the elective credit requirement.

### **M.A. Thesis and History Field Review**

To complete the Jewish Studies component of the dual M.A., students will write an M.A. thesis (not to exceed 40 pages or 12,000 words). Students may register for JSTU-J 699 up to twice and will complete an oral examination on the thesis by a committee of three faculty members, at least two of whom must be Jewish Studies faculty. In order to complete the History component of the M.A., students will undergo a field review in the Department of History, for which they will submit two papers written for a History course, at least one of which was written in a seminar. Field review papers may not be substantially similar to the thesis.

### **Ph.D. Minor in Jewish Studies**

The Robert A. and Sandra S. Borns Jewish Studies Program supports the study of Jews and Judaism in all its forms from antiquity to the present. The program draws on disciplines including Anthropology,

Comparative Literature, English, Germanic Studies, History, Musicology, Middle Eastern Languages and Cultures, Political Science, and Religious Studies,. Because of the interdisciplinary nature of the Jewish Studies Program, students can structure course work individually, according to their specific areas of interest.

### **Course Requirements**

15 hours of graduate credit in courses on Jewish Studies with a grade of B or higher. All students are required to take a core course, JSTU-H 520 Colloquium in Jewish Studies. No more than two courses may be taken in the student's home department. No more than 6 credit hours of individualized readings can be applied to the minor. No more than 8 hours of transfer credit from another institution may be applied to the minor. Relevant graduate courses from any discipline may be counted toward the minor. Students may not count any courses in their major doctoral degree toward the minor and vice versa. The selection of courses must be approved by the Jewish Studies Director of Graduate Studies.

Note: Some departments offer concentrations in Jewish content within the department. For instance, doctoral students in History can major in Jewish History. Doctoral students in Religious Studies can focus on "Jewish Thought and Culture," "Ancient Mediterranean and Near Eastern Religions," or "Religion in the Americas."

### **Ph.D. Minor in Yiddish**

Students may complete a Ph.D. minor in Yiddish through the Department of Germanic Studies. Requirements include 12 credits, consisting of GER Y502, GER Y503, GER Y504, 3 remaining credits to be chosen from GER Y505, GER Y506, GER Y815, and other courses focusing on non-language topics related to Yiddish.

### **Faculty**

#### **Director**

Judah Cohen\* (Jewish Studies and Jacobs School of Music)

#### **Director of Graduate Studies**

Sarah Imhoff\* (Jewish Studies and Religious Studies)

#### **Director of Undergraduate Studies**

Aziza Khazzoom\* (Jewish Studies and Middle Eastern Languages and Cultures)

### **Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### **Alvin H. Rosenfeld Chair in Jewish Studies**

Laura Carlson Hasler (Jewish Studies and Religious Studies)

#### **Erna B. Rosenfeld Professor in Jewish Studies**

Günther Jikeli (Jewish Studies and Germanic Studies)

#### **Dr. Alice Field Cohn Chair in Yiddish Studies**

Dov-Ber Kerler\* (Jewish Studies and Germanic Studies)

#### **Irving M. Glazer Chair in Jewish Studies**

Alvin H. Rosenfeld\* (Jewish Studies and English)

### **Lou and Sybil Mervis Chair in the Study of Jewish Culture**

Judah Cohen\* (Jewish Studies and Jacobs School of Music)

### **Pat M. Glazer Chair in Jewish Studies**

Mark Roseman\* (Jewish Studies and History)

### **Rudy Professor of Political Science**

Jeffrey C. Isaac\* (Political Science)

### **Professors**

James S. Ackerman\* (Emeritus, Religious Studies), Judah Cohen\* (Jewish Studies and Jacobs School of Music), Paul Eisenberg\* (Emeritus, Philosophy), Stephen Katz\* (Jewish Studies and Middle Eastern Languages and Cultures), Dov-Ber Kerler\* (Jewish Studies and Germanic Studies), Herbert J. Marks\* (Comparative Literature), Michael Morgan\* (Emeritus, Jewish Studies and Philosophy), Mark Roseman\* (Jewish Studies and History), Alvin Rosenfeld\* (Jewish Studies and English)

### **Associate Professors**

Sarah Imhoff\* (Jewish Studies and Religious Studies), Gunther Jikeli (Jewish Studies and Germanic Studies), Aziza Khazzoom\* (Jewish Studies and Middle Eastern Languages and Cultures), Dina Spechler\* (Political Science)

### **Assistant Professors**

Laura Carlson Hasler (Jewish Studies and Religious Studies), Irit Dekel (Jewish Studies and Germanic Studies)

### **Adjunct Professors**

Joëlle Bahloul\* (Emerita, Anthropology), Jack Bielasiak\* (Political Science), Michelle Facos\* (Art History), Halina Goldberg\* (Jacobs School of Music), Susan Gubar\* (Emerita, English), Jeffrey C. Isaac\* (Political Science), Jeremy Schott\* (Religious Studies), Bronislava Volková\* (Emerita, Slavics and East European Languages and Cultures)

### **Teaching Professor and Director of Modern Hebrew Language Program**

Ayelet Weiss, GISB 4009, (812) 855-2338

### **Senior Lecturer in Hebrew**

Michal Maoz-Levy

### **Lecturer in Hebrew**

Dmitry Romashov

### **Post-Doctoral Fellow**

Brian Hillman

### **Courses**

#### **Jewish Studies**

- JSTU-H 500 Topics in Jewish Studies (3 cr.) Intensive study of selected topics and issues in Jewish Studies. May be repeated with different topics for credit.

- JSTU-H 501 Elementary Modern Hebrew I (3 cr.)
- JSTU-H 502 Elementary Modern Hebrew II (3 cr.) P: H 501 or equivalent proficiency.
- JSTU-H 503 Intermediate Modern Hebrew I (3 cr.) P: H 502 or equivalent proficiency.
- JSTU-H 504 Intermediate Modern Hebrew II (3 cr.) P: H 503 or equivalent proficiency.
- JSTU-H 505 Advanced Modern Hebrew I (3 cr.) P: H 504 or equivalent proficiency.
- JSTU-H 506 Advanced Modern Hebrew II (3 cr.) P: H 505 or equivalent proficiency.
- JSTU-H 520 Colloquium in Jewish Studies (4 cr.) This course is an interdisciplinary survey of various methodologies and approaches to the field of Jewish studies.
- JSTU-P 591 Directed Readings in Hebrew (1-6 cr.)
- JSTU-H 595 Directed Readings in Jewish Studies (1-4 cr.) Directed readings in various topics in Jewish Studies; topics, credit hours, and readings to be determined in consultation with faculty member with whom the student wishes to work. May be repeated 5 times for up to 8 credit hours.
- JSTU-J 699 M.A. Thesis in Jewish Studies (1-5 cr.) The thesis should not exceed 40 pages or 12,000 words. Thesis defense before a committee of three faculty members, at least two of whom must be Jewish Studies faculty.
- JSTU-P 598 Internship in Jewish Studies (1-6 cr.) S/F grading. Through internships, students make particular use of their skills, learn new skills, and start to build professional contacts in their field of interest

### **Biblical and Literary Studies**

- IBLS-I 600 Colloquium in Biblical and Literary Studies (4 cr.) (when topic focuses on Hebrew Bible)

### **Comparative Literature**

- CMLT-C 505 Western Literary and Intellectual Traditions to 1500 (4 cr.) (when topic is related to Jewish Studies)
- CMLT-C 545 The Bible and Western Literature (4 cr.) (when topic focuses on Hebrew Bible)

### **English**

- ENG-L 761 American Poetry (4 cr.) (when topic is related to Jewish Studies)
- ENG-L 762 Research in Composition, Literacy, and Culture (4 cr.) (when topic is related to Jewish Studies)
- ENG-L 780 Special Studies in English and American Literature (4 cr.) (when topic is related to Jewish Studies)
- ENG-W 602 Contemporary Theories in Rhetoric and Composition (4 cr) (when topic is related to Jewish Studies)

### European Studies

- EUR-W 605 Selected Topics in West European Studies (1.5-12 cr.) (when topic is related to Jewish Studies)

### Germanic Studies

- GER-Y 501 Beginning Yiddish I (3 cr.)
- GER-Y 502 Beginning Yiddish II (3 cr.) P: Y 501 or consent of instructor.
- GER-Y 503 Intermediate Yiddish I (3 cr.) P: Y 502 or consent of instructor.
- GER-Y 504 Intermediate Yiddish II (3 cr.) P: Y 503 or consent of instructor.
- GER-Y 505 Topics in Yiddish Literature (3 cr.) All topics, including: Fantasy, Realism, and Fiction in Early Modern and Modern "Classic" Yiddish Literature; Love, Soul, and Destiny in Modern Yiddish Literature; Selected Readings in 20th-Century Yiddish Fiction; Yiddish Life: On Page, On Stage, On Screen.
- GER-Y 506 Topics in Yiddish Culture (3 cr.) All topics, including Culture, Memory, and Identity: Yiddish in the Post-Holocaust World; Ghetto, Shtetl, and Beyond: Millennium of the History and Sociology of Yiddish; History and Society of Yiddish.
- GER-Y 815 Individual Readings in Yiddish Studies: Language, Literature and Culture (1-4 cr.)

### History

- HIST-H 620 Colloquium in Modern Western European History (4 cr.) when topic is related to Jewish Studies, including: Approaches to Jewish Studies; A Century of Genocide; Globalization and Jewish History; Historiography of the Holocaust; Jews in Modern Europe; Life after Death: Rebuilding Germany after World War II.
- HIST-H 640 Colloquium in Russian History (4 cr.) (when topic is related to Jewish Studies)
- HIST-H 680 Colloquium in Cultural History (4 cr.) (When topic is related to Jewish Studies)
- HIST-H 685 Colloquium in Near Eastern History (4 cr.) (when topic is related to Jewish Studies)
- HIST-H 720 Seminar in Modern Western European History (4 cr.)
- HIST-H 780 Seminar in Cultural History (4 cr.)

### Middle Eastern Languages and Culture

- MELC-H 575 Introductory Readings in Hebrew Literature (3 cr.)
- MELC-N 511 Foreign Study in Near Eastern Languages and Cultures (2-8 cr.) (When topic is Hebrew)
- MELC-N 587 Modern Hebrew Literature in English (3 cr.)
- MELC-N 588 Recent Hebrew Literature in English (3 cr.)
- MELC-N 591 Directed Readings in Hebrew (1-6 cr.)

- MELC-N 675 The Kibbutz in Fact and Fiction (3 cr.)
- MELC-N 687 Modern Hebrew Literature in Hebrew (3 cr.)
- MELC-N 691 Research in Medieval Hebrew Texts (3 cr.)
- MELC-N 695 Graduate Topics in Near Eastern Languages and Cultures (1-4 cr.) when topic is related to Jewish Studies, including the following: Biblical Themes in Modern Hebrew Literature in English; Gender, Difference, and Israel; Introductory Readings in Hebrew Literature; Israeli Film and Fiction; Modern Hebrew Literature in English; Recent Hebrew Literature in English; Recent Hebrew Literature in Hebrew; S. Y. Agnon and the Jewish Experience.
- MELC-N 708 Seminar in Judaic Literature (3 cr.)

### Religious Studies

- REL-R 511 Religion of Ancient Israel (3 cr.)
- REL-R 521 Studies in Early Christianity (3 cr.) (when topic is related to Jewish Studies).
- REL-R 541 Studies in the Jewish Tradition (3 cr.)
- REL-R 610 Studies in Biblical Literature and Religion (4 cr.) (when topic is related to Jewish Studies)
- REL-R 615 The Bible in Literature Courses (4 cr.)
- REL-R 660 Religion and Culture (4 cr.) (when topic is related to Jewish Studies).
- REL-R 663 Textual Interpretations (4 cr.) (when topic is related to Jewish Studies)
- REL-R 665 Interpretations of Religion (4 cr.) (When topic is related to Jewish Studies)
- REL-R 672 Religious Thought and Ethics (4 cr.) (when topic is related to Jewish Studies)
- REL-R 714 Studies in Jewish Thought and Culture (4 cr.)
- REL-R 763 Textual Interpretations (4 cr.) (when topic is related to Jewish Studies)
- REL-R 793 Advanced Biblical Study (1-4 cr.) (When topic is related to Jewish Studies)

## Journalism

### School of Journalism

Departmental E-mail: [sojgrad@indiana.edu](mailto:sojgrad@indiana.edu)

Departmental URL: <http://mediaschool.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

This legacy program is no longer accepting new applicants. Please see the 2016-2017 Media School



entry for new program requirements related to this area of study.

Master of Arts, Master of Arts for Teachers, dual Master of Arts and Master of Library Science (jointly with the Department of Information and Library Science), dual Master of Arts and Master of Public Affairs, dual Master of Arts and Master of Science in Environmental Science (jointly with the School of Public and Environmental Affairs), dual Master of Arts with Folklore and Ethnomusicology (jointly with the Department of Folklore and Ethnomusicology), dual Master of Arts and J.D. in Law (jointly with the Maurer School of Law), and Doctor of Philosophy.

### Special School Requirements

(See also general University Graduate School requirements.)

### Master's Degrees

#### Master of Arts Degree

Four programs (sequences) are available: digital journalism; global journalism; health and science journalism; political journalism.

### Admission Requirements

(1) A superior record in the undergraduate major from a recognized institution, (2) an appropriate level of achievement on the Graduate Record Examination General Test, (3) three letters of recommendation, and (4) a 500-word statement of purpose.

Superior students who have not majored in journalism or mass communications are encouraged to apply. The school accepts applications for admission to our M.A. program at any time.

### Grades

B (3.0) average or above required.  
Master of Arts Degree

### Course Requirements

A total of 30 credit hours, each sequence with specific requirements. A special arrangement with the Department of Information and Library Science allows a 12 credit minor in that school.

#### Political Journalism Sequence (30 cr.)

- J500 Introduction to Mass Media Research (3 cr.)
- J501 Public Affairs Reporting (3 cr.)
- J502 Quantitative Research Methods (3 cr.)
- J510 Media and Society Seminar (3 cr.)
- J571 Media Theory (3 cr.)
- J572 The Press and the Constitution (3 cr.)
- J660 Public Opinion (3 cr.)
- J673 Government and Media (3 cr.)
- J700 Thesis or Specialized Reporting Project (3 cr.)
- plus a journalism elective (3 cr.)

#### Global Journalism Sequence (30 cr.)

- J500 Introduction to Mass Media Research (3 cr.)
- J502 Quantitative Research Methods (3 cr.)
- J510 Media and Society Seminar (3 cr.)
- J518 International Media Experiences (4 cr.)

- J530 Issues in New Communication Technology (3 cr.)
- J560 Topics Colloquium: Media and International Affairs (3 cr.)
- J560 Topics Colloquium: Foreign News Coverage (3 cr.)
- J614 Communication and National Development (3 cr.)
- J700 Thesis or Specialized Reporting Project (3 cr.)
- plus a journalism elective (3 cr.)

#### Health and Science Journalism Sequence (30 cr.)

- J501 Public Affairs Reporting (3 cr.)
- J502 Quantitative Research Methods (3 cr.)
- J510 Media and Society Seminar (3 cr.)
- J520 Seminar in Visual Communication (3 cr.)
  - or J563 Computerized Publication Design I (3 cr.)
  - or J565 Computerized Publication Design II (3 cr.)
  - or J560 Topics Colloquium: Informational Graphics (3 cr.)
- J554 Science Writing (3 cr.)
- J560 Topics Colloquium: Health Reporting (3 cr.)
- J572 The Press and the Constitution (3 cr.)
- J592 Media Internship with Media Outlets Suggested (3 cr.)
- J700 Thesis or Specialized Reporting Project (3 cr.)
- plus a journalism elective (3 cr.)

#### Digital News Journalism Sequence (30 cr.)

- J505 Intensive Reporting, Writing, and Editing Workshop (3 cr.)
- J510 Media and Society Seminar (3 cr.)
- J516 Digital Journalism Practicum I (6 cr.)
- J565 Computerized Publication Design II (6 cr.)
- J700 Specialized Reporting Project (Capstone) (3 cr.)
- plus 9 additional journalism credits (9 cr.)

(The course requirements listed for the Digital News Journalism Track are tentative. New graduate students in the Digital New Journalism sequence must enroll in J505 and J510 during late summer, before the fall semester. Both of these courses count toward the 30 credit hours required for the Digital News Journalism Sequence.)

### Master of Arts for Teachers Degree

#### Major Field Course Requirements

A minimum of 20 credit hours in journalism, advertising (marketing), and telecommunications. Consult the associate dean for graduate studies for specific degree requirements.

### Dual Master of Arts and Master of Library Science Degrees

#### Admission Requirements

Students must be admitted by both the School of Journalism and the Department of Information and Library Science. Requirements for admission to the School of Journalism are the same as those for the M.A. degree.



## Course Requirements

A total of 21 credit hours in journalism, including J500, J510, J651, a graduate-level reporting course, either a professional skills course or J800, and 6 additional credit hours of graduate journalism electives. Thirty (30) credit hours are required in the Department of Information and Library Science (ILS), including the M.L.S. Foundation courses (18 credit hours), and other required and elective ILS courses (12 credit hours) to bring the total of Information and Library Science credit hours to 30.

### Dual Master of Arts and Master of Public Affairs (M.P.A.)

The School of Journalism and the School of Public and Environmental Affairs collaborate in a combined master's degree program that addresses the demand for specialists who combine public management and public policy with public affairs reporting and writing or the study of media in society. The program prepares students for positions in the media, government, business, and nonprofit organizations. Candidates for the combined degree complete core requirements and elective courses from the School of Journalism. Candidates must be admitted to both schools.

Candidates also complete the core requirements for the M.P.A. and 15 additional credit hours selected from an approved list of courses offered by the School of Public and Environmental Affairs.

#### Program Requirements (57 credit hours)

##### Master of Arts in Journalism Requirements (21 credit hours)

Twenty-one (21) credit hours are required for the Master of Arts in Journalism. For specific requirements, see the School of Journalism Bulletin.

##### Master of Public Affairs Requirements (36 credit hours)

#### Required Courses (21 credit hours)

- SPEA V502 Public Management (3 cr.)
- SPEA V506 Statistical Analysis for Effective Decision Making (3 cr.)
- SPEA V517 Public Management Economics (3 cr.)
- SPEA V540 Law and Public Affairs (3 cr.)
- SPEA V560 Public Finance and Budgeting (3 cr.)
- SPEA V600 Capstone in Public and Environmental Affairs (3 cr.)

#### Specialization Courses (18 credit hours)

Each student is required to develop a specialized concentration comprised of courses approved by a SPEA faculty advisor. Concentration must be in SPEA.

### Dual Master of Arts and Master of Science in Environmental Science (M.S.E.S.)

#### General Requirements

A total of 58 credit hours is required for the dual Master of Arts and Master of Science in Environmental Science (M.S.E.S.).

#### Admission Requirements

Students must be admitted by both the School of Journalism and the School of Public and Environmental Affairs. Requirements for admission to the School of Journalism are the same as those for the M.A. degree.

#### Journalism Course Requirements

Requirements: A total of 21 credit hours in journalism, including J510, J502 (Quantitative Research Methods for Journalists), J572, three graduate level professional-skills classes and 3 additional credit hours of graduate journalism electives.

Note: A student without an undergraduate journalism degree may be required to take J505 Reporting/Editing Workshop.

#### SPEA Course Requirements

Thirty-seven (36) credit hours are required for the M.S.E.S. (Master of Science in Environmental Science).

The M.S.E.S. requirements include E526, E527, E536, E538, E552, V517 plus an additional 18 credits in a concentration area to be decided in consultation with a SPEA MSES advisor (faculty member).

### Dual Master of Arts with Folklore and Ethnomusicology

#### Admission Requirements

Students must be admitted by both the School of Journalism and the Department of Folklore and Ethnomusicology, which is part of the College of Arts and Sciences. Requirements for admission to the School of Journalism are the same as those for the M.A. degree.

#### Journalism Course Requirements

A total of 24 credit hours in journalism, including J505, J510, J502 (Quantitative Research Methods for Journalists), J572, one graduate level visual professional-skills class, two professional-skills classes, and 3 additional credit hours of graduate journalism electives.

#### Folklore and Ethnomusicology Course Requirements

A minimum of 24 credit hours in folklore and ethnomusicology, including: F501; and any one of the following: F516, F517, E522, E529; plus either of the following: F523 or F525; plus five additional Folklore courses (15 credits), must be approved by Folklore adviser prior to enrollment; plus reading proficiency in one modern foreign language; plus a final thesis/project. Students in this dual program are required to complete the thesis/project that is required for the Folklore and Ethnomusicology M.A. They may develop their thesis/project to integrate their Folklore and Ethnomusicology interests and their Journalism interests, with a committee of two Folklore/Ethnomusicology faculty and one or more Journalism faculty.

In addition to the 24 credits required by the School of Journalism and the 24 credits required by Folklore and Ethnomusicology, students must complete at least two additional credit hours to fulfill the university's 50-credit minimum for any dual M.A.

### Dual Master of Arts and J.D. in Law

#### Admission

Students may apply to the School of Journalism on the Bloomington campus at the same time they apply to the Maurer School of Law on the Bloomington campus. Students already enrolled in the Maurer School of Law may apply to the School of Journalism up to the completion of their second year of law study. Students enrolled in School of Journalism may apply to the Maurer School of Law up to the end of their first year of the master's program. Students would customarily spend the first year in the Maurer School of Law and thereafter divide the second, third, and fourth years between the two units.

### **Credit Hours**

The joint program would require a minimum of 79 hours in law and 30 hours in Journalism.

### **Curriculum**

See above curriculum for Master of Arts degree, Research and Teaching Track or the Master of Arts degree, Professional Track.

### **Doctor of Philosophy Degree**

The School of Journalism offers the Doctor of Philosophy degree in mass communications, journalism track.

### **Admission Requirements**

(1) Master's degree from a recognized institution, (2) superior record in the major subject, (3) appropriate level of achievement on the Graduate Record Examination General Test, (4) three letters of recommendation, and (5) a 500-word statement of purpose. Students who have not majored in mass communications at either the bachelor's or master's level are encouraged to apply. Consult the associate dean for graduate studies on whether graduate credit can be granted for course work done at the M.A. level.

The school accepts applications for admission to our Ph.D. program for fall semester only. The deadline for applications is December 1 for international students and January 15 for U.S. students.

### **Course Requirements**

(1) Foundation core of J500, J600, J651, J570 or J571, J555 and one statistics course. (2) Either proficiency in depth in an appropriate language, usually French, German, Russian, or Spanish; or completion of an approved set of three tool-skill courses. With the permission of the director of graduate studies, these courses may be counted in the concentration areas. (3) At least two other approved courses at the 600 level in the School of Journalism. These courses may be counted in the concentration areas. (4) Twenty-one (21) to 27 credit hours in each of two concentration areas; and up to 27 credit hours in electives and dissertation for a minimum of 90 credit hours.

Much of the concentration area course work will be taken in departments outside the School of Journalism. Students, in consultation with their faculty advisors, should construct concentration areas according to their own research interests. The concentration areas may be selected from the following: (1) international communication, (2) history and philosophy of communication, (3) communication law, (4) the media and public policy, (5) economics and media management, (6)

media and social systems, (7) political communication, (8) communication and culture, (9) visual communication, and (10) communication ethics. With the approval of the advisory committee, students may choose other areas of concentration more closely related to their interests. Students should consult their faculty advisors in selecting courses in concentration areas.

### **Grades**

B (3.0) average or above required overall and in School of Journalism course work.

### **Periodic Review**

At the beginning of the second year, members of the graduate faculty together with the student's advisor will meet with the student's first-year instructors to examine the grade and research records of each graduate student to assess the student's strengths and areas in need of attention. Any student whose achievements and potential fall far below standard will be discouraged from further work.

### **Advisory Committee Selection**

During the first semester of the second year of course work, students will select four faculty members to serve on the advisory committee. Most students select one member for the core, one for each of the two concentration areas, and one for methodology. The chair of the advisory committee must be a member of the journalism faculty. One other member of the committee must come from journalism. A least two of the members must be on the graduate faculty, and one must be from outside the journalism and telecommunications faculty. The outside member usually represents one of the concentration areas.

### **Qualifying Examination**

Each student is evaluated for Ph.D. candidacy in the following ways: at the completion of course work, the student will take (1) a four-hour written examination on the foundation core, (2) a problem-solving, take-home examination on methodology, (3) a four-hour written examination on the first concentration area, (4) a four-hour written examination on the second concentration area; and following the written examinations, (5) a comprehensive oral examination administered by the student's advisory committee. (The written and oral examinations must be completed within a period of no more than four weeks.)

### **Research Committee Selection**

The research committee will consist of four faculty members, one from outside the School of Journalism and the Department of Telecommunications. The chairperson and at least one other member of the committee must be journalism faculty. The members may be, but need not be, the same as those who served on the advisory committee, and the chairperson may be the same or different. The chairperson should be a full member of the graduate faculty. All members must be members of the graduate faculty, and at least half the committee must be full members.

### **Final Examination**

Oral, primarily a defense of the dissertation.

## Ph.D. Minor in Journalism

Students outside the School of Journalism must take 12 credit hours of graduate course work in the School of Journalism to earn a minor. Upon consultation with the associate dean for graduate studies, students may organize a minor tailored to their interests, but they must submit the proposed program of study to the Graduate Committee of the School of Journalism for approval.

## Faculty

### Dean

Michael R. Evans\*

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Trevor Brown\* (Emeritus), Claude H. Cookman\*, Dan Drew\* (Emeritus), Jack E. Dvorak\* (Emeritus), Peter Jacobi\* (Emeritus), Shannon E. Martin\*, David P. Nord\* (Emeritus), Christine L. Ogan\* (Emerita), Radhika Parameswaran\*, Carol C. Polsgrove\* (Emerita), Steven Laurence Raymer, David H. Weaver\* (Emeritus), G. Cleveland Wilhoit\* (Emeritus), Lars Willnat

### Associate Professors

David Boeyink\* (Emeritus), Bonnie Jeanne Brownlee, Michael Thomas Conway\*, Jon Paul Dilts\* (Emeritus), Michael Evans\*, Anthony L. Fargo\*, Owen V. Johnson\*, James Kelly, Lesa Hatley Major\*, S. Holly Stocking\* (Emerita)

### Assistant Professors

Hans Ibold, Jae Kook Lee, Emily Metzgar

### Senior Associate Dean for Graduate Studies and Research

Professor Lesa Hatley Major\*, Ernie Pyle Hall 200H, (812) 855-8111

## Courses

**JOUR-J 500 Introduction to Mass Media Research (3 cr.)** Seminar on content analysis, experiments, survey methods, qualitative research, historical and legal methodology. Development of media research proposals.

**JOUR-J 501 Public Affairs Reporting (3 cr.)** Lectures and roundtable discussion of problems in covering public affairs issues at the national, state, and local levels. Emphasis on reporting on government, social welfare agencies, elections, political parties, special interest groups, and other areas of general public interest.

**JOUR-J 502 Quantitative Research Methods for Journalists (3 cr.)** Introduction to social science principles of measurement, sampling, statistical inferences and logic of research design in collection, analysis and interpretation of information used in journalism and mass media.

**JOUR-J 505 Intensive Reporting, Writing, and Editing Workshop (3-6 cr.)** This course introduces graduate students to the fundamental practices and principles of writing, reporting, editing and design for the print media. Students will develop skills in news judgment, document-

based information gathering, interviewing, observation and description, news and feature writing, ethics, page layout, headline writing, copy editing, content editing, and photo editing.

### JOUR-J 510 Media and Society Seminar (3 cr.)

Examination of structure, functions, ethics, and performance of communication and mass media, stressing a review of pertinent research literature. Analysis of media policies and performance in light of communication theory and current economic, political, and social thought.

### JOUR-J 514 International Communication (3 cr.)

Comparative analysis of international media systems. Course topics and geographical regions studied vary from semester to semester.

**JOUR-J 516 Digital News Practicum I (6 cr.)** News production in the WFIU and WTIU studios supervised by School of Journalism faculty.

**JOUR-J 517 Digital News Practicum II (6 cr.)** News production in the WFIU and WTIU studios supervised by School of Journalism faculty.

### JOUR-J 518 International Media Experience (4 cr.)

Travel to or study of media systems beyond domestic environment.

### JOUR-J 520 Seminar in Visual Communication (3 cr.)

Integration of advanced visual communication skills, including photography, writing, and editing. Individual projects in packaging news and public affairs information. Emphasis on experimentation with message forms outside constraints of the traditional news media.

### JOUR-J 525 Colloquium in Scholastic Journalism

**(1-3 cr.)** Examination of problems in teaching journalism and supervising school publications. Topics may include impact on scholastic journalism of changes in educational philosophy, law, financial support, and technology. May be repeated for state certification to teach secondary school journalism, but no more than 6 credits may be counted toward graduate degree.

### JOUR-J 528 Public Relations Management (3 cr.)

Designed to enable students to manage a public relations department. Theories and principles relevant to public relations practiced in agency, corporate, and not-for-profit organizations will be covered. This will include developing goals and objectives, working with clients, developing budgets, and research methods.

### JOUR-J 529 Public Relations Campaigns (3 cr.)

Designed to provide students with the opportunity to develop and execute a Public relations campaign for a local not-for-profit organization. Students will be exposed to relevant Public relations theory and in-depth case study analysis.

### JOUR-J 530 Issues in New Communication Technology (3 cr.)

Study of the political, economic, social, legal, and historical issues involved in the introduction and diffusion of communication technologies. Research on the uses and potential effects of new technologies on the structure and practice of journalism and mass media.

### JOUR-J 531 Public Relations for Nonprofits (3 cr.)

This graduate seminar focuses on how a nonprofit organization creates images and how it shapes its

programs and goals to gain public support. Assignments and readings are designed to foster a theoretical and practical understanding of promotional techniques and campaigns using journalistic and other media.

**JOUR-J 542 Arts, Media, and Society (3 cr.)** Study of issues in arts journalism and the role of the arts in mass media and society. Lectures by guest experts and independent research on current trends and problems in the field, emphasizing the public affairs aspects of the arts.

**JOUR-J 544 Science, Society, and Media (3 cr.)** An examination of science in society, with a particular look at research and commentary on media coverage of science and technology. Reading, reflection, and discussion of both theoretical and practical issues, and independent reading and research on a topic of the student's own choosing.

**JOUR-J 551 Seminar: Reporting the Law (3 cr.)** Study of public affairs aspects of the law. Research and reporting on timely topics pertaining to the courts, the legal profession, and law enforcement agencies particularly as they relate to the social-political-economic order.

**JOUR-J 552 Seminar: Reporting the Arts (3 cr.)** Principles of literary, theater, art, dance, and music reporting and criticism. Emphasis on the preparation of articles for publication.

**JOUR-J 553 Education and the Media (3 cr.)** Study of problems and issues in such areas as school finance, curriculum development, teaching methodology, and the politics of education. Research and reporting on current trends in the field.

**JOUR-J 554 Science Writing (3 cr.)** Exploration of the challenges and opportunities associated with writing about science for nonscientists. Reading and discussion of articles and texts about communicating science to nonscientists, and practical exercises in reporting and writing.

**JOUR-J 555 Teaching Mass Communications in College (3 cr.)** Exploration of the theory and practice of college pedagogy. Specific attention to skills required for teaching mass communications. Includes development of a new course syllabus and teaching portfolio.

**JOUR-J 556 Seminar: Urban Affairs Reporting (3 cr.)** Study of current urban problems, such as air pollution, transportation, inner-city redevelopment, ghetto life, and metropolitan government. Research and reporting on timely topics.

**JOUR-J 560 Topics Colloquium (1-4 cr.)** Topical seminar dealing with changing subjects and material from semester to semester. May be repeated twice for credit with a different topic.

**JOUR-J 563 Computerized Publication Design I (3 cr.)** This publishing design course incorporates typesetting, electronic photo editing, graphics, and page design. Students are instructed in design theory, computer publishing skills, and creative problem solving.

**JOUR-J 565 Computerized Publication Design II (3 cr.)** This advanced publishing design course builds on J563 Computerized Design I and incorporates advanced work in

color, type design, computer illustration, creative problem solving, and an introduction to print production.

**JOUR-J 570 Theory and Research: Individual Level (3 cr.)** Introduction to the theory and research relevant to mass media studies at the individual level of analysis. Corresponds to R541 in the telecommunications department.

**JOUR-J 571 Theory and Research: Macro-Social Level (3 cr.)** Introduction to theoretical orientations and research findings at the macro-social level of analysis.

**JOUR-J 572 The Press and the Constitution (3 cr.)** Seminar on specialized topics concerning the rights and obligations of mass media under the Bill of Rights. Research and discussion on law of privacy, access, and other constitutional problems.

**JOUR-J 573 Ethnographic Reporting and Writing (3 cr.)** This skills course explores the ethnographic, community-based approach to magazine journalism. Students will gain an understanding of how communities invest themselves, and how to report from this perspective.

**JOUR-J 574 Gender and Media (3 cr.)** This course exposes students to work in the broad interdisciplinary arena of gender and media. It will address the complex ways gender conceptions structure the cultural and economic landscape of media, including newspaper, television, magazines, advertising, and photography.

**JOUR-J 575 Student Press Law and Ethics (1-3 cr.)** This course explores legal and ethical dilemmas surrounding high school student media. This course traces the history of the student rights movement, especially concentrating on student press rights and responsibilities.

**JOUR-J 576 Management of School Publications (1-3 cr.)** This course will focus on high school press advertising and management. It examines faculty, administration, and staff relations; management techniques; staff and editorial policies; legal and ethical responsibilities; and trends in the high school press.

**JOUR-J 577 Yearbook Advising (1-3 cr.)** This class focuses on high school yearbook advising. The course will cover yearbook financial management, business contracts, common components of marketing/sales, faculty/administration/staff management, supervising techniques, and legal and ethical responsibilities.

**JOUR-J 592 Media Internship (1-3 cr.)** Professional experience in media. Students hold work assignments with media organizations. Grading is on an S/F basis. Arranged through the associate dean for graduate studies office. This course is eligible for a deferred grade.

**JOUR-J 600 Quantitative Methods in Mass Communication Research (3 cr.)** P: J500 or R500, and one statistics course. Advanced behavioral methods in the analysis of mass communication data. Practice in analyzing data with computerized statistical programs.

**JOUR-J 614 Communication and National Development (3 cr.)** Study of the structure and roles of the mass media in national development and the application of communication theory and technology to the problems of development and social change.



**JOUR-J 624 Russian and East European Area Media Systems (3 cr.)** Investigation of theory and practice of communications systems in the region, including history, news content, institutions, journalists, technology, economic and political pressures, as well as audience and international influences.

**JOUR-J 650 History and Philosophy of the Media (3 cr.)** Lectures and discussion on the origins, the historical growth, and the philosophical roots of the communication media, with particular emphasis on the relationship between the media and political, economic, social, and cultural trends in the United States.

**JOUR-J 651 Qualitative Methods in Mass Communication Research (3 cr.)** Seminar on qualitative, historical, and legal research methods for mass communication research.

**JOUR-J 653 The Media in the Twentieth Century (3 cr.)** Seminar on topics in the history and philosophy of the communication media in the twentieth century, stressing both continuity and change in an age of rapid technological growth for print and electronic media in the United States and in selected areas of the world.

**JOUR-J 655 Ethics and Journalism (3 cr.)** Exploration of the role of ethics in journalism. Using literature that examines ethics in the context of journalism practice, the course will analyze ways journalists attempt to deny or limit the role of ethical values. Special attention to objectivity, freedom, and casuistry.

**JOUR-J 660 Topics Colloquium (3 cr.)** Topical seminar dealing with changing subjects and material from semester to semester. May be repeated twice for credit.

**JOUR-J 672 Topics in Communication Law (3 cr.)** Independent research and roundtable analysis of selected problems in communication law.

**JOUR-J 673 Government and Mass Media (3 cr.)** Independent research and roundtable analysis of political communication and government-media relations.

**JOUR-J 700 Specialized Reporting Project (3 cr.)** This course is eligible for a deferred grade.

**JOUR-J 800 M.A. Thesis or Creative Project (3 cr.)** This course is eligible for a deferred grade.

**JOUR-J 804 Readings and Research in Journalism (arr. cr.)** This course is eligible for a deferred grade.

### Graduate

**GRAD-G 741 Ph.D. Research in Mass Communications (arr. cr.)** This course is eligible for a deferred grade.

**GRAD-G 790 Readings and Research in Mass Communications (1-3 cr.)** This course is eligible for a deferred grade.

## Landscape Studies

### College of Arts and Sciences

**Departmental E-mail:** [landskib@indiana.edu](mailto:landskib@indiana.edu)

**Departmental URL:** [www.indiana.edu/~landskib](http://www.indiana.edu/~landskib)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements

contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Ph.D. Minor in Landscape Studies

The Landscape Studies Program encourages interdisciplinary study and critical analysis of landscape. The program offers training in this important multidisciplinary field that has grown in importance in the last decade. The program is one of a very few programs in the U.S. that focus explicitly on Landscape Studies at the graduate level.

#### Admission and Program of Study

In collaboration with the Landscape Studies director and the student's major program advisor, students are required to submit a Program of Study to the Landscape Studies Advisory Committee for final approval. The Program of Study will provide the rationale for the student's proposed curriculum and will list the courses, with alternative selections in the event such courses are not offered on a timely basis, that will serve as the student's minor program. With the Landscape Studies Advisory Committee's approval of the Program of Study, the student will become officially enrolled in the Landscape Studies Program.

#### Ph.D. Minor Requirements

Requirements for the Landscape Studies Ph.D. minor encourage graduate students to develop a program of academic inquiry that complements their doctoral program and takes advantage of the wide range of College of Arts and Sciences faculty with training in the fields of landscape geography, environmental history, landscape literature and art, and landscape architecture. Each program is developed in consultation between the student and the Landscape Studies director. Students must complete L800: Seminar in Landscape Studies, a suitable theory course, an approved elective course, and a directed readings course focused on landscape studies with a member of the Landscape Studies faculty and approved by the Landscape Studies director for a total of 12 credit hours. Of hours counted toward the minor, at least 9 must be from outside the student's major field. Additionally, the Landscape Studies Program will submit one question for the student's qualifying examination.

### Faculty

#### Graduate Minor Director

Daniel C. Knudsen\* (Geography)

**Departmental E-mail** [landskib@indiana.edu](mailto:landskib@indiana.edu)

**Departmental URL** <http://www.iub.edu/~landskib>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*. Requirements may or may not be reflected identically in departmental URL's.)



## Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Michelle Facos\* (History of Art), Daniel Knudsen\* (Geography), Edward Linenthal\* (History)

### Associate Professors

Laurel Cornell\* (Sociology), Owen Dwyer III (Geography), IUPUI), Stephanie Kane\* (Criminal Justice), Vicky Meretsky\* (Applied Ecology, Public and Environmental Affairs), Phaedra Pezzullo\* (Communication and Culture); Eric Sandweiss\* (Carmony Chair, History), Reyes Vila-Belda\* (Spanish and Portuguese)

### Associate Professor Emeritus

Charles Greer\* (Geography)

## Courses

Courses which meet the criteria of the Ph.D. Minor in Landscape Studies come from several disciplines and professional schools. All students are expected to take L800.

### GRAD-L 800 Seminar in Landscape Studies (3 cr.)

An interdisciplinary graduate seminar in landscape studies that provides students with an understanding of the history of landscape studies, basic theoretical tools, and an overview of principal landscape studies themes. Students are required to engage in fieldwork as part of the class.

### GRAD-L 830 Readings in Landscape Studies (3 cr.)

P: Consent of the director.

Supervised readings on selected topics in landscape studies.

## Crosslisted Courses

Crosslisted Courses

### Cross-Listed Courses that Count toward the Minor and the Certificate

The following is a list of courses that were offered in the recent past and are expected to be offered again. This list is subject to change. A current list of courses for each semester may be obtained via the Center for Latin American and Caribbean website. Students should consult with the Director of Graduate Studies prior to registering for courses to ensure they will count towards their graduate degree in Latin American and Caribbean Studies.

### AFRICAN AM & AFRI DIASPORA STD (AAAD)

AAAD-A 500 INTR AFRC AM&AFRC DIASP PART I (3 CR)

AAAD-A 557 RACE & POLITICS-AFRICAN DIASPORA (4 CR)

AAAD-A 605 RACE AND THE GLOBAL CITY, PART 1 (3 CR)

### AMERICAN STUDIES (AMST)

AMST-G 697 RESEARCH IN TRANSNATIONAL AMST (4 CR)

VT: RACE, RELIGION, AND EMPIRE IN THE AMERICAS

### ANTHROPOLOGY (ANTH)

ANTH-E 600 SEMINAR CULTURAL & SOCIAL ANTH (3 CR)

VT: BLOOD, MONEY, AND VALUE

ANTH-E 644 PEOPLE AND PROTECTED AREAS

ANTH-E 656 THE ANTHROPOLOGY OF RACE (3 CR)

ANTH-E 660 ARTS IN ANTHROPOLOGY SEMINAR (3 CR)

VT: ARTS: CREATIVITY & COLLABORATION

### FOLKLORE AND ETHNOMUSICOLOGY (FOLK)

FOLK-F 638 LATIN AMER FOLKLORE/FOLK MUSIC (3 CR)

### SPANISH & PORTUGUESE (HISP)

HISP-P 505 LIT & FILM IN PORTUGUESE (3 CR)

HISP-P 515 WOMEN WRITING IN PORTUGUESE (3 CR)

HISP-P 525 STRUCTURE OF PORTUGUESE LANGUAGE (3 CR)

HISP-P 695 LUSO-BRAZILIAN COLLOQUIUM (3 CR)

VT: AGING, GENDER & SOCIETY IN LUSOPHONE LITERATURE

HISP-S 558 COLONIAL SPANISH AMERICAN LIT (3 CR)

HISP-S 568 19TH & 20TH-CENT SPAN AMER LIT (3 CR)

HISP-S 578 20TH & 21ST CENT SPAN AMER LIT (3 CR)

HISP-S 659 TOPICS IN COLONIAL SPANISH AMERICAN LITERATURE (3 CR)

### HISTORY (HIST)

HIST-H 665 COLLOQ LATIN AMERICAN HISTORY

### MUSIC (MUS)

MUS-M 513 LAT AMER/LATINO POP MUSC CULTR (3 CR)

## Latin American and Caribbean Studies

School of Global and International Studies

College of Arts and Sciences

Departmental E-mail: [clacs@indiana.edu](mailto:clacs@indiana.edu)

Departmental URL: <https://clacs.indiana.edu/>

The Center for Latin American and Caribbean Studies is part of the Hamilton Lugar School of Global and International Studies (HLS) in the College of Arts and Sciences, dedicated to providing Indiana University graduate students with the intellectual tools they will need to live, work, and thrive in the globalized world of the twenty-first century. Degree programs associated with HLS emphasize language proficiency, cultural competency, and in-depth training in qualitative and quantitative methodologies. HLS students enjoy unparalleled access to a stellar faculty and professional development opportunities. For further information regarding the mission, structure and resources of the Hamilton Lugar School of Global and International Studies see <http://hls.indiana.edu/>.

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The

University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

## Crosslisted Courses

### Program Information

The Center for Latin American and Caribbean Studies fulfills a direct teaching function through its M.A. program and its doctoral-level certificate and minor, as well as serving as a highly important liaison and coordinator among departments and schools with teaching, research, and contract responsibilities related to Latin America and the Caribbean.

The teaching mission aims toward interdisciplinary training in the Latin American and Caribbean area in a three- to four-semester (30 credit hours) M.A. program, specifically tailored to those preparing for business, government, foreign service, or secondary school and junior college teaching opportunities. Advanced work in at least two fields and one interdisciplinary seminar give depth and breadth to such an education.

Students working on the Ph.D. in other departments may also qualify for an area certificate or outside minor in Latin American and Caribbean Studies.

### Special Program Requirements

(See also general University Graduate School requirements.)

### Master of Arts Degree Admission Requirement

Graduate Record Examination general test scores are required before candidates can be considered for admission. A Bachelor's degree from a recognized institution with an overall undergraduate B (3.0) average is also required. Applicants whose native language is not English must submit results from the TOEFL exam.

### Course Requirements

A total of 30 credit hours from graduate courses (500 level or above) related to Latin America and the Caribbean: a major concentration of at least 12 credit hours, and a minor concentration of 9 credit hours; 3 credit hours of the interdisciplinary seminar L501 (which should be taken the first semester of graduate study); the remaining 6 credit electives can be selected from the approved list of courses located on the CLACS website. Courses may be selected from CLACS courses or joint and cross-listed courses. Other courses may qualify with the approval of the Director.

Students may focus their major or minor concentrations in discrete disciplinary fields, like Anthropology, Cultural Studies, Education Policy Studies, Folklore and Ethnomusicology, History, or Gender Studies as well as interdisciplinary/thematic fields like critical race studies, environmental studies, indigenous studies, social movements, or political ecology and development. Students can also focus on geographical or regional fields including Andes, Brazil, Caribbean, Central America, Mexico, and the Southern Cone. Students are not limited to the above mentioned fields and are encouraged to craft fields based on interests, course availability and

discussions with the Director. No more than a total of 6 credits of graduate-level (500 or above) language study may be used toward the major or minor concentrations. Up to 6 credits of independent study or thesis preparation may be used to research and write the thesis, but normally no more than 3 of these 6 can be used for the major or minor concentration. Students pursuing a dual degree cannot use more than 3 credits of thesis preparation toward the CLACS degree.

### Grades

A 3.4 overall grade point average or above must be maintained. Additionally, a minimum of a B (3.0) is required for any courses desired to count towards the Master's degree.

### Foreign Language Requirement

Certification of reading knowledge in one foreign language is required for the MA degree. The language required will be determined by the student's major field of study; students should consult the Director for guidance if needed. Students may demonstrate proficiency in the following languages: Portuguese, Spanish, Quechua, Haitian Creole, Maya, or others appropriate to the student's program of study, if approved by the Director. Native speakers or those who are Associate Instructors for the respective language may contact the Director to see if a waiver may be obtained.

Entering students should obtain certification of reading knowledge or begin appropriate language study in the first term of enrollment. Proficiency in Spanish or Portuguese may be demonstrated following the [requirements of the Department of Spanish and Portuguese](#). Graduate students (whether CLACS graduate students or students from other departments) who wish to meet their language requirement with Haitian Creole, Maya, or Quechua have two options to demonstrate proficiency: 1) They may take two language courses during the first year, Elementary I and II. Students should receive a B (3.0) or better in both courses. 2) They may pass a reading examination prepared by CLACS. The examination includes two texts of approximately 400 words each, one drawn from primary sources and the other drawn from secondary sources. A student will be expected to translate the first text and answer critical questions about the second.

### Final Degree Requirement

The student shall choose one of the following as a final project for the degree:

1. A written examination consisting of two essays, administered in the last semester of course work. The Director shall appoint an Examination Committee consisting of at least three faculty members to supervise the preparation of reading lists and to evaluate the written essays. At the discretion of the Director or Examination Committee Chair, an oral examination may be required following the written examination.
2. A polished and publication-quality research paper of approximately 10,000 words oriented to a peer-reviewed journal and presented in the last semester of course work. The paper may or may not incorporate originally gathered data or source material, but it should in every case demonstrate the

ability to synthesize, analyze, and critique a body of literature or evidence in the service of an original argument. The Director and the student shall appoint a Paper Committee of a least three faculty members to evaluate the research paper. At the discretion of the Committee, an oral exam may be required following the submission of the paper.

3. A formal thesis of approximately 50-100 pages, based on a significant amount of primary source material such as ethnographic field data, historical archives, electronic media and texts, artistic products, policy documents, and the like. Subject to the approval of the Director, the student shall prepare a written thesis proposal and nominate a Thesis Committee consisting of at least three graduate faculty members, who will supervise the research, evaluate preliminary and final versions of the text, and conduct an oral examination on the thesis at least two weeks before the end of the term in which the degree is to be granted. The final, approved version of the thesis must be submitted according to the guidelines published by the University Graduate School.

### **Dual Degree: Master of Arts in Latin American and Caribbean Studies and Doctor of Jurisprudence**

The Center for Latin American and Caribbean Studies (CLACS) offers a joint degree program in cooperation with the [Maurer School of Law](#). The program is designed to provide students with a thorough grounding in the Latin American region together with professional legal training. The joint degree program allows students to complete the M.A. and J.D. with a total of 103 credit hours rather than the 118 hours that would be required to complete the two degrees separately. Students take at least 24 credit hours in CLACS and 79 credit hours in Law, including all required courses for the J.D. Under this program, the two degrees must be awarded concurrently.

Students must apply separately for admission to the M.A. program in Latin American and Caribbean Studies and the J.D. program in the Maurer School of Law, and must be accepted by both units in order to be admitted to the joint degree program. Students may apply for admission to both programs simultaneously. Alternatively, students enrolled in one program may apply for admission to the other any time before the completion of their degree.

Students must complete 24 credit hours of advanced courses relating to Latin American and Caribbean studies with a minimum GPA of 3.4. The interdisciplinary seminar LTAM-L501 (3 credits) must be taken, together with 21 credit hours in other LTAM courses or those Latin American and Caribbean studies courses that are cross-listed with other departments. No courses satisfying the 79 credits for the J.D. may be used simultaneously toward the CLACS M.A., and students will be expected to take the majority of coursework toward the CLACS degree in graduate-level courses offered within the College of Arts and Sciences. Prior approval from the Director of Graduate Studies must be obtained for enrollment in any courses outside the College or for courses that are not cross-listed. All other requirements for completion of the Latin American Studies M.A., including language proficiency and thesis or final paper/examination, remain as listed in this bulletin.

Students must complete 79 semester hours of credit in the School of Law, including all its required coursework, and maintain a cumulative grade point average of 2.3 to be eligible for graduation. Required coursework includes: the first-year courses in Civil Procedure, Constitutional Law I, Contracts, Criminal Law, Legal Profession, Legal Research and Writing I and II, Property, and Torts; a Research Seminar; an upper-level writing experience (seminar or writing course); and the Clinical/Practical Skills Requirement.

### **Dual Degree: Master of Arts in Latin American and Caribbean Studies and Master of Business Administration**

The Center for Latin American and Caribbean Studies and the Kelley School of Business jointly offer a three-year program that qualifies students for two master's degrees. Study for these two degrees in the dual degree (M.A./M.B.A.) can be completed in a total of 66 credit hours rather than the 84 credit hours that would otherwise be required to take the two degrees separately (since certain courses contribute to both degrees). The two degrees must be awarded simultaneously.

The Latin American and Caribbean Studies (LTAM) M.A. degree requires a total of 30 credit hours, 24 credits of which must be taken in Latin American and Caribbean Studies under the requirements established for the M.A. Of these, the interdisciplinary seminar L501 must be taken, together with 21 credit hours in other LTAM courses or those Latin American and Caribbean Studies courses that are cross-listed with other departments or schools, except the Kelley School of Business. Other courses may qualify with the approval of the Director. All other requirements for completion of the Latin American Studies M.A., including language proficiency and thesis or oral examination, remain as listed in this bulletin.

Students must also take 42 credit hours in the Kelley School of Business under the requirements of the M.A./M.B.A. degree, including the Foundations and Functional Cores through the M.B.A. program, L506, L509, and the Strategy Component. Up to 6 credit hours taken in the Kelley School of Business may be counted as part of the 30 credit hours normally required for the M.A. degree in LTAM.

Application for admission to the dual M.A./M.B.A. degree program must be made to the Center for Latin American and Caribbean Studies and the University Graduate School for study toward the M.A. and to the Kelley School of Business for study toward the M.B.A. Students must be accepted by all three units in order to be admitted to the program.

### **Dual Degree: Master of Arts in Latin American and Caribbean Studies and Master of Information Science**

The Center for Latin American and Caribbean Studies (CLACS) offers this dual degree program in cooperation with the Department of Information and Library Science (ILS). The program prepares students for a wide range of careers requiring a combination of technical skills in information science, foreign language proficiency, and area expertise. Study in the dual degree program allows students to complete the M.A. and M.I.S. with a total of 54 credit hours rather than the 72 hours that would be required to take the two degrees separately. Students take at least 24 credit hours in CLACS and at least 30

graduate credit hours in Information and Library Science. Under this program, the two degrees must be awarded simultaneously.

Students must take 24 credit hours of advanced courses relating to Latin American and Caribbean studies. The interdisciplinary seminar LTAM-L501 (3 credits) must be taken, together with 21 credit hours in other LTAM courses or those Latin American and Caribbean studies courses that are cross-listed with other departments. Students will be expected to take the majority of coursework toward the CLACS degree in graduate-level courses offered within the College of Arts and Sciences. Prior approval from the Director of Graduate Studies must be obtained for enrollment in any courses outside the College or for courses that are not cross-listed. All other requirements for completion of the Latin American Studies M.A., including language proficiency and thesis or final paper/examination, remain as listed in this bulletin.

Students must take 18 credit hours of required M.I.S. courses (Z510, Z511, Z515, Z516, and either Z556 or Z513 and a 3cr. programming course), 9 additional required courses (Z533, Z605 and Z629) and a 3 credit elective in M.I.S.

Students must apply separately for admission to the M.A. program in Latin American and Caribbean Studies and the M.I.S. program in the Department of Information and Library Science, and must be accepted by both units in order to be admitted to the dual degree program. Students may apply for admission to both programs simultaneously. Alternatively, students enrolled in one program may apply for admission to the other any time before the completion of their degree.

#### **Dual Degree: Master of Arts in Latin American and Caribbean Studies and Master of Library Science**

The Department of Information and Library Science (ILS) and the Center for Latin American and Caribbean Studies jointly offer a three-year program that qualifies students for two master's degrees. Study for these two degrees in the dual degree (M.A./M.L.S.) can be completed in a total of 54 credit hours rather than the 66 credit hours that would otherwise be required to complete the two degrees separately. During the dual degree, specific courses contribute to both degrees. The two degrees must be awarded simultaneously.

Students must take 24 credit hours of advanced courses relating to Latin American and Caribbean Studies. The interdisciplinary seminar L501 (3 credits) must be taken, together with 21 credit hours in other LTAM courses or those Latin American and Caribbean Studies courses that are cross-listed with other departments. Other courses may qualify with the approval of the Director. A further 6 credit hours may be taken in Information and Library Science and will count toward both degrees: Z629 Topics in Information Sources and Services with the topic: Latin American Bibliography (if Z629 is not offered, Z521, Z522, Z523, Z525, or Z526 can be substituted if the course project involves Latin American materials) or Z605 Internship in Information and Library Science (under the supervision of the Latin American bibliographer). All other requirements for completion of the Latin American Studies M.A., including language proficiency and thesis or oral examination, remain as listed in this bulletin.

For the M.L.S. degree, admission requirements remain as listed in the Department of Information and Library Science (ILS) Bulletin, and the proposed dual program requires 30 credit hours of Information and Library Science graduate courses. These must include three M.L.S. Foundation courses (18 credit hours) and other required ILS courses and electives (12 credit hours).

Application for admission to the dual M.A./M.L.S. degree program must be made to the Center for Latin American and Caribbean Studies for study toward the M.A. and to Information and Library Science for study toward the M.L.S. Students must be accepted by both units in order to be admitted to the program.

#### **Dual Degree: Master of Arts in Latin American and Caribbean Studies and Master of Public Affairs**

The O'Neill School of Public and Environmental Affairs (SPEA) and the Center for Latin American and Caribbean Studies jointly offer a three-year program that qualifies students for two master's degrees. Study for these two degrees in the dual degree (M.A./M.P.A.) can be completed in a total of 60 credit hours rather than the 78 credit hours that would otherwise be required to complete the two degrees separately. The two degrees must be awarded simultaneously.

Students must take 24 credit hours of advanced courses relating to Latin American and Caribbean studies. The interdisciplinary seminar L501 (3 credits) must be taken, together with 21 credit hours in other LTAM courses or those Latin American and Caribbean studies courses that are cross-listed with other departments. Other courses may qualify with the approval of the Director. All other requirements for completion of the Latin American Studies M.A., including language proficiency and thesis or oral examination, remain as listed in this bulletin.

For the M.P.A. degree, admission requirements remain as listed in the O'Neill School of Public and Environmental Affairs Bulletin, and the proposed dual program requires 36 credit hours of SPEA graduate courses. These must include the M.P.A. core requirements (18 credit hours): V502 Public Management (3 cr.), V506 Statistical Analysis for Policy and Management (3 cr.), V517 Public Management Economics (3 cr.), V540 Law and Public Affairs (3 cr.), V560 Public Finance and Budgeting (3 cr.), V600 Capstone in Public and Environmental Affairs (3 cr.), and students are required to develop a Specialized Concentration comprised of 18 credit hours of coursework approved by SPEA faculty advisors.

Application for admission to the dual M.A./M.P.A. degree program must be made to the Center for Latin American and Caribbean Studies for study toward the M.A. and to the School of Public and Environmental Affairs for study toward the M.P.A. Students must be accepted by both units in order to be admitted to the program.

#### **Dual Degree: Master of Arts in Latin American and Caribbean Studies and Master of Public Health**

This dual degree program takes advantage of the ability of students to specialize in Latin American and Caribbean-related public health issues in a way that enables specific coursework to be counted toward elective and research requirements for both degrees. The dual degree pairs a Master of Arts (MA) degree in Latin American and Caribbean Studies with a [Master of Public Health](#) (MPH)



that includes a Behavioral, Social and Community Health Concentration (BSCH).

This 65 credit dual degree program provides for each student to complete the minimum requirements for each degree independently, with 44 credits counting toward the MPH degree and 21 credits counting toward the MA degree. Follow the link for more on [MPH coursework](#).

Students pursuing the dual degrees will be required to select readings and independent research projects that are focused on issues related to public health in the Latin American and Caribbean region. The Director of Graduate Studies within each academic unit will help students to select appropriate courses. The public health internship must be focused on issues related to public health in the Latin American and Caribbean region and must be jointly approved by the respective academic advisor in each degree program.

MPH students are required to complete a comprehensive exam and other requirements as described under HPER C-650. As the MPH students are not required to complete a thesis, the thesis process, if chosen, will be administered by the Center for Latin American and Caribbean Studies in accordance with their established policies and procedures. The student's thesis committee must include a representative from each academic unit.

Students interested in pursuing the dual degree will submit written notice of their intent to pursue the dual degrees to the Director, Center for Latin American and Caribbean Studies and the Coordinator, Master of Public Health program. Students will submit full applications for admission to both graduate programs using existing systems. A prospective dual degree student must be admitted to both degree programs by the faculty of that program using existing admissions systems.

#### **4+1 Pathway Bachelor's /MA in Latin American and Caribbean Studies**

##### **Admission Requirement**

Undergraduate students from all majors who have attained between 30-59 credit hours (sophomore or above) are eligible to apply annually during the spring semester. A minimum undergraduate GPA of 3.0 in the major and overall is required.

##### **Course Requirements**

A total of 30 credit hours from graduate courses (500 level or above) related to Latin America and the Caribbean: a major concentration of at least 12 credit hours, and a minor concentration of 9 credit hours; 3 credit hours of the interdisciplinary seminar LTAM-L501 (which should be taken the first semester of the fourth year); and 6 credit hours of electives can be selected from the approved list of courses located on the CLACS website. Courses may be selected from CLACS courses or joint and cross listed courses. Other courses may qualify with the approval of the Director.

Students may focus their major or minor concentrations in discrete disciplinary fields, like Anthropology, Cultural Studies, Education Policy Studies, Folklore and Ethnomusicology, History, or Gender Studies as well as interdisciplinary/thematic fields like critical race studies, environmental studies, indigenous studies, social movements, political ecology, development, and

human rights. Students can also focus on geographical or regional fields including Andes, Brazil, Caribbean, Central America, Mexico, and the Southern Cone. Students are not limited to the above mentioned fields and are encouraged to craft fields based on interests, course availability and discussions with the Director. No more than a total of 6 credits of graduate-level (500 or above) language study may be used toward the major or minor concentrations. Up to 6 credits of independent study or thesis preparation may be used to research and write the thesis, but normally no more than 3 of these 6 can be used for the major or minor concentration. Students pursuing the 4+1 BA/MA degree cannot use more than 3 credits of thesis preparation toward the CLACS degree.

##### **Grades**

A 3.4 overall GPA or above is required. Additionally, a minimum of a B (3.0) is required for any courses desired to count toward the Master's degree.

##### **Foreign Language Requirement**

Certification of reading knowledge in one foreign language is required for the MA degree. The language required will be determined by the student's major field of study; students should consult the Director for guidance if needed. Students may demonstrate proficiency in the following languages: Portuguese, Spanish, Quechua, Haitian Creole, Maya, or others appropriate to the student's program of study, if approved by the Director. Reading proficiency may be demonstrated in one of three ways: students can pass a proficiency examination administered by one of IU's foreign language departments; students can demonstrate proficiency by earning a grade of B (3.0) or better in a graduate reading course offered by a foreign language department; or students can demonstrate proficiency in Maya, Haitian Creole, or Quechua by passing a reading examination prepared by CLACS.

##### **Final Degree Requirements**

Both the BA and MA degree conferrals must be awarded simultaneously.

The student shall choose one of the following as a final project for the degree:

1. A written examination consisting of two essays, administered in the last semester of course work. The Director shall appoint an Examination Committee consisting of at least three faculty members to supervise the preparation of reading lists and to evaluate the written essays. At the discretion of the Director or Examination Committee Chair, an oral examination may be required following the written examination.
2. A polished and publication-quality research paper of approximately 10,000 words, oriented to a peer-reviewed journal and presented in the last semester of course work. The paper may or may not incorporate originally gathered data or source material, but it should in every case demonstrate the ability to synthesize, analyze, and critique a body of literature or evidence in the service of an original argument. The Director and student shall appoint a Paper Committee of at least three faculty members to evaluate the research paper. At the discretion of the



Committee, an oral exam may be required following the submission of the paper.

3. A formal thesis of approximately 50-100 pages, based on a significant amount of primary source material such as ethnographic field data, historical archives, electronic media and texts, artistic products, policy documents, and the like. Subject to the approval of the Director, the student shall prepare a written thesis proposal and nominate a Thesis Committee consisting of at least three graduate faculty members, who will supervise the research, evaluate preliminary and final versions of the text, and conduct an oral examination on the thesis at least two weeks before the end of the term in which the degree is to be granted. The final, approved version of the thesis must be submitted according to the guidelines published by the University Graduate School.

### **Graduate Area Certificate in Latin American and Caribbean Studies**

#### **Admission Requirement**

Acceptance into a Ph.D. program. Area certificate awarded only upon completion of the Ph.D. degree.

#### **Course Requirements**

A total of 18 credit hours with Latin American and/or Caribbean emphases, including the L501 graduate seminar (3 cr.) and a dissertation on a Latin American or Caribbean topic. The remaining 15 credits can be selected from the approved list of courses found on the department website. Students need to obtain approval from the Director for courses not on the approved list. Six credits can be within the student's home department, as long as they contain Latin American or Caribbean content and have been approved by the Director to count towards the certificate.

#### **Grades**

A minimum grade of B (3.0) is required in each course that is to count toward certificate requirements.

#### **Foreign Language Requirements**

Reading proficiency in a Latin American or Caribbean Language (such as Spanish, Portuguese, Haitian Creole, Maya, or Quechua). Reading proficiency may be demonstrated in one of three ways: students can pass a proficiency examination administered by one of IU's foreign language departments; students can demonstrate proficiency by earning a grade of B (3.0) or better in a graduate reading course offered by a foreign language department; or students can demonstrate proficiency in Maya, Haitian Creole, or Quechua by passing a reading examination prepared by CLACS.

### **Ph.D. Minor in Latin American and Caribbean Studies**

The requirements for the Ph.D. minor are flexible. Each program is developed in consultations between the student, the academic advisor of the student's major department, and the director of Latin American and Caribbean studies, though certain basic requirements are common to all programs.

#### **Course Requirements**

Twelve (12) credit hours of graduate level course work (500 and above) directly related to Latin American or Caribbean subject matter, including The LTAM-L 501 graduate seminar (3 credit hours) plus 9 additional credit hours of graduate level course work (500 and above) directly related to Latin American or Caribbean subject matter. This includes courses from the approved course list on the Latin American and Caribbean Studies website. Students need to obtain approval from the Director for courses not on the approved list. Courses from the student's Ph.D. degree cannot also count toward the minor.

#### **Examination**

If a grade point average of at least 3.7 is maintained, no examination will be required. Otherwise, the director of Latin American and Caribbean Studies may stipulate that the student take a written examination.

#### **Program Certification**

Certification that all requirements for the program have been met must come from the director of Latin American and Caribbean Studies.

#### **Faculty**

Crosslisted Courses

#### **Director**

Associate Professor Daniel Suslak\* (Anthropology)

#### **Associate Director**

TBD\*

#### **Senior Lecturer**

Quetzil Castañeda\*

#### **Visiting Lecturer**

David Tezil

#### **Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### **Distinguished Professors**

Richard Bauman (Emeritus, Folklore and Ethnomusicology, Anthropology, Communication and Culture); Eduardo Brondizio\* (Anthropology); Keith Clay\* (Biology); Jeffrey L. Gould\* (History); Richard Wilk (Emeritus, Anthropology)

#### **Rudy Professors**

Emilio F. Moran (Emeritus, Anthropology); Albert Valdman (Emeritus, French and Italian, Linguistics)

#### **Bernardo Mendel Professor**

Daniel James\* (History)

#### **Chancellor's Professors**

Robert Arno (Emeritus, School of Education); Patrick McNaughton (History of Art); Anya Peterson Royce\* (Anthropology, Comparative Literature)

### Provost Professors

Deborah Cohn\* (Spanish and Portuguese, American Studies); Peter Guardino\* (History); Anne Pyburn\* (Anthropology); Kevin D. Brown\* (Maurer School of Law)

### Richard S. Melvin Professor

Kevin D. Brown\* (Maurer School of Law)

### Professors

Akwasi Assensoh (Emeritus, African American and African Diaspora Studies); Lee Alston\* (Economics and Law); Anke Birkenmaier\* (Spanish and Portuguese); Mary Clayton (Emerita, Spanish and Portuguese); Joseph Clements (Spanish and Portuguese, Linguistics); Claus Clüver (Emeritus, Comparative Literature); Geoffrey Conrad (Emeritus, Anthropology); Dennis Conway\* (Emeritus, Geography); Della Collins Cook\* (Anthropology); Manuel Díaz-Campos\* (Spanish and Portuguese); Patrick Dove\* (Spanish and Portuguese); Juan Carlos Escanciano\* (Economics); James Damico (Education); Tom Evans\* (Geography); J. César Félix-Brasdefer\* (Spanish and Portuguese); Kimberly L. Geeslin\* (Spanish and Portuguese); Gerardo Gonzalez\* (School of Education); L. Shane Greene\* (Anthropology); Vivian Nun Halloran\* (Comparative Literature, English, American Studies); Claudia C. Johnson\* (Earth and Atmospheric Sciences); Eileen Julien\* (Comparative Literature, French and Italian); Stephanie Kane\* (International Studies); Catherine Larson (Emerita, Spanish and Portuguese); Bradley Levinson\* (School of Education); Michael Martin\* (American Studies, Communication and Culture); Heitor Martins (Emeritus, Spanish and Portuguese); John McDowell\* (Folklore and Ethnomusicology); Kathleen Myers\* (Spanish and Portuguese); Christiana Ochoa (Law); Dina Okamoto (Sociology); Solimar Otero (Folklore and Ethnomusicology); Oana Panaite (French and Italian); Iris Rosa (Emerita, African American and African Diaspora Studies); Darlene Sadlier (Emerita, Spanish and Portuguese); Pravina Shukla\* (Folklore and Ethnomusicology); Micol Seigel\* (American Studies, History); John Stanfield II (Emeritus, African American and African Diaspora Studies); Reyes Vila-Belda\* (Spanish and Portuguese); Virginia Vitzthum\* (Anthropology); Steven Wagschal\* (Spanish and Portuguese); Margaret Weigel\* (School of Public Health)

### Associate Professors

Rodrigo X. Armijos (School of Public Health); Claudia Avellaneda\* (School of Public and Environmental Affairs); Bonnie Brownlee (Emerita, School of Journalism); Judah Cohen\* (Jewish Studies, Folklore and Ethnomusicology); Serafin Coronel-Molina\* (School of Education); Arlene Diaz\* (History); John Dyson (Emeritus, Spanish and Portuguese); Terri Francis\* (Media School); Lessie Jo Frazier\* (Gender Studies); Michael Gasser (Emeritus, School of Informatics and Computing, Cognitive Science); Lucia Guerra-Reyes\* (School of Public Health); Laura Gurzynski-Weiss\* (Spanish and Portuguese); Ricardo Andrés Guzmán (Spanish and Portuguese); Stacie Marie King\* (Anthropology); Joshua Malitsky\* (Communication and Culture); Rebecca Martínez\* (School of Education); Sylvia Martínez\* (School of Education); Barbaro Martinez-Ruiz (Art History); Jason McGraw\* (History, American Studies); Carmen Medina\* (School of Education);

Eden Medina\* (School of Informatics and Computing); Alejandro J. Mejías-López\* (Spanish and Portuguese); Luciana Namorato\* (Spanish and Portuguese); John Nieto-Phillips\* (Latino Studies, History); Phillip Parnell\* (International Studies); Alfonso Pedraza-Martinez\* (Kelley School of Business); Armando Razo\* (Political Science); Kevin Rottet (French and Italian); Laura Scheiber\* (Anthropology); Stephen Selka\* (Religious Studies, American Studies); Michael Spiro (Jacobs School of Music); Marvin Sterling\* (Anthropology); Daniel Suslak\* (Anthropology); Estela Vieira\* (Spanish and Portuguese); Maisha Wester\* (African American and African Diaspora Studies); Erik Willis\* (Spanish and Portuguese)

### Assistant Professors

Cara Caddoo\* (History); Rebecca Dirksen\* (Folklore and Ethnomusicology); Jonathan Risner\* (Spanish and Portuguese); Molly Rosenberg\* (School of Public Health); Olimpia Rosenthal\* (Spanish and Portuguese); Alberto Varon\* (English); Michael Wasserman\* (Anthropology)

### Clinical Professors

Charles Beeker (School of Public Health); P. Roberto García (Kelley School of Business); Katie Grove (Emerita, School of Public Health); Mark Levin (School of Public and Environmental Affairs); Alex Lopes (Kelley School of Business); Daniel Preston (School of Public and Environmental Affairs)

### Senior Lecturers

Vania Castro (Spanish and Portuguese); Keith Dayton (Business); Israel Herrera-Cárdenas (Spanish and Portuguese); Julie Ann Madewell (Spanish and Portuguese); James K. Self (Economics); April Sievert\* (Anthropology)

### Lecturer

Andrea Siqueira (International Studies)

### Academic Specialists

Javier León (Latin American Music Center)

### Librarian

Luis González

### Academic Advisor

Associate Professor Daniel Suslak, 355 N. Jordan Ave., (812) 855-9097

### Courses

#### Crosslisted Courses

- LTAM-C 501 Elementary Haitian Creole I (3 cr.) Introduction to Haitian Creole, the vernacular language of Haiti spoken by over 9 million people; conversational drills; grammatical explanations and exercises; listening comprehension training; aspects of Haitian culture.
- LTAM-C 502 Elementary Haitian Creole II (3 cr.) P: Grade of C or better in C101/501 or equivalent proficiency. Elementary Haitian Creole II focuses on reading non-specialized texts and learning about the

rich, African-based folk culture and religion of the world's first black republic.

- LTAM-C 601 Intermediate Haitian Creole I (3cr.) P: Grade of C or better in C102/502 or equivalent proficiency. This is the third part of a four-course sequence on Haitian Creole. In advanced Haitian Creole, students will work toward expanding and refining their conversation skills, reading and writing more specialized texts, and deepening their knowledge of Haitian culture and history.
- LTAM-C 602 Intermediate Haitian Creole II (3cr) P: Grade of C or better in C 201/601 or equivalent proficiency. This is the fourth part of a four-course sequence on Haitian Creole. In advanced Haitian Creole, students will work toward expanding and refining their conversation skills, reading and writing more specialized texts, and deepening their knowledge of Haitian culture and history.
- LTAM-L 501 Seminar: Contemporary Latin America (3-4 cr.) This interdisciplinary seminar offers a history of area studies and Latin American and Caribbean Studies, an introduction to some of the theoretical and disciplinary perspectives from which the region can be studied, and the analytical tools necessary to produce a grant proposal and conduct research.
- LTAM-L 510 Brazilian Cinema (3 cr) Survey of Brazilian cinema from its beginnings to the present day. Although early filmmakers and works will be addressed, the primary focus of the course is on 1960s Cinema Novo and movies made in the post-Cinema Novo and retomada or revival periods. The course is taught in English. Films are in Portuguese with English subtitles. NB: Students who are taking the course for credit in Portuguese will be required to write exams and a research paper in Portuguese.
- LTAM-L 526 Special Topics in Latin American and Caribbean Studies (1-4 cr.) Intensive study and analysis of selected Latin American and Caribbean studies problems of limited scope within an interdisciplinary format. Topics will vary and will ordinarily cut across fields, regions, or periods. May be repeated for credit.
- LTAM-L 527 Latin American and Caribbean Languages (1-4 cr.) Languages of Latin America and the Caribbean, other than Spanish and Portuguese. May be repeated with a different language or higher level for a maximum of six credit hours in any one language.
- LTAM-L 727 Latin American and Caribbean Languages (3 cr.) P: Consent of instructor. Advanced study in one of the less commonly taught languages of Latin America or the Caribbean.
- LTAM-M 501 Yucatec Maya I (3 cr.) Introduction to Yucatec Maya language and culture. Yucatec Maya is an indigenous language of Mexico spoken by close to one million people; basic grammatical structures and vocabulary; conversational drills; and lessons on historical and cultural context.
- LTAM-M 502 Yucatec Maya II (3 cr.) P: Grade of C or higher in M501 or equivalent proficiency. The second semester of Yucatec Maya emphasizes vocabulary-building, simple conversation, beginning writing, and common grammatical patterns.
- LTAM-M 601 Intermediate Yucatec Maya I (3 cr.) In Intermediate Yucatec Maya I students will further develop their conversation skills, practice reading/writing using contemporary Maya orthography, and continue their exploration of Mayan culture and history. P: grade of C or better in Intermediate Yucatec Maya I or equivalent proficiency.
- LTAM-M 602 Intermediate Yucatec Maya II (3 cr.) P: Grade of C or higher in M501 or equivalent proficiency. Development of conversation skills. Reading and writing practice using contemporary Maya orthography. Exploration of Mayan culture and history. P: grade of C or better in Intermediate Yucatec Maya I or equivalent proficiency.
- LTAM-Q 501 Quechua I (3 cr.) Introduction to Quechua, spoken by over 13 million people across the Andean nations of South America; basic grammar and vocabulary; an introduction to the culture and history of the Andean region.
- LTAM-Q 502 Quechua II (3 cr.) P: Grade of C or higher in Q501 or equivalent proficiency. Part II of first-year Quechua, this course builds on the basic vocabulary and grammar lessons of Quechua I and introduces further aspects of Andean culture and history.
- LTAM-Q 601 Intermediate Quechua I: (3 cr.) P: Grade of C or higher in Q502 or equivalent proficiency. Intermediate Quechua focuses on more advanced grammatical constructions; vocabulary building; conversational drills; reading/writing Quechua texts.
- LTAM-Q 602 Intermediate Quechua II: (3 cr.) P: Grade of C or higher in Q601 or equivalent proficiency. Advanced Quechua offers serious students the opportunity to refine their conversational skills, practice more extensive reading/writing of Quechua texts, and deepen their knowledge of the Andean region. For courses in other departments acceptable for degree and certificate requirements, consult the director of Latin American and Caribbean Studies.
- LTAM-X 800 Individual Readings in Latin American Studies (1-6 cr.) Individualized course for readings based on student interests in Latin America. Draws upon materials from anthropology, business, economics, education, folklore and ethnomusicology, geography, history, political science, sociology, and Spanish and Portuguese literature. Students must fill out and submit the X800 contract to CLACS for approval.
- LTAM-X 850 Independent Research in Latin American Studies (1-6cr). Individualized course for research based on student interests in Latin America. Draws upon materials from anthropology, business, economics, education, fine arts, folklore, geography, history, political science, sociology, and Spanish and Portuguese literature. Students must

fill out and submit the X850 contract to CLACS for approval.

- LTAM-X 890 Individualized course for thesis research and writing based on student interests in Latin America (1-6 cr). Draws upon materials from anthropology, business, economics, education, fine arts, folklore, geography, history, political science, sociology, and Spanish and Portuguese literature. Students must fill out and submit the X890 contract to CLACS for approval.

## Latino Studies

### College of Arts and Sciences

Departmental E-Mail: [latino@indiana.edu](mailto:latino@indiana.edu)

Departmental URL: <http://www.latino.indiana.edu>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Ph.D. Minor in Latino Studies

The Latino Studies Program allows graduate students in the Social Sciences, Humanities, Sciences, Business, Law, and Education to develop expertise on the historical and contemporary experiences of Latinos in social, cultural, political, and economic contexts. The program emphasizes interdisciplinary, comparative, and applied approaches to knowledge. It addresses the experiences of Mexican Americans, Puerto Ricans, Cubans, Dominicans, Central Americans and other Latin Americans who have immigrated to the United States or who have resided in the U.S. for multiple generations. Our courses examine Latino communities and experiences within local, national, transnational, and diasporic contexts.

#### Admission and Program of Study

Students interested in pursuing a Ph.D. Minor in Latino Studies should consult with the Director of Latino Studies, who will recommend a member of the faculty to serve as an advisor. In consultation with the advisor, the student will complete the "Program of Study Form" and file it with the Director of Latino Studies for final approval. Upon completion of the course work, the Director of Latino Studies or the student's Latino Studies advisor will attest to the successful completion of the outside minor.

#### Course Requirements

Students in other departments can minor in Latino Studies by completing twelve (12) credit hours of course work directly related to Latino Studies subject matter with a grade point average no lower than B (3.0). At least one graduate seminar (L599 or L601) or readings course (L701) is required, and the remaining credits can come from these or any other Latino Studies course offered by faculty outside of the student's home department. Courses below the 500 level may not be applied to the Ph.D. minor.

### Faculty

#### Graduate Minor Director

Alberto Varon\* (English)

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Raquel T. Anderson\* (Speech and Hearing Sciences), Richard Bauman\* (Emeritus, Anthropology, Folklore), Deborah N. Cohn\* (Spanish and Portuguese), Luis Dávila\* (Emeritus, Spanish and Portuguese), Luis Fuentes-Rohwer (Law), Jeffrey L. Gould\* (History), L. Shane Greene\* (Anthropology), Peter Guardino\* (History), Vivian Nun Halloran\* (American Studies, English), Bradley Levinson\* (Educational Leadership and Policy Studies), John McDowell\* (Folklore and Ethnomusicology), Christiana Ochoa (Law), Dina Okamoto\* (Sociology), Solimar Otero\* (Folklore and Ethnomusicology), Fabio Rojas\* (Sociology), Iris Rosa (Emeritus, African American and African Diaspora Studies), Alberto Torchinsky\* (Emeritus, Mathematics)

### Associate Professors

Anke Birkenmaier\* (Spanish and Portuguese), Serafin Coronel-Molina\* (Literacy, Culture, and Language Education), Arlene J. Díaz\* (History), Manuel Díaz-Campos\* (Spanish and Portuguese), J. César Félix-Brasdefer\* (Spanish and Portuguese), Bernard L. Fraga\* (Political Science), Lessie Jo Frazier\* (American Studies, Gender Studies), R. Andrés Guzmán\* (Spanish and Portuguese), Jennifer Lee\* (Sociology), Sonia Lee\* (American Studies), Rebecca Martínez\* (Counseling and Educational Psychology), Sylvia Martínez\* (Educational Leadership and Policy Studies), Eden Medina\* (School of Informatics and Computing), Alejandro Mejías-López\* (Spanish and Portuguese), Carmen L. Medina\* (Literacy, Culture, and Language Education), Luciana Namorato\* (Spanish and Portuguese), John Nieto-Phillips\* (History), Jonathan Risner\* (Spanish and Portuguese), Daniel Soslak\* (Anthropology), Alberto Varon\* (English), Cynthia Wu\* (Gender Studies)

### Assistant Professors

Alberto Ortega (Public and Environmental Affairs), Judith Rodriguez (African American and African Diaspora Studies)

### Visiting Assistant Professor

Daniel Webb (Latino Studies)

### Lecturers and Academic Specialists

Quetzil Castañeda (Latin American and Caribbean Studies), Israel Herrera-Cárdenas (Spanish and Portuguese), Eric Mayer-García (Theater, Drama, and Contemporary Dance) Javier León (Jacobs School of Music), Fernando Orejuela (Folklore and Ethnomusicology)

### Librarian

Luis Gonzalez (Latino Studies, Latin American and Caribbean Studies, Spanish and Portuguese)

### Courses



**LATS-L 501 Seminar in Latino Studies (3-4 cr.)**

P: Graduate students only. Introduce students to interdisciplinary, comparative and applied approaches to the historical and contemporary experiences of Latino in their social, cultural, political and economic contexts. Topic varies and may be repeated for credit.

**LATS-L 599 Individualized Readings in Latino Studies (1-4 cr.)**

P: Class is open only to students pursuing a Ph.D. minor in Latino Studies. Class requires Latino Studies faculty approval. Students must complete an agreement including goals of the course, number of readings, titles of readings (if possible) and the date of work it is to be completed.

**LATS-L 601 Colloquium in Latino Studies (3-4 cr.)**

P: Open to students pursuing a Ph.D. minor in Latino Studies. Representative readings in interdisciplinary, comparative and applied approaches to the historical and contemporary experiences of Latinos in their social, cultural and economic contexts. Topic varies and may be repeated for credit. Topic varies and may be repeated for credit.

**LATS-L 701 Seminar in Latino Studies (3-4 cr.)** These courses involve research at a mature level in specialized topics and problems in Latino Studies.

## Law

**Maurer School of Law**

**Departmental E-mail:** [lawadmis@indiana.edu](mailto:lawadmis@indiana.edu)

**Departmental URL:** [www.law.indiana.edu](http://www.law.indiana.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

**Curriculum****Degrees Offered**

Graduate degrees in Law include the PhD in Law and Social Science, the PhD in Law & Democracy, the combined PhD in Law and Democracy and J.D. in Law, the combined M.A. in Russian and East European Studies and J.D. in Law, the combined M.A. in Latin American and Caribbean Studies and J.D. in Law, the combined M.A. in European Studies and J.D. in Law, the combined M.A. in Media Arts and Sciences and J.D. in Law, the combined M.S. in Media and the J.D. in Law, the combined M.S. in Cybersecurity Risk management and the J.D. in Law, and a PhD minor in Law.

Additionally, although professional rather than graduate degrees, the Maurer School of Law offers Doctor of Jurisprudence (J.D.), Master of Laws (L.L.M.), the Master of Comparative Law (M.C.L.), and the Doctor of Juridical Science (S.J.D.) degrees. Joint professional degree programs include the combined Master of Business Administration (M.B.A.) and J.D. in Law, the combined Master of Business Administration in Accounting (M.B.A.) and J.D. in Law, the combined Master of Science (M.S.) in Accounting and the J.D. in Law, the combined Master of Public Administration (M.P.A.) or Master of Science in Environmental Science (M.S.E.S.) and J.D. in Law, the combined Master of Library Science (M.L.S.) and J.D. in Law, and the combined Master of Public Health (M.P.H.)

and J.D. in Law. For information regarding these degrees, see the website or bulletin of the Maurer School of Law.

**Special School Requirements**

(See also general University Graduate School requirements.)

**Doctor of Philosophy Degree in Law and Social Science**

Students are not currently being admitted to this program.

The Doctor of Philosophy in Law and Social Science (PhD) involves interdisciplinary research and coursework in law and the social sciences. PhD candidates must complete a course of study as specified by the candidate's faculty advisors. Candidates take comprehensive exams and must complete a dissertation defense. Applicants whose native language is not English must submit TOEFL results. Each PhD candidate will be assigned an advisory committee consisting of at least two faculty members from the law school and at least two faculty members from the collaborating academic department. The chairperson of the advisory committee will serve as the candidate's primary academic advisor.

When applying to the PhD program, applicants must indicate with which IU social science department they hope to collaborate. The law school will be responsible for consulting with that department to make an admissions decision. Applicants should carefully research their options for academic collaboration and be sure to mention relevant social science faculty members and/or programs on their application.

The PhD requires a minimum of three years in residence and the following:

- 60 credit hours divided between law courses and the collaborating department (as specified by the candidate's academic advisory committee), no fewer than 12 of which shall satisfy the requirements of the candidate's academic advisory committee for designation as a Minor
- Completion of comprehensive exams
- 30 credit hours for dissertation research
- A dissertation defense

**Doctor of Philosophy (PhD) in Law and Democracy**

The specialized Law and Democracy PhD degree program focuses on the way that law structures democracy. The track involves interdisciplinary research and coursework in law, anthropology, political science, and area studies for the part of the world in which the candidate wishes to work. PhD candidates must complete the course of study specified in the [program description](#). Candidates take comprehensive exams and must complete a dissertation defense. Each PhD candidate will be assigned an advisory committee, including a primary advisor who is a faculty member associated with the [Center for Constitutional Democracy](#).

Before applying to the Law and Democracy PhD program, applicants should contact [Prof. Susan H. Williams](#) to determine whether they are appropriate candidates for the program. The application materials can be found [here](#).

The PhD in Law and Democracy requires a minimum of two years in residence and the following:



- 69 credit hours divided between courses in law, anthropology, political science and area studies
- 15 hours of coursework in Anthropology, Political Science, or Area Studies shall satisfy the requirements of the candidate's academic advisory committee for designation as a Minor.
- 21 credit hours for dissertation research
- Demonstrated proficiency in the language of the country or countries studied
- Fieldwork related to the country or countries studied
- An internship with the Center for Constitutional Democracy
- Completion of qualifying examinations
- The production of a dissertation
- A dissertation defense

A PhD student in Law and Democracy who has successfully completed most of the coursework for the PhD degree but does not wish to complete the dissertation requirement may terminate the program and elect to receive a Master of Arts in Law and Democracy.

### **Combined J.D. in Law and Doctor of Philosophy (PhD) in Law and Democracy**

To be eligible to receive the degrees of Doctor of Jurisprudence and Doctor of Philosophy in Law and Democracy, which must be received simultaneously, a student must:

- complete 82 credit hours in the School of Law, including all of its required course work; and
- complete 36 graduate credit hours in anthropology, political science and area studies in accordance with all of the requirements for the PhD in Law and Democracy (see above), including the requirements for 21 credit hours for dissertation research, a comprehensive exam, and a minor (see directly above); up to 33 credits taken in the School of Law may be counted toward fulfillment of both degree programs.

### **Joint Degree Programs**

The Maurer School of Law offers several formal joint-degree programs that allow students to combine a law program with programs from other Indiana University schools and departments. These joint-degree programs allow students to earn a J.D. and either a master's degree or a PhD in another discipline. Joint degrees decrease the time, typically by a year, that students would spend earning both degrees separately. Joint-degree programs with other disciplines may be individually designed and structured to meet students' learning and career goals. Proposals for such individually designed programs should initially be submitted to the Maurer School of Law. The Law School will coordinate with the other school or department to establish the joint or concurrent program.

Candidates for joint-degree programs are encouraged to apply for admission to each school at the same time. However, law students can apply for admission to the other school or department before the end of the second year of law study. Students enrolled in master's programs at other schools and departments should apply for admission to the Law School before the end of the first year of the master's program. Each degree has required course work. Joint degrees are awarded at the same time,

and all requirements in both schools must be completed in order to receive each degree.

Whether in a formal or individually structured joint-degree program, students typically spend their first year at the Law School. Thereafter, course time is divided between the Law School and the other school or department in whatever way best meets the educational objectives of the student and the program requirements.

As a general rule, joint-degree programs do not require academic work during the summer recess, permitting joint-degree candidates to take advantage of opportunities for internships, clerkships, and summer associate programs.

### **Joint degree: Master of Arts in Latin American and Caribbean Studies and Doctor of Jurisprudence in the Maurer School of Law**

The Maurer School of Law and the Department of Latin American and Caribbean Studies offer joint Doctor of Jurisprudence and Master of Arts degrees. Under the program, a student must complete 79 semester hours of credit in the School of Law, including all of its required course work; complete 24 semester hours of credit in Latin American and Caribbean Studies, including all of its required course work; meet the language proficiency and thesis requirements for the M.A.; and earn a cumulative grade point average of at least 2.3 on all work taken in the School of Law and at least 3.0 on all work taken in Latin American and Caribbean Studies.

### **Joint degree: Master of Arts in Russian and East European Studies and Doctor of Jurisprudence in the Maurer School of Law**

The Maurer School of Law and the Department of Russian and East European Studies offer joint Doctor of Jurisprudence and Master of Arts degrees. Under the program, a student must complete 79 semester hours of credit in the School of Law, including all of its required course work; complete 27 semester hours of credit in Russian and East European Area Studies, including all of its required course work; complete a language oral proficiency examination (Russian at intermediate level or other area language at the 2nd year level); complete the M.A. Essay and Examination; complete 20 semester hours of credit in the College of Arts and Sciences; and earn a cumulative grade point average of at least 2.3 on all work taken in the School of Law and at least 3.0 on all work taken in the Russian and East European Institute.

### **Joint Degree: Master of Arts in European Studies and Doctor of Jurisprudence in the Maurer School of Law**

The Maurer School of Law and the Department of European Studies offer joint Doctor of Jurisprudence and Master of Arts degrees. Under the program, a student must complete 79 semester hours of credit in the School of Law, including all of its required course work; complete 24 semester hours of credit in European Studies, including all of its required course work; meet the language proficiency and thesis requirements for the M.A., and earn a cumulative grade point average of at least 2.3 on all work taken in the School of Law and at least 3.0 on all work taken in European Studies.

Joint degree: Master of Arts in European Studies and Doctor of Jurisprudence in the Maurer School of Law The Maurer School of Law and the Department of European

Studies offer joint Doctor of Jurisprudence and Master of Arts degrees. Under the program, a student must complete 79 semester hours of credit in the School of Law, including all of its required course work; complete 24 semester hours of credit in European Studies, including all of its required course work; meet the language proficiency and thesis requirements for the M.A., and earn a cumulative grade point average of at least 2.3 on all work taken in the School of Law and at least 3.0 on all work taken in European Studies.

#### **Joint Degree: Master of Arts in Media Arts and Sciences and Doctor of Jurisprudence in the Maurer School of Law**

The Maurer School of Law and the Media School offer joint Doctor of Jurisprudence and Master of Arts degrees. Under the program, a student must complete 79 semester hours of credit in the School of Law, including all of its required course work; complete 27 semester hours of credit in the Media School, including all of its required course work; and earn a cumulative grade point average of at least 2.3 on all work taken in the School of Law and at least 3.0 on all work taken in the Media School.

#### **Joint Degree: Master of Science in Media and Doctor of Jurisprudence in the Maurer School of Law**

The Maurer School of Law and the Media School offer joint Doctor of Jurisprudence and Master of Science degrees. Under the program, a student must complete 79 semester hours of credit in the School of Law, including all of its required course work; complete 30 semester hours of credit in the Media School, including all of its required course work; and earn a cumulative grade point average of at least 2.3 on all work taken in the School of Law and at least 3.0 on all work taken in the Media School.

#### **Joint Degree: Master of Science in Cybersecurity Risk Management and Doctor of Jurisprudence in the Maurer School of Law**

The Maurer School of Law, the Kelley School of Business, and the School of Informatics, Computer Science, and Engineering offer joint Doctor of Jurisprudence and Master of Science degrees. Under the program, a student must complete 88 semester hours of credit in the School of Law, including all of its required course work; Complete thirty (30) credit hours of graduate course work to be distributed as follows: (a) 6 credits (typically 2 courses) in law courses, (b) 6 credits (typically 2 courses) in informatics or computer science courses, (c) 6 credits (typically 2 courses) in business courses, (d) completion of the 3-credit Cybersecurity Risk Management Capstone, and (e) at least 9 credits of cybersecurity-related electives offered by the Maurer School of Law, the Kelley School of Business, or the School of Informatics, Computer Science, and Engineering; and Media School, and earn a cumulative grade point average of at least 2.3 on all work taken in the School of Law and at least 3.0 on all work taken for the M.S. degree.

#### **Ph.D. Minor in Law**

The Maurer School of Law offers a minor in Law for PhD students from other fields, which requires completion of 13-16 credit hours of course work. Students must complete 2 credit hours in either a research seminar or independent research and must complete one of the following courses: contracts, torts, property,

constitutional law, criminal law, civil procedure; or a basic methodological course that has been approved by the law minor advisor. Other courses to be taken will depend on the student's interests and needs and shall be recommended by the assigned faculty advisor from the Maurer School of Law and approved by the student's Ph.D. advisory committee as well as the appropriate chairperson or the dean of the student's school. Examinations are required for individual courses, but none is required for the minor itself.

The minor chairperson in the Maurer School of Law is Interim Assistant Dean for Student Services:

Anne Newton McFadden

Room 024

(812) 855-0259

#### **Faculty**

A list of Law School faculty and their affiliations with the University Graduate School can be found on the [Maurer School of Law's website](#).

#### **Courses**

For a list of courses and their descriptions, see the course list of the Maurer School of Law.

## **Linguistics**

### **College of Arts and Sciences**

**Departmental E-mail:** [lingdept@indiana.edu](mailto:lingdept@indiana.edu)

**Departmental URL:** <https://linguistics.indiana.edu>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

#### **Curriculum**

#### **Degrees Offered**

Master of Arts in Linguistics, Master of Science in Computational Linguistics, Doctor of Philosophy in Linguistics

#### **Special Departmental Requirements**

(See also general University Graduate School requirements.)

#### **Master of Arts in Linguistics**

#### **Admission Requirements**

Admission to the M.A. program will be based on evaluations of (1) undergraduate grade record, (2) level of achievement in the Graduate Record Examination General Test, (3) three letters of recommendation, and (4) undergraduate exposure to linguistics and related course work. Students not satisfying requirement (4) may be admitted but may be required to do course work prerequisite to introductory graduate courses.

#### **Thesis**

Optional; maximum of 4 credit hours.

#### **Final Examination**

None.

### Course Requirements

A total of 30 credit hours, including L520, L541, L542, L543 and L546, and one of the following four: L530, L544, L670, or a course in psycholinguistics/language acquisition. A grade point average of 3.0 (B) must be achieved in these five core courses. Additional electives as approved by the department. Specific course requirements may be met by taking a higher level course in the same area. A minimum of 20 credit hours must be from linguistics department offerings.

### Foreign Language Requirements

Reading knowledge of one foreign language approved by the department and knowledge of the structure of a language or languages other than English and outside the student's general language family. (The L653-L654 sequence may satisfy the second part of this requirement.)

### Master of Arts in Linguistics with a Concentration in Computational Linguistics

Computational linguistics is an interdisciplinary field which addresses the use of computers to process or produce human language. Linguistics contributes to this field an understanding of the special properties of language data, and also provides theories and descriptions of language structure and use. Computational linguistics is largely an applied discipline concerned with practical problems. Typical applications include: natural language processing, machine translation (translating from one language to another), speech synthesis, speech production, information retrieval (finding relevant documents or parts of documents in large collections of texts), cognitive modeling, and, in general, almost anything dealing with natural language interfaces.

### Course Requirements

The master's track in computational linguistics consists of a minimum of 30 credit hours to include L541, L542, L543, L545, and L645. A grade point average of 3.0 (B) must be achieved in these five core courses. Students must also fulfill a specialization course requirement by taking two of the following courses: Q520 (Cognitive Science), L614 (Linguistics), L615 (Linguistics), L665 (Linguistics) or seminar courses such as P657 (Psychology), Z543 (ILS), L715 (Linguistics), or L7XX (Linguistics) approved by the student's academic advisor. Three additional electives must be taken. A minimum of 20 credit hours must be from linguistics department offerings. Outside electives must be approved by the student's academic advisor.

### Programming Language Requirement

L555 or a computer programming course (or the equivalent) approved by the student's academic advisor.

### Foreign Language Requirement

Knowledge of the structure of a language or languages (other than English) outside the student's general language family.

### Master of Science in Computational Linguistics

Computational linguistics is an interdisciplinary field addressing the computational analysis and production of human language. The field is situated between linguistics, computer science, and cognitive

science, borrowing insights from linguistics and methodology from computer science. Computational linguistics is largely an applied discipline concerned with practical problems. Typical applications include: machine translation (translating from one language to another), information retrieval (finding relevant documents or parts of documents in large collections of texts), cognitive modeling, sentiment analysis (for example in product reviews), automatic summarization, and computer assisted language learning.

### Course Requirements

The M.S. in Computational Linguistics consists of a minimum of 33 credit hours, 39 if the student needs to fulfill the Math and Logic Foundation, which consists of S520 (Department of Statistics) and Q520 (Cognitive Science Program). Required courses include L545, L645, L665, L715, L614 and A594 (offered by the Department of Computer Science in the School of Informatics). In addition, students must select a specialization in morpho-syntax—L543 plus one of L544, L546, or L643—or in morpho-phonology—L542, plus either L544 or L642. A grade point average of 3.0 (B) must be achieved in these ten core courses. Two additional electives must be taken from the following lists:

Linguistics: L520, L541, L542, L543, L544, L546, L615, L642, L643, L646, L7xx (relevant seminars)

Computer Science: A590, B401, B403, B555, B651, B659

Informatics: I529, I532, I534

Information and Library Science: Z543, Z639

Cognitive Science: Q550

### Programming Language Requirement

L555 or equivalent course or knowledge approved by the department.

### Bachelor of Science/Master of Science (3+2) in Computational Linguistics

Computational linguistics is an interdisciplinary field incorporating insights and methodology from linguistics, computer science, and cognitive science. It is essentially an applied discipline concerned with practical problems in the computational analysis and production of human language. Typical applications include: machine translation (translating from one language to another), information retrieval (finding relevant documents or parts of documents in large collections of texts), cognitive modeling, sentiment analysis (for example in product reviews), automatic summarization of texts, and computer-assisted language learning. This accelerated program permits students to obtain both B.S. and M.S. degrees in five years, providing them with the requisite skills for industry jobs in information technology.

### Admission to graduate status

For admission to the Master's level of the B.S./M.S. Program, students must have completed at least 32 hours of core requirements towards the B.S. degree, with a Major GPA of at least 3.0 at the time of admission to the program.

Students in the program are normally classified as undergraduates until the end of the first semester in

which 120 or more hours of credit toward graduation have been earned. During this semester, students in good standing, defined as a Major GPA of at least 3.0, must submit the standard application to the University Graduate School and initiate the transition to graduate status. If the transition to graduate status is delayed beyond this time, Master's status will normally revert to undergraduate B.S. status. Students are advised to check on the effect that transition-to-graduate status may have on existing undergraduate funding; the possibility of graduate funding is conditional upon transition to graduate status. Those not in good standing at this time are dropped from the program and reclassified as undergraduate B.S. students.

Students in the B.S./M.S. program must complete at least 15 hours of coursework while registered in graduate status. Normally, this would encompass no fewer than two semesters.

### Course Requirements

The B.S./M.S. in Computational Linguistics consists of a minimum of 133 credit hours in six areas. Required courses include the following:

#### General Education and College CASE Requirements

English Composition, Mathematical Modeling; World Languages and Cultures/CASE Foreign Language requirement (4 semesters of FL or equivalent); CAPP course; Public Communication; Arts and Humanities (2 courses); Social and Historical Studies (2 courses); Natural and Mathematical Sciences (4 courses); Diversity in the United States (CASE DUS, 1 course)

#### Math and Logic Foundation

Mathematics M212, Statistics S320, Philosophy P250 or Cognitive Science Q250

#### Core UG Computational Requirements

Linguistics L203, L245, L306, L307, L310, L415, L435, L445; Computer Science C211, C212, C241

#### Graduate Specialization Requirements

Linguistics: L614, L645, L665, L715;

Computer Science: A594 and either B401 or B403;

Library & Information Science: S534 or Z543

In addition, students must select a specialization in morpho-syntax—L543 plus one of L544, L546, or L643—or in morpho-phonology—L542 plus either L544 or L642. A grade point average of 3.0 (B) must be achieved in these nine core courses.

Three additional electives must be taken from the following list: Linguistics: L520, L541, L542, L543, L544, L546, L615, L642, L643, L464, L7xx (relevant seminars).

One of these electives will be waived if the student has taken L308, L315, or L325 during the undergraduate phase of the degree program.

Computer Science: A290, A590, B503, B555, B651, B659;

Informatics: I529, I532, I534;

Library and Information Science: S543, S604, S636, S637, S661, Z543;

Cognitive Science: Q351, Q520, Q550.

### Outside Concentration

(12 credit hours in one department) The following disciplines are appropriate for an outside concentration: cognitive science, computer science, informatics, mathematics, psychology, or a foreign language (the latter must be different from the language used to fulfill the WLC requirement). Alternatively, students can fulfill this requirement through a minor offered by any of these departments.

### Internship

(Optional 2-3 credit hours) Students have the option of participating in a summer internship between the 4th and 5th years.

### Doctor of Philosophy Degree Admission Requirements

Admission to the Ph.D. program will be based upon evaluation of (1) previous academic record, (2) level of achievement on the Graduate Record Examination General Test, (3) three letters of recommendation, (4) previous exposure to linguistics and related course work, and (5) compatibility of interests with those of the faculty.

### Fields of Study

The doctorate is normally pursued in areas such as phonetics, phonology, morphology, syntax, semantics, historical linguistics, African linguistics, computational linguistics, and sociolinguistics. Other concentrations, including a combined degree with cognitive science, are also possible with the approval of the department.

### Course Requirements

A minimum of 90 credit hours, including dissertation. Specific requirements include L501 or similar course in research methods, and one graduate course each in phonetics, phonology, syntax, and semantics, and in three of the following five areas: morphology, historical linguistics, sociolinguistics, typology or psycholinguistics/language acquisition. At least 12 credit hours in linguistics at the 600-700 levels, with requirements as follows: at least two courses at the 600 level. Three credit hours must be in 700-level linguistics classes. Moreover, systematic engagement in four semesters of departmental workshops and colloquia is required. Students should plan on attending workshops and colloquia which are scheduled during the semester. Systematic engagement entails documented attendance at approximately 75% of the scheduled colloquia and workshops for each semester. Additional course requirements may be set by the student's advisory committee.

### Minor

The choice of a minor field should be agreed to by the student's advisory committee. The specific requirements for the minor are established by the department that grants the minor. The student is responsible for ascertaining what those requirements are and for meeting them.

### Advisory Committee

All students in the Ph.D. program will select an advisory committee consisting of at least three faculty members,



one of whom should normally represent the student's minor field. The committee must be selected no later than the end of the semester following the completion of the master's degree at Indiana University, or, in the case of students entering the program with master's degrees from other institutions, no later than two semesters after matriculation. Students admitted directly into the PhD program without a master's degree should select their committee no later than their second year of study.

Students will plan their programs with the advisory committee, which will be responsible for counseling students with regard to the qualifying examination, setting the examination, and administering it.

### Foreign Language Structure

Knowledge of the structure of a language other than English and outside the student's general language family (choice to be determined in consultation with the student's advisory committee). The structure requirement can be fulfilled in three ways: (1) by completing a one-semester course on the structure of some language; (2) by completing a two-semester elementary level sequence of a language; (3) by completing the field methods sequence L653-654.

### Research Tools Requirements

(1) Reading or speaking knowledge of a foreign language relevant and applicable to doctoral study in the student's research area, and (2) proficiency in a research skill appropriate to the student's research area, including, but not limited to, reading knowledge in an additional foreign language, statistics, logic, programming, methods in social science research, or field methods. Proficiency is normally demonstrated by two semesters of appropriate instruction. Students may not count field methods classes for both the foreign language structure and research tools requirement. The choice of appropriate research tools is to be determined in consultation with the student's advisory committee.

### Qualifying Examination

Comprehensive; the examination is on two distinct areas of linguistics - one primary, one secondary - and requires the student to develop five research proposals and one research paper. Specific focus and scheduling of the examination is determined by the student's advisory committee.

### Research Proposal

After nomination to candidacy, the student will select a research committee composed of no fewer than three members of the Department of Linguistics faculty and an outside representative. This committee must approve the proposed dissertation topic.

### Final Examination

Oral defense of dissertation. This defense is open.

### Ph.D. in Linguistics with a Concentration in African Languages and Linguistics Course Requirements

A minimum of 90 credit hours, including dissertation. Specific requirements include A501, L653-L654, one graduate-level course each in phonetics, phonology,

syntax, and historical linguistics, plus at least two additional courses in linguistics at the 600-700 levels. Where appropriate, additional courses may be assigned by the student's advisory committee.

### Foreign Language Requirements

Three languages: (1) proficiency in two foreign languages, one of which must be an African language and the other normally French or German; and (2) knowledge of the structure of a foreign language or language group other than Romance or Germanic.

(All other requirements are the same as the above for the Ph.D. in Linguistics.)

### Ph.D. in Linguistics with a Concentration in Computational Linguistics Course Requirements

A minimum of 90 credit hours, including dissertation. Specific requirements include L545, L555, L615, L645, one graduate-level course each in phonetics, phonology, syntax, and at 6 additional credit hours in linguistics at the 600-700 levels. Where appropriate, additional courses may be assigned by the student's advisory committee.

### Research Tool Requirements

The student must demonstrate proficiency (1), in the basics of discrete mathematics or mathematical linguistics, which can be met by courses such as L611 or Q520; and (2) in programming techniques, with working knowledge of at least two programming languages.

### Qualifying Examination

The qualifying exam is comprehensive; the examination is on two distinct areas of computational linguistics and/or linguistics. At least one of the qualifying examinations must entail a practical software artifact. The artifact may be a program, a computational grammar, an implemented scheme for corpus annotation, or some other approved artifact. The other examination may take the form of a written paper (of publishable quality) or a written exam. Specific focus and scheduling of the examination is determined by the student's advisory committee.

(All other requirements are the same as the above for the Ph.D. in Linguistics.)

### Ph.D. Minor in Linguistics

Doctoral students in other departments may choose linguistics as an outside minor. Twelve (12) credit hours of approved courses are required; at least nine (9) credit hours must be from courses offered in the Department of Linguistics. A grade point average of 3.0 (B) or higher must be achieved in these courses. The specific program for satisfying this requirement should be developed in consultation with a linguistics faculty member serving as a minor representative on the student's advisory committee.

### Ph.D. Minor in African Languages and Linguistics

The minor consists of a minimum of four courses (12 credits) including the following: (1) one course in an African language at the 600 level or higher, (2) A501, and (3) two additional courses in African languages or linguistics approved by a linguistics faculty member serving as a minor representative on the student's



advisory committee. A grade point average of 3.0 (B) or better must be achieved in these courses.

### **Ph.D. Minor in Computational Linguistics**

The minor consists of a minimum of 15 credit hours of course work, including the following: (1) L545 and L645, (2) one of L503, L541, L542, L543, or L546 and (3) two specialization courses taken from the following: L665 (Linguistics), B651 (Computer Science), Q520 (Cognitive Science), S522 (Speech and Hearing Sciences), Z543 (ILS) and seminar courses such as P657 (Psychology), L700 or L715 (Linguistics) or other courses (such as L614) approved by a linguistics faculty member serving as a minor representative on the student's advisory committee. A grade point average of 3.0 (B) or higher must be achieved in these courses.

### **Faculty**

#### **Chairperson**

Kenneth de Jong\*

#### **Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### **Chancellor's Professor Emeritus**

Daniel A. Dinnsen\*

#### **Rudy Professor Emeritus**

Albert Valdman\* (French and Italian)

#### **Distinguished Professor Emeritus**

Paul Newman\*

#### **Professors Emeriti**

Robert Botne, Clancy Clements, Steven Laurence Franks, Yoshihisa Kitagawa, Robert F. Port, Frances Trix

#### **Professors**

Stuart Davis\*, Kenneth J. de Jong\*, Sandra Kuebler\*, Samuel G. Obeng\*

#### **Associate Professors**

Kelly Harper Berkson\*, Damir Cavar\*, Thomas Grano\*, Barbara Vance\* (French and Italian)

#### **Assistant Professors**

Malgorzata Cavar\* (Slavic and East European Languages and Cultures), Monica K. Nesbitt-Williams\*, Francis Morton Tyers\*

#### **Senior Lecturer**

Ann C. Bunger

#### **Adjunct Professors**

Michael Adams\* (English), Kathleen Bardovi-Harlig\* (Second Language Studies), Tessa Bent\* (Speech and Hearing Sciences), Phil Connell\* (Speech and Hearing Sciences, Emeritus), Isabelle Darcy\* (Second Language Studies), Laurent Dekydtspotter\* (French and Italian, Second Language Studies), Manuel Díaz-

Campos\* (Spanish and Portuguese), J. César Félix-Brasdefer (Spanish and Portuguese), Tracy Alan Hall\* (Germanic Studies), Susan Herring\* (Information and Library Science), Lawrence Moss\* (Mathematics), David Pisoni\* (Psychology), Rex Sprouse\* (Second Language Studies), Natsuko Tsujimura\* (East Asian Languages and Cultures, Emerita)

#### **Adjunct Clinical Professor**

Alwiya Omar (African Studies)

#### **Adjunct Associate Professors**

Patrícia Matos Amaral\* (Spanish and Portuguese), Markus Dickinson, George Fowler\* (Slavics and East European Languages and Cultures), Phil LeSourd\* (Anthropology, Second Language Studies), Chien-Jer "Charles" Lin\* (East Asian Languages and Cultures), Steven Lulich\* (Speech and Hearing Sciences), Oner Ozcelik\* (Central Eurasian Studies), John Paolillo\* (Informatics, Information and Library Science), Kevin Rottet\* (French and Italian), David Stringer\* (Second Language Studies)

#### **Adjunct Assistant Professors**

Allen Riddell\* (Information Science), Nozomi Tanaka\* (East Asian Languages and Cultures)

#### **Adjunct Senior Scholar/Scientist**

Antonia Schleicher (Global and International Studies)

#### **Adjunct Senior Lecturer**

Miriam Shrager (Slavic and East European Languages and Cultures)

#### **Academic Advising**

For Master of Arts and Master of Science in Linguistics and Doctor of Philosophy in Linguistics: Professor Thomas Grano\*, Ballantine Hall 513 (812) 855-6456, tgrano@indiana.edu

#### **Courses**

- **LING-L 501 Introduction to Research Methods (2 cr.)** This course provides an overview of skills and techniques for conducting research in Linguistics. Topics that will be covered include developing a research question, selecting appropriate methodologies and analyses, best practices in data management, responsible conduct of research, and discipline-specific writing conventions. Requirements for the course will include observation of faculty research presentations, the preparation of a research proposal, and attendance at four colloquium talks. A background in introductory Linguistics will be assumed.
- **LING-L 503 Introduction to Linguistics for Graduate students (3 cr.)** Introduction to the basic tools of grammatical analysis (of sounds, words, sentences and meanings) for graduate students having little background in formal linguistics. Suitable for students interested in linguistics, computer science/informatics, foreign languages, speech and hearing sciences, second language studies,

elementary or secondary English education, psychology, or cognitive science.

- **LING-L 515 The Computer and Natural Language (3 cr.)** Present-day computer systems work with human language in many different forms, whether as stored data in the form of text, typed queries to a database or search engine, or speech commands in a voice-driven computer system. We also increasingly expect computers to produce human language, such as user-friendly error messages and synthesized speech. This course surveys a range of linguistics issues and problems in computational linguistics.
- **LING-L 520 Sociolinguistics (3 cr.)** Examination of theoretical perspectives on language as a social phenomenon. Questions of linguistic variation, including social and contextual factors contributing to variation.
- **LING-L 530 Introduction to Historical Linguistics (3 cr.)** P: L542 or equivalent. Principles of language classification and subclassification. Processes of diachronic change. Methods of linguistic reconstruction, especially the comparative method and internal reconstruction.
- **LING-L 541 Introductory Phonetics (3 cr.)** Survey of speech sound types in languages of the world with practice in discrimination, transcription, and production. Introduction to acoustic phonetics, physiology of speech production, and speech perception; with concurrent laboratory section.
- **LING-L 542 Phonological Analysis (3 cr.)** An introduction to the principles of contemporary phonological theory and tools of phonological analysis and description. The format of the course is oriented toward data-based problems from a wide variety of languages.
- **LING-L 543 Syntactic Analysis (3 cr.)** An examination of the methods and argumentation used in syntactic analysis conducted within the framework of generative grammar. Emphasis on constructing and evaluating grammatical analyses and promoting critical understanding of the generative framework.
- **LING-L 544 Morphological Analysis (3 cr.)** Introduction to the basic concepts and approaches to morphological analysis and description, to different theories of word structure, and to issues in the relation between morphology and phonology and between morphology and syntax. Data-based problem solving from a wide variety of languages.
- **LING-L 545 Computation & Linguistic Analysis (3 cr.)** P: L555 (or equivalent, approved by course instructor) This course explores how linguistic analysis can be stated as computer programs, emphasizing the design of data structures used in linguistic analysis, the computational issues underlying them, and their use in natural processing.
- **LING-L 546 Semantics (3 cr.)** P: L543 or equivalent. Introduction to current semantic theory, its tools, concepts, and principles. Emphasis on constructing detailed fragments of natural language with syntactic and semantic components.
- **LING-L 555 Programming for Computational Linguistics (3 cr.)** Introduction to the fundamentals of programming and computer science, aiming at attaining practical skills for text processing. Through lectures, lab sessions, and weekly or bi-weekly assignments, students will learn the essentials of a given programming language (e.g., Perl) and how to apply these skills to natural language data.
- **LING-L 585 Graduate Topics in Linguistics (3 cr.)** This course leads students into the systematic investigation of variable topics in linguistics at a graduate level.
- **LING-L 590 Linguistic Structure (3 cr.)** Analysis of particular aspects of the structure of a language or of a group of closely related languages. Methods used may include text analysis, informant work, study of secondary sources, lectures, reports.
- **LING-L 611 Models of Linguistic Structure (3 cr.)** Formulations of linguistic structures—finite-set, phrase-structure, transformational dependency, predictive—with emphasis on their mathematical properties. Mathematical concepts underlying these formulations, such as sets, relations, Markov processes, and automata.
- **LING-L 614 Alternative Syntactic Theories (3 cr.)** P: L543 or equivalent. An examination of a current syntactic framework other than the standard framework in terms of specific issues of syntactic analysis and general claims about the nature and organization of the syntax of natural languages. Emphasis on developing analyses within that framework. May be repeated for credit when topic varies.
- **LING-L 615 Corpus Linguistics (3 cr.)** P: L543. Advances in computer technology have revolutionized the ways linguists can approach their data. By using computers, we can access large bodies of text (corpora) and search for phenomena. The course will give an introduction to the methodology and applications in the field.
- **LING-L 620 Advanced Sociolinguistics (3 cr.)** Sociolinguistic methodology and data analysis, language ideology, and language in social institutions. Course topics include: quantitative and qualitative methods (variationist, ethnographic, and discourse analytic methods); Anglo-American, Continental pragmatics; language and sociocultural identity (culture, politeness, power, solidarity, and gender); and institutional discourse (juridical, therapeutic, political, religious, etc.).
- **LING-L 625 Bilingualism and Language Contact (3 cr.)** Problems of multilingualism, including diglossia. Examination of selected cases illustrating the relationship between language contact and linguistic change.
- **LING-L 630 Lexicology (3 cr.)** Analysis of the lexical structure of languages. The word and its morphological and semantic properties. Application of lexicology to practical problems in dictionary making (lexicography).
- **LING-L 636 Pidgins and Creoles (3 cr.)** Survey of the field of pidgin and creole linguistics: presentation of the structure of selected prototypical pidgins and creoles; review of the theories for the genesis of creoles and their relationship to current issues in language acquisition and historical linguistics; discussion of language planning issues specific to pidgins and creoles, as well as discussion of current issues.

- **LING-L 641 Advanced Phonetics (3 cr.)** P: L541 or equivalent. Experimental analysis of the speech signal; speech articulation and the structure of phonetic space. A survey of current theories of speech production and perception with experience designing and conducting experiments, and some consideration of phonetic factors that determine the choice of particular sound contrasts in languages.
- **LING-L 642 Advanced Phonological Description (3 cr.)** P: L542 or equivalent. Problems of phonological description and their theoretical implications. Practice in formulating and evaluating explanatory statements about various phonetic, phonotactic, and morphophonemic properties of languages.
- **LING-L 643 Advanced Syntax (3 cr.)** P: L543 or equivalent. Syntactic analysis and recent developments of principles and parameters/minimalist theory. Taking up from L543, reviews core modules of grammar from L543 and examines topics such as logical form, empty categories, barriers, functional categories, and relativized minimality. Introduces concepts of minimalist theory. Training in abstract and squib writing, paper presentation.
- **LING-L 645 Adv Natural Language Processing (3 cr.)** P: L555 (or equivalent) and L545. An introduction to statistical models and machine learning paradigms in NLP. Covers basic notions in probability and information theory, focusing on the concepts needed for NLP, including Markov Models. Additional topics may include word sense disambiguation, text categorization, and statistical alignment methods and their use in machine translation.
- **LING-L 646 Advanced Semantics (3 cr.)** This course is a direct continuation of L546, designed to help prepare you to understand, evaluate, and produce original research in formal semantics. The course will primarily be organized around two broad topics that have been central to the development of formal semantics as currently practiced but that were treated only very briefly in L546: intensional semantics and the semantics of definite and indefinite noun phrases. You will also develop your own research project in formal semantics, and present that research in oral form (twice) and in written form (twice).
- **LING-L 653 Field Methods in Linguistics I (3 cr.)** Techniques of data collection and analysis based on work with a native speaker of a language unknown to the students.
- **LING-L 654 Field Methods in Linguistics II (3 cr.)** Techniques of data collection and analysis based on work with a native speaker of a language unknown to the students.
- **LING-L 665 Applying Machine Learning Techniques in Computational Linguistics (3 cr.)** P: L545 or equivalent Introduction to major algorithms in Machine Learning (ML) as well as applications of these techniques to a wide range of CL topics. Course includes an introduction to CL and to W focused on supervised algorithms: decision trees and rule learning. Also considered are applications of ML algorithms to CL problems.
- **LING-L 670 Language Typology (3 cr.)** Introduction to linguistic typology, the study of how languages differ and how they are alike in terms of formal features. Focuses on a variety of syntactic and morphological features of languages including: lexical classes, word order, case and agreement systems, animacy, definiteness, and gender; valence-changing devices; verbal categories and subordination.
- **LING-L 685 Linguistics Teaching Practicum (1-3 cr.)** P: Completion of 24 hours of graduate coursework, plus 600-level coursework in the area of the practicum. Under faculty supervision, students provide instruction in an undergraduate course in their area of specialization, for example, phonetics, phonology, syntax, sociolinguistics. This practicum also provides experience in developing course materials (e.g., problem sets, homework exercises, reading selections), and testing.
- **LING-L 690 Advanced Readings in Linguistics (1-4 cr.)** S/F grading.
- **LING-L 695 M.A. Thesis Research (1-4 cr.)** This course is eligible for a deferred grade.
- **LING-L 700 Seminar on Current Issues (1-4 cr.)** This seminar will deal with major books and articles that have defined important areas of debate in the current development of linguistic theory. The specific title will be announced well in advance of each semester. Course may be retaken for up to 12 credit hours.
- **LING-L 710 Seminar in Phonetics (3 cr.)** Selected problems in the acoustic, motor, and auditory structure of the sounds of human language. May be repeated for credit when topic changes.
- **LING-L 712 Seminar in Phonology (3 cr.)** Research and reports on selected problems of generative phonology. May be repeated for credit when topic changes.
- **LING-L 714 Seminar in Syntax (3 cr.)** Advanced treatment of a topic, construction, or theoretical concept in syntax using a current theoretical model. May be repeated for credit when topic changes.
- **LING-L 715 Seminar in Computational Linguistics (3 cr.)** The seminar will introduce students to current research in the field of Computational Linguistics. May be repeated for up to 15 credits.
- **LING-L 720 Seminar in Sociolinguistics (3 cr.)** Selected problems concerning the relationship between language and society. May be repeated for credit when topic changes.
- **LING-L 760 Seminar in Historical Linguistics (3 cr.)** Selected problems concerning linguistic reconstruction, processes of diachronic change, and language classification. May be repeated for credit when topic changes.
- **LING-L 780 Seminar in Semantics (3 cr.)** Selected problems in the area of meaning and the relationship between language and semantic interpretation. May be repeated for credit when topic changes.
- **LING-L 800 Research (arr. cr.)** This course is eligible for a deferred grade.

## African Linguistics

- **LING-A 501 Introduction to African Linguistics (3 cr.)** Introduction to African Linguistics (3 cr.) Introduction to the linguistic study of African languages; questions of language distribution, typological and genetic classification, comparative reconstruction, and structural aspects of individual languages.
- **LING-A 502 Language in Africa (3 cr.)** Language in the lives and behavior of African people. Dynamics of language spread and multilingualism. Literacy, language and education. Linguistic ritual: greetings, condolences, apologies, leave-taking. Joking and insulting relationships. Stories and storytellers. Proverbs and their use. Power of language in society.
- **LING-A 503 Bantu Linguistics (3 cr.)** Structural comparisons of Bantu languages at levels of phonology, morphology, and syntax, noting differences and similarities of various East African languages.
- **LING-A 504 Chadic Linguistics (3 cr.)** P: Reading knowledge of French or German. An introduction to the Chadic language family. The relationship of Chadic to Afro-Asiatic and the membership and internal classification of the Chadic family. Common structural features of present-day Chadic languages and the reconstruction of Proto-Chadic.
- **LING-A 747 Seminar in African Linguistics (4 cr.)** Research on specific problems of African linguistics. Course may be repeated for credit.

## Mathematical Physics

### College of Arts and Sciences

Departmental URL: <http://www.indiana.edu/~iubphys/research/mathmatical.shtml>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degree Offered

#### Doctor of Philosophy

This program offers advanced graduate training for superior students in the overlapping areas of mathematics, theoretical physics, and their applications from a unified point of view and promotes research in this field.

General supervision of the program is controlled by the Interdepartmental Graduate Committee on Mathematical Physics. While no master's degree is offered, a student may qualify for a master's degree in mathematics or physics during the course of study. A student usually enters the program at the beginning of the second year of graduate study in mathematics or physics.

### Special Program Requirements

(See also general University Graduate School requirements.)

Doctor of Philosophy Degree

## Admission Requirements

Students in the Mathematical Physics Program must be enrolled in either the Department of Mathematics or the Department of Physics. Basic preparation should include courses in advanced calculus, linear algebra, modern algebra, complex variables, classical mechanics, electromagnetism, quantum mechanics, modern physics, thermodynamics, and statistical mechanics. Knowledge of the following fields is desirable: real analysis, differential equations, probability, topology, differential geometry, and functional analysis.

## Course Requirements

A total of 90 credit hours, including dissertation. Required courses are determined by the advisory committee on the basis of the student's previous training and main fields of interest. (For a starting point, see requirements for Mathematical Physics minor.)

## Advisory Committee

Composed of members of both the Department of Mathematics and the Department of Physics.

## Minors

Mathematics and physics.

## Foreign Language/Research-Skill Requirement

Same as in the department of residence.

## Qualifying Examination

Consists of parts of the Departments of Mathematics and Physics qualifying examinations, as determined by the student's advisory committee.

## Final Examination

Oral and public defense of dissertation.

## Faculty

### Interdepartmental Graduate Committee on Mathematical Physics

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Chairperson

Professor Mike Berger\* (Physics)

### College Professor

Roger Meyer Temam\* (Mathematics)

### Distinguished Professors

V. Alan Kosteletsky\* (Physics), Roger Newton\* (Emeritus, Physics), Roger Temam\* (Mathematics)

### William H. Boucher Professor

Vladimir Touraev\* (Mathematics)

### Professors

John Challifour\* (Emeritus; Mathematics, Physics), Herbert Fertig\* (Physics), Robert Glassey\* (Emeritus, Mathematics), David Hoff\* (Emeritus, Mathematics), Michael Jolly\* (Mathematics), Paul Kirk\* (Mathematics),

Andrew Lenard\* (Emeritus; Mathematics, Physics),  
Gerardo Ortiz\* (Physics), Peter Sternberg\* (Mathematics),  
Shouhong Wang\* (Mathematics), Kevin Zumbrun\*  
(Mathematics)

### Academic Advisor

Professor Mike Berger\*, Swain Hall West 117, (812)  
855-2609

### Courses

See listings of the Departments of Mathematics and  
Physics.

## Mathematics

### College of Arts and Sciences

Departmental E-mail: [mathdept@indiana.edu](mailto:mathdept@indiana.edu)

Departmental URL: <http://www.math.indiana.edu/>

(Please note that when conferring University Graduate  
School degrees, minors, certificates, and sub-plans, The  
University Graduate School's staff use those requirements  
contained only in *The University Graduate School  
Bulletin*.)

### Curriculum

### Degrees Offered

Master of Arts, Master of Arts for Teachers, and Doctor of  
Philosophy

Special Departmental Requirements

(See also general University Graduate School  
requirements.)

### Admission Requirements

Undergraduate mathematics major or its equivalent.

### Definitions

The Department of Mathematics offers core courses to  
give our students a broad education in mathematics and to  
prepare them for more advanced studies in the respective  
subjects. These core courses are divided into topics as  
follows:

- Algebra
  - M501/502 Algebra
  - M507/508 Lie Algebras and Lie Groups
- Analysis
  - M511/512 Real Analysis
  - M513/514 Complex Analysis
  - M518 Fourier Analysis (offered sporadically)
- Topology and Geometry
  - M521/522/M529 Topology
  - M531/M533/534 Differential Geometry
- Differential Equations
  - M540/541/542 Partial Differential Equations
  - M544/545 Ordinary Differential Equations
- Dynamical Systems / Probability
  - M557/558 Dynamical Systems
  - M560/M563/564 Probability

- Numerical Methods
  - M571/572 Analysis of Numerical Methods
- Logic and Set Theory
  - M583/584 Set Theory/Recursion Theory
- Outside and miscellaneous courses (cryptography,  
quantum computing, financial mathematics, computer  
science, economics, and physics are commonly  
used, but others may also be appropriate). Course  
choices in this category must be approved by the  
student's advisor and the director of graduate  
studies.

These topics serve both to satisfy our breadth  
requirements as well as to define the possible research  
areas for a major and minor. Courses other than  
the core courses may be assigned to these topics  
with approval of the instructor and the director of graduate  
studies. Students with a strong interest in Physics  
are encouraged to consider the Ph.D. program in  
Mathematical Physics.

### Master of Arts Degree

#### General Course Requirements

Students must complete a total of 30 credit hours, of which  
18 credit hours must be from the core courses, taken  
from at least three different topics. With the permission  
of the director of graduate studies, core courses can  
be substituted by more advanced courses from the same  
topic.

### Master of Arts for Teachers Degree

#### Course Requirements

Students must complete a total of 36 graduate credit  
hours, with at least one 3-credit hour course in five of the  
eight topics. At least 21 of the 36 credit hours must be  
mathematics graduate courses. This includes 400-level  
courses that carry graduate credit. Those courses are  
assigned to topics by the director of graduate studies. At  
most 6 credit hours of other undergraduate mathematics  
courses at the 300-level or above may count towards the  
36 credit hours, but they require consent of the director of  
graduate studies.

In addition to these 6 credit hours of undergraduate  
mathematics courses, M391 can also count towards the  
36 credit hours.

### Doctor of Philosophy Degree

#### Course Requirements

The following course requirements are designed to  
provide the broad background needed for the successful  
pursuit of research leading to the dissertation. Students  
must complete 36 credit hours in mathematics at the 500,  
600, or 700 level, excluding M551, M553, M555, M556,  
M595-M596, and M599, and, in addition, must complete 2  
credit hours in M599. Their program of study will depend  
upon their background and interests. Students should  
formulate a program in consultation with their faculty  
advisor.

Reading courses may not be used to satisfy the  
requirements of these options unless they are  
specifically approved by the director of graduate studies.  
A dissertation is required.



## Field of Research (Major Area)

The field of research or topic of the major will be one of the topics listed above, or will be listed as Pure Mathematics or Applied Mathematics and Computation, with approval of the advisor and the director of graduate studies.

## Breadth Requirements

Students must complete 24 credit hours from the core courses, with 6 hours in each of at least four different topics. With the permission of the director of graduate studies, core courses can be substituted by more advanced courses within the same topic.

One of the topics covered must be in the major area.

## Minor

A Ph.D. student must complete a minor in mathematics, or in some other department. If the student chooses to minor in another department, she or he must satisfy that department's requirements as described in the University Graduate School Bulletin and have that department notify the Department of Mathematics Graduate Office that she or he has done so.

To complete a minor in mathematics itself, the student must complete 9 credit hours of courses in one of the topics above, except the Outside topic. This topic must also be different from that of the Major (Field of Research), and the courses used to cover the Minor must be different from those used to cover the breadth requirements. The chosen topic will then be the topic of the minor. Alternatively, it can be listed as Pure Mathematics or Applied Mathematics and Computation, with approval of the advisor and the director of graduate studies.

## Foreign Language Requirement

The student must demonstrate reading proficiency in one foreign language in which major research articles in mathematics are published. Acceptable languages are German, French, and Russian or another language deemed to be more relevant by the dissertation advisor. The Graduate Policy Committee of the Department of Mathematics will consider petitions for substituting other languages.

## Qualifying Examinations

The Department of Mathematics qualifying exam comprises a three-tier system designed to help determine as quickly and efficiently as possible whether students have mastered basic mathematics, exhibit the necessary abilities and self-discipline, and have prepared themselves to pursue the independent research necessary to earn the Ph.D. degree.

### Tier 1 (Comprehensive 400-Level Written Exams)

Ph.D. students will take written exams on both 400-level algebra and analysis. The exams will be given during the week before classes begin in the fall and in the spring. Each part of the exam lasts four hours.

New students may take either or both of the Tier 1 exams in August when they first arrive. A student is allowed to try each exam each time it is offered, but s/he must pass both exams prior to the end of the second year of study.

Syllabi, references, and sample problems for these exams are available on the Department of Mathematics web site.

### Tier 2 (Committee Review)

Each spring/summer, a departmental committee will review the record of every student who has either:

- Completed two years in the program without previous review, or
- Passed the Tier 1 exams on entrance to the program and elects thereview at the end of the first year.

The student will:

- Provide to the graduate office a personal statement that describes the student's plan for further study and research, including a proposal for the area of research and a topic for a minor.
- Request an "endorsement" from his or her (interim) advisor or another faculty member. By endorsing a student, the faculty member agrees to guide the student to prepare for the Tier 3 exam.

The review committee will decide which students may continue toward Ph.D. candidacy. The committee's considerations will include:

- Performance on the Tier 1 exams.
- Performance in 500-level coursework.
- A faculty endorsement.
- Written personal statement by student.
- Student's performance of assistantship duties.

In support of the Tier 2 review, grades in 500-level courses will be given and evaluated according to the following guidelines:

- A grade of A means that, based on the student's work in that course, the instructor believes the student will succeed in being admitted to Ph.D. candidacy.
- A grade of B means that the student's work in that course is satisfactory, but the instructor has reservations (based on that work) about the student's ability to be admitted to candidacy.
- Lower grades will indicate unsatisfactory work.

All students must maintain at least a B average in their coursework, in accordance with currently published departmental and university guidelines.

As indicated above, students can accelerate their progress in the program by passing the Tier 1 exams on entrance into the program and electing to take the Tier 2 review at the end of their first year. The review committee will treat this as favorable for a student's case. Students who elect to accelerate their progress in this way will be expected to pass the Tier 3 (Oral Exam) by the end of the Fall semester of their third year.

Students who do not receive a recommendation to continue will be encouraged to complete the M.A. degree. If they have financial support at the time of review, they will be entitled to at least one additional semester of support in order to do so.

### Tier 3 (Oral Exam)

After passing the Tier 2 review, a student must arrange and pass an oral examination before October of his or

her fourth year. The student will seek the direction of a faculty member as a scientific advisor for this exam. The faculty member will assign a reading list consisting of texts and research-level papers; this material will comprise the major topic of the exam. If and when the scientific advisor feels the student is ready for the exam, the advisor will arrange for a three-member faculty committee to administer the exam.

The student will submit for approval a proposal for the Tier 3 exam to the director of graduate studies, consisting of topics for the major and minor area of the examination, a syllabus and a reading list for the major and minor topic, and the list of three faculty members serving as the Tier 3 committee.

These exams are projected to last approximately two hours, and one of the committee members must be qualified to examine the student in the minor area, where the student must demonstrate 500-level mastery. In order to pass the exam, the student must:

- Demonstrate a level of mathematical ability and maturity sufficient for successfully undertaking a Ph.D. dissertation (normally in the major area of the exam), and
- Identify a faculty member willing to serve as Ph.D. advisor. This will typically, but not necessarily, be the faculty member who organized the exam.

### Ph.D. Minor in Mathematics

Doctoral students in other departments may complete a minor in mathematics by satisfying one of the following options: (1) 9 credit hours of mathematics courses at the 400 level or above, or (2) M343-M344 and 6 credit hours of mathematics courses at the 400 level or above. Reading courses (e.g., M800) and courses taken at other universities will not satisfy the course requirements for the Ph.D. minor.

### Faculty

#### Chairperson

Professor Kevin Pilgrim\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### College Professor

Roger Meyer Temam\*

#### Distinguished Professors

Michael J. Larsen\*, Roger Temam\*, Kevin Zumbrun\*

#### William H. Boucher Professor

Vladimir Touraev\*

#### Ruth N. Halls Professor

David Fisher\*

#### James H. Rudy Professor

Russell Lyons\*

#### Professors

S. Thomas Bagby\* (Emeritus), Eric D. Bedford\* (Emeritus), Hari Bercovici\*, Rabi Bhattacharya\* (Emeritus), Richard C. Bradley\* (Emeritus), John Challifour\* (Emeritus, Physics), Mihai Ciucu\*, Christopher G. Connell\*, Jiri Dadok\* (Emeritus), James F. Davis\*, Ciprian Demeter\*, Allan L. Edmonds\* (Emeritus), Marlies Gerber\*, Victor W. Goodman\* (Emeritus), Darrell Eugene Haile\* (Emeritus), David C. Hoff\* (Emeritus), Elizabeth Housworth\*, Michael S. Jolly\*, Christopher Martin Judge\*, Paul A. Kirk\*, Jee Heub Koh\*, Norm Levenberg\*, Ayelet E. Lindenstrauss\*, Charles Livingston\* (Emeritus), Morton Lowengrub\* (Emeritus), Valery Lunts\*, Daniel P. Maki\* (Emeritus), Michael Mandell\*, Lawrence S. Moss\*, Kent E. Orr\*, Kevin Michael Pilgrim\*, Sergey Ivanovich Pinchuk\*, Madan Puri\* (Emeritus), Billy Rhoades\* (Emeritus), Bruce Michael Solomon\* (Emeritus), Matthias Strauch\*, Peter J. Sternberg\*, Maynard Thompson\* (Emeritus), Dylan Thurston\*, Alberto Torchinsky\* (Emeritus), Shouhong Wang\*, Matthias Weber\*

#### Associate Professors

Matthew Bainbridge\*, Scott W. Brown\* (Emeritus), Nam Le\*, Matvei Libine\*, Ajay Ramadoss\*, Ji-Ping Sha\*, Noah Snyder\*, William H. Wheeler\*

#### Charlotte Ann Griffin Assistant Professor

Julia Plavnik\*

#### Assistant Professors

Wai Tong Fan\*

#### Director of Graduate Studies

Professor Matthias Strauch\*, Rawles Hall 130, (812) 855-3700

#### Courses

Students are advised to begin their study of a field with 400-level courses, unless their preparation in that field has been very good. M.A.T. students in mathematics, or M.A., M.S., or Ph.D. students in other departments, may receive graduate credit for any 400-level course that appears in this bulletin. Candidates for the M.A. or Ph.D. in mathematics should note that some 400-level courses do not satisfy certain degree requirements (see footnotes).

In the following list, the middle digit of the course number indicates the field of mathematics: x0y, algebra; x1y, analysis; x2y, topology; x3y, geometry; x4y, applied mathematics; x5y, mechanics; x6y, probability and statistics; x7y, numerical analysis; x8y, history and foundations.

- **MATH-M 403 Introduction to Modern Algebra I (3 cr.)**
- **MATH-M 404 Introduction to Modern Algebra II (3 cr.)**
- **MATH-S 403 Honors Course in Modern Algebra I (3 cr.)**
- **MATH-S 404 Honors Course in Modern Algebra II (3 cr.)**
- **MATH-T 403 Modern Algebra for Secondary Teachers (3 cr.)** This course does not ordinarily carry credit toward the M.A. or Ph.D. in mathematics. It may, however, be taken by M.A.T. students and

graduate students in other departments for graduate credit.

- **MATH-M 405 Number Theory (3 cr.)**P: M212 (Bloomington campus only) This course does not ordinarily carry credit toward the M.A. or Ph.D. in mathematics. It may, however, be taken by M.A.T. students and graduate students in other departments for graduate credit.
- **MATH-M 409 Linear Transformations (3 cr.)**Does not count toward the area requirements for the M.A. and Ph.D. in mathematics.
- **MATH-M 413 Introduction to Analysis I (3 cr.)**
- **MATH-M 414 Introduction to Analysis II (3 cr.)**
- **MATH-M 415 Elementary Complex Variables with Applications (3 cr.)**
- **MATH-M 420 Metric Space Topology (3 cr.)**This course does not ordinarily carry credit toward the M.A. or Ph.D. in mathematics. It may, however, be taken by M.A.T. students and graduate students in other departments for graduate credit.
- **MATH-M 425 Graph Network Theory and Combinatorial Analysis (3 cr.)**
- **MATH-M 435 Introduction to Differential Geometry (3 cr.)**
- **MATH-M 436 Introduction to Geometries (3 cr.)**
- **MATH-M 441 Introduction to Partial Differential Equations with Applications I (3 cr.)**
- **MATH-M 442 Introduction to Partial Differential Equations with Applications II (3 cr.)**
- **MATH-M 447 Mathematical Models and Applications I (3 cr.)**This course does not ordinarily carry credit toward the M.A. or Ph.D. in mathematics. It may, however, be taken by M.A.T. students and graduate students in other departments for graduate credit.
- **MATH-M 448 Mathematical Models and Applications II (3 cr.)**This course does not ordinarily carry credit toward the M.A. or Ph.D. in mathematics. It may, however, be taken by M.A.T. students and graduate students in other departments for graduate credit.
- **MATH-M 463 Introduction to Probability Theory I (3 cr.)**
- **MATH-M 464 Introduction to Probability Theory II (3 cr.)**
- **MATH-M 466 Introduction to Mathematical Statistics (3 cr.)**
- **MATH-M 471 Numerical Analysis I (3 cr.)**P: M301 or M303, M311, M343, and knowledge of a computer language such as Fortran, C, or C++. (Students with other programming backgrounds should consult the instructor.)
- **MATH-M 472 Numerical Analysis II (3 cr.)**P: M301 or M303, M311, M343, and knowledge of a computer language such as Fortran, C, or C++. (Students with other programming backgrounds should consult the instructor.)
- **MATH-M 482 Mathematical Logic (3 cr.)**
- **MATH-M 490 Problem Seminar (3 cr.)**
- **MATH-T 490 Topics for Elementary Teachers (3 cr.)**P: T103 or equivalent. Development and study of a body of mathematics specifically designed for experienced elementary teachers. Examples include probability, statistics, geometry, and algebra. Open only to graduate elementary teachers with consent of the instructor. (Does not count toward the area requirements for the M.A. and Ph.D. degrees in mathematics.)
- **MATH-M 501 Survey of Algebra (3 cr.)**P: M403-M404. Groups with operators: Jordan-Hölder theorem. Sylow theorems. Rings: localization of rings; Chinese remainder theorem. Modules over principal ideal domains: invariants. Fields: algebraic closure; separable and inseparable algebraic extensions; Galois theory; finite fields.
- **MATH-M 502 Commutative Algebra (3 cr.)**P: M501. Field theory: transcendental extensions; separable extensions; derivations. Modules: Noetherian and Artinian modules. Primary modules; primary decomposition; Krull intersection theorem. Commutative rings: height and depth of prime ideals. Integral extensions. Notions of algebraic geometry: algebraic sets; Hilbert Nullstellensatz; local rings.
- **MATH-M 503 Noncommutative Algebra (3 cr.)**P: M501. Simple and semisimple modules; density theorem; Wedderburn-Artin theorem. Simple algebras: automorphisms; splitting fields; Brauer groups. Representations of finite groups: characters; induced characters; applications.
- **MATH-M 505 Basic Number Theory I (3 cr.)**P: M403-M404. Congruence, units modulo  $n$ , lattices and abelian groups, quadratic residues, arithmetic functions, diophantine equations, Farey fractions, continued fractions, partition function, the Sieve method, density of subsets of integers, zeta function, the prime number theorem.
- **MATH-M 506 Basic Number Theory II (3 cr.)**P: M403-M404. Congruence, units modulo  $n$ , lattices and abelian groups, quadratic residues, arithmetic functions, diophantine equations, Farey fractions, continued fractions, partition function, the Sieve method, density of subsets of integers, zeta function, the prime number theorem.
- **MATH-M 507 Introduction to Lie Algebras and Lie Groups (3 cr.)**P: M403-M404, and M409 or M501. Nilpotent, solvable, and semisimple Lie algebras, exponential map, PBW theorem, Killing form, Cartan subalgebras, root systems, Weyl group, classification and representations of complex semisimple Lie algebras, Schur's lemma, maximal weight modules; correspondence between real Lie algebras and Lie groups, compact Lie groups, complex and real semisimple Lie groups, symmetric spaces.
- **MATH-M 508 Introduction to Lie Algebras and Lie Groups (3 cr.)**P: M403-M404, and M409 or M501. Nilpotent, solvable, and semisimple Lie algebras, exponential map, PBW theorem, Killing form, Cartan subalgebras, root systems, Weyl group, classification and representations of complex semisimple Lie algebras, Schur's lemma, maximal weight modules; correspondence between real Lie algebras and Lie groups, compact Lie groups, complex and real semisimple Lie groups, symmetric spaces.
- **MATH-M 509 Representations of Finite Groups (3 cr.)**P: M409 or equivalent. Groups, subgroups. Homomorphisms, isomorphisms. Transformation

- groups. The orthogonal and Euclidean groups  $O(3)$  and  $E(3)$ . Symmetry and discrete subgroups of  $E(3)$ . Crystallographic groups. Group representations. Reducible and irreducible representations. Group characters and character tables. Representations of the symmetric groups. Young tableaux. Symmetry classes of tensors.
- **MATH-M 511 Real Variables I (3 cr.)**Sets and functions, cardinal and ordinal numbers, set functions, kinds of measures, integration, absolute continuity, convergence theorems, differentiation and integration. Normed linear spaces, function spaces, linear functionals, Banach spaces, Hilbert spaces, Fourier transforms, Schwartz class.
  - **MATH-M 512 Real Variables II (3 cr.)**Sets and functions, cardinal and ordinal numbers, set functions, kinds of measures, integration, absolute continuity, convergence theorems, differentiation and integration. Normed linear spaces, function spaces, linear functionals, Banach spaces, Hilbert spaces, Fourier transforms, Schwartz class.
  - **MATH-M 513 Complex Variables I (3 cr.)**Algebra, topology, and geometry of the complex plane; analytic functions; conformal mapping; Riemann surfaces; Cauchy's theorem and formula; convergence theorems; infinite series and products; Riemann mapping theorem.
  - **MATH-M 514 Complex Variables II (3 cr.)**Algebra, topology, and geometry of the complex plane; analytic functions; conformal mapping; Riemann surfaces; Cauchy's theorem and formula; convergence theorems; infinite series and products; Riemann mapping theorem.
  - **MATH-M 518 Fourier Analysis (3 cr.)**The course will cover basic facts of Fourier series and orthogonal sets of functions, Fourier transforms, and applications. Different convergence properties of the Fourier, Haar, and Sturm-Liouville expansions will be considered. As time permits, applications to discrete and fast Fourier transforms, and wavelets, will be discussed.
  - **MATH-M 521 Topology I (3 cr.)**Point-set topology, including connectedness, compactness, separation properties, products, quotients, metrization, function spaces. Elementary homotopy theory including fundamental group and covering spaces. Introduction to homology theory with applications such as the Brouwer Fixed Point Theorem.
  - **MATH-M 522 Topology II (3 cr.)**Point-set topology, including connectedness, compactness, separation properties, products, quotients, metrization, function spaces. Elementary homotopy theory including fundamental group and covering spaces. Introduction to homology theory with applications such as the Brouwer Fixed Point Theorem.
  - **MATH-M 529 Introduction to Differential Topology (3 cr.)**P: M303, M413, or equivalent. Derivatives and tangents; Inverse Function Theorem; immersions and submersions; Sard's Theorem. Manifolds; imbedding manifolds. Applications: intersections and degrees (mod 2); Brouwer Fixed Point Theorem. Orientation of manifolds; Euler characteristic; Hopf Degree Theorem.
  - **MATH-M 531 Metric Geometry (3 cr.)**P: 413-414 Introduction to the geometric study of metric spaces. Topics include: length spaces, model geometries, notions of curvature, Hadamard-Cartan theorem, convexity, metric-measure spaces.
  - **MATH-M 533 Differential Geometry I (3 cr.)** Differentiable manifolds, multilinear algebra, and tensor bundles. Vector fields, connections, and general integrability theorems. Riemannian manifolds, curvatures, and topics from the calculus of variations.
  - **MATH-M 534 Differential Geometry II (3 cr.)**Differentiable manifolds, multilinear algebra, and tensor bundles. Vector fields, connections, and general integrability theorems. Riemannian manifolds, curvatures, and topics from the calculus of variations.
  - **MATH-M 540 Partial Differential Equations I (3 cr.)**P: M441-M442 or equivalent. Introduction to distributions, Sobolev spaces, and Fourier transforms; elliptic equations, Hilbert space theory, potential theory, maximum principle; parabolic equations and systems, characteristics, representations of solutions, energy methods; applications and examples.
  - **MATH-M 541 Partial Differential Equations II (3 cr.)**P: M441-M442 or equivalent. Introduction to distributions, Sobolev spaces, and Fourier transforms; elliptic equations, Hilbert space theory, potential theory, maximum principle; parabolic equations and systems, characteristics, representations of solutions, energy methods; applications and examples.
  - **MATH-M 542 Nonlinear Partial Differential Equations (3 cr.)**P: M441-M442 or equivalent. Introduction to an array of topics in linear and nonlinear PDE including elements of calculus of variations and applications to nonlinear elliptic PDE, systems of conservation laws, semi-group theory, reaction-diffusion equations, Schauder theory, Navier-Stokes equations, bifurcation theory.
  - **MATH-M 544 Ordinary Differential Equations I (3 cr.)**P: M413-M414 or consent of instructor. Existence, uniqueness, continuous dependence; linear systems, stability theory, Floquet theory; periodic solutions of nonlinear equations; Poincaré-Bendixson theory, direct stability methods; almost periodic motions; spectral theory of nonsingular and singular self-adjoint boundary-value problems; two-dimensional autonomous systems; the saddle-point property; linear systems with isolated singularities.
  - **MATH-M 545 Ordinary Differential Equations II (3 cr.)**P: M413-M414 or consent of instructor. Existence, uniqueness, continuous dependence; linear systems, stability theory, Floquet theory; periodic solutions of nonlinear equations; Poincaré-Bendixson theory, direct stability methods; almost periodic motions; spectral theory of nonsingular and singular self-adjoint boundary-value problems; two-dimensional autonomous systems; the saddle-point property; linear systems with isolated singularities.
  - **MATH-M 546 Control Theory (3 cr.)**Examples of control problems; optimal control of deterministic systems: linear and nonlinear. The maximal principle: stochastic control problems.

- **MATH-M 548 Mathematical Methods for Biology (3 cr.)**P: M414, M463. Deterministic growth models. Birth-death processes and stochastic models for growth. Mathematical theories for the spread of epidemics. Quantitative population genetics.
- **MATH-M 551 Markets and Multi-Period Asset Pricing (3 cr.)**P: M463, M345, or equivalent. The concepts of arbitrage and risk-neutral pricing are introduced within the context of dynamic models of stock prices, bond prices, and currency exchange rates. Specific models include multi-period binomial models, Markov processes, Brownian motion, and martingales.
- **MATH-M 553 Cryptography (3 cr.)**P: M301 or M303. \*\*\*Does not count toward the 500-level requirements. Covers encryption and decryption in secure codes. Topics include: cryptosystems and their cryptanalysis, Data Encryption Standard, differential cryptanalysis, Euclidean algorithm, Chinese remainder theorem, RSA cryptosystem, primality testing, factoring algorithms, ElGamal cryptosystem, discrete log problem, other public key cryptosystems, signature schemes, hash functions, key distribution, and key agreement. Credit not given for both M553 and M453.
- **MATH-M 555 Quantum Computing I (3 cr.)**\*\*\*Does not count toward the 500-level requirements. Covers the interdisciplinary field of quantum information science for graduate students in computer science, physics, mathematics, philosophy, and chemistry. Quantum information science is the study of storing, processing, and communicating information using quantum systems.
- **MATH-M 556 Quantum Computing II (3 cr.)**\*\*\*Does not count toward the 500-level requirements. Covers the interdisciplinary field of quantum information science for graduate students in computer science, physics, mathematics, philosophy, and chemistry. Quantum information science is the study of storing, processing, and communicating information using quantum systems.
- **MATH-M 557 Introduction to Dynamical Systems and Ergodic Theory (3 cr.)**Iteration of mappings, flows. Topological, smooth, measure-theoretic, and symbolic dynamics. Recurrence and chaos. Ergodic theory, spectral theory, notions of entropy. Low-dimensional phenomena; hyperbolicity; structural stability and rigidity. Application to number theory, data storage, Internet search and Ramsey theory.
- **MATH-M 558 Introduction to Dynamical Systems and Ergodic Theory (3 cr.)**Iteration of mappings, flows. Topological, smooth, measure-theoretic, and symbolic dynamics. Recurrence and chaos. Ergodic theory, spectral theory, notions of entropy. Low-dimensional phenomena; hyperbolicity; structural stability and rigidity. Application to number theory, data storage, Internet search and Ramsey theory.
- **MATH-M 560 Applied Stochastic Processes (3 cr.)**P: M343, M463, or consent of instructor. Simple random walk as approximation of Brownian motion. Discrete-time Markov chains. Continuous-time Markov chains; Poisson, compound Poisson, and birth-and-death chains; Kolmogorov's backward and forward equations; steady state. Diffusions as limits of birth-and-death processes. Examples drawn from diverse fields of application.
- **MATH-M 563 Theory of Probability I (3 cr.)**P: M463 and M512; or consent of instructor. Basic concepts of measure theory and integration, axiomatic foundations of probability theory, distribution functions and characteristic functions, infinitely divisible laws and the central limit problem, modes of convergence of sequences of random variables, ergodic theorems, Markov chains, and stochastic processes.
- **MATH-M 564 Theory of Probability II (3 cr.)**P: M463 and M512; or consent of instructor. Basic concepts of measure theory and integration, axiomatic foundations of probability theory, distribution functions and characteristic functions, infinitely divisible laws and the central limit problem, modes of convergence of sequences of random variables, ergodic theorems, Markov chains, and stochastic processes.
- **MATH-M 566 Mathematical Statistics I (3 cr.)**P: M466, M512; or consent of instructor. Modern statistical inference, including such topics as sufficient statistics with applications to similar tests and point estimates, unbiased and invariant tests, lower bounds for mean square errors of point estimates, interval estimation, linear hypothesis, analysis of variance, sequential analysis, decision functions, and nonparametric inference.
- **MATH-M 567 Mathematical Statistics II (3 cr.)**P: M466, M512; or consent of instructor. Modern statistical inference, including such topics as sufficient statistics with applications to similar tests and point estimates, unbiased and invariant tests, lower bounds for mean square errors of point estimates, interval estimation, linear hypothesis, analysis of variance, sequential analysis, decision functions, and nonparametric inference.
- **MATH-M 568 Time Series Analysis (3 cr.)**P: M466 or consent of instructor. Trends, linear filters, smoothing. Stationary processes, autocorrelations, partial autocorrelations. Autoregressive, moving average, and ARMA processes. Fitting of ARMA and related models. Forecasting. Seasonal time series. Spectral density of stationary processes. Periodograms and estimation of spectral density. Bivariate time series, cross-correlations, cross-spectrum. Other topics as time permits. Equivalent to STAT S650.
- **MATH-M 571 Analysis of Numerical Methods I (3 cr.)**P: M441-M442 and M413-M414. Solution of systems of linear equations, elimination and iterative methods, error analyses, eigenvalue problems; numerical methods for integral equations and ordinary differential equations; finite difference, finite element, and Galerkin methods for partial differential equations; stability of methods.
- **MATH-M 572 Analysis of Numerical Methods II (3 cr.)**P: M441-M442 and M413-M414. Solution of systems of linear equations, elimination and iterative methods, error analyses, eigenvalue problems; numerical methods for integral equations and ordinary differential equations; finite difference, finite element, and Galerkin methods for partial differential equations; stability of methods.



- **MATH-M 583 Set Theory (3 cr.)**P: M482 or M511 or M521. Zermelo-Fraenkel axioms for set theory, well-foundedness and well-orderings, induction and recursion, ordinals and cardinals, axiom of choice, cardinal exponentiation, generalized continuum hypothesis, infinite combinatorics and large cardinals. Martin's axiom, applications to analysis and topology.
- **MATH-M 584 Recursion Theory (3 cr.)**P: One of M482, M511, M521 or CSCI C452; or consent of instructor. Classes of recursive functions, models of computation, Church's thesis, normal forms, recursion theorem, recursively enumerable sets, reducibilities, lattice of r.e. sets, jump operator, priority arguments, degrees of unsolvability, and hierarchies.
- **MATH-M 590 Seminar (3 cr.)**
- **MATH-M 595 Seminar in the Teaching of College Mathematics I (1 cr.)**Methods of teaching undergraduate college mathematics. Does not count toward meeting any of the 500-level requirements toward an M.A. or Ph.D.
- **MATH-M 596 Seminar in the Teaching of College Mathematics II (1 cr.)**Methods of teaching undergraduate college mathematics. Does not count toward meeting any of the 500-level requirements toward an M.A. or Ph.D.
- **MATH-M 599 Colloquium (1 cr.)**Attendance at Department of Mathematics colloquia required. May not be used in fulfillment of the 36 credit hours of 500-, 600-, or 700-level coursework required for the Ph.D. Also not applicable to 30 credit hours for master's degree. May be repeated.
- **MATH-M 601 Algebraic Number Theory I (3 cr.)**P: M501-M502. Valuations, fields of algebraic functions, cohomology of groups, local and global class field theory.
- **MATH-M 602 Algebraic Number Theory II (3 cr.)**P: M501-M502. Valuations, fields of algebraic functions, cohomology of groups, local and global class field theory.
- **MATH-M 607 Group Representations I (3 cr.)**P: Consent of instructor. Review of abstract group theory. Representation theory of finite and infinite compact groups. Detailed study of selected classical groups. Lie groups, covering groups, Lie algebras, invariant measure and induced representations. May be taught in alternate years by members of the Departments of Mathematics and Physics; see PHYS P607.
- **MATH-M 608 Group Representations II (3 cr.)**P: Consent of instructor. Review of abstract group theory. Representation theory of finite and infinite compact groups. Detailed study of selected classical groups. Lie groups, covering groups, Lie algebras, invariant measure and induced representations. May be taught in alternate years by members of the Departments of Mathematics and Physics; see PHYS P607.
- **MATH-M 611 Functional Analysis I (3 cr.)**Fundamentals of the theory of vector spaces; Banach spaces; Hilbert space. Linear functionals and operators in such spaces, spectral resolution of operators. Functional equations: applications to fields of analysis, such as integration and measure, integral equations, ordinary and partial differential equations, ergodic theory. Nonlinear problems. Schauder-Leray fixed-point theorem and its applications to fundamental existence theorems of analysis.
- **MATH-M 612 Functional Analysis II (3 cr.)**Fundamentals of the theory of vector spaces; Banach spaces; Hilbert space. Linear functionals and operators in such spaces, spectral resolution of operators. Functional equations: applications to fields of analysis, such as integration and measure, integral equations, ordinary and partial differential equations, ergodic theory. Nonlinear problems. Schauder-Leray fixed-point theorem and its applications to fundamental existence theorems of analysis.
- **MATH-M 621 Algebraic Topology I (3 cr.)**Basic concepts of homological algebra, universal coefficient theorems for homology and cohomology, Künneth formula, duality in manifolds. Homotopy theory including Hurewicz and Whitehead theorems, classifying spaces, Postnikov systems, spectral sequences, homotopy groups of spheres. Offered every other year, alternating with M623-M624.
- **MATH-M 622 Algebraic Topology II (3 cr.)**Basic concepts of homological algebra, universal coefficient theorems for homology and cohomology, Künneth formula, duality in manifolds. Homotopy theory including Hurewicz and Whitehead theorems, classifying spaces, Postnikov systems, spectral sequences, homotopy groups of spheres. Offered every other year, alternating with M623-M624.
- **MATH-M 623 Geometric Topology I (3 cr.)**P: M522. Topics in geometric topology chosen from K-theory, simple homotopy theory, topology of manifolds, fiber bundles, knot theory, and related areas. May be taken more than once. Offered every other year, alternating with M621-M622.
- **MATH-M 624 Geometric Topology II (3 cr.)**P: M522. Topics in geometric topology chosen from K-theory, simple homotopy theory, topology of manifolds, fiber bundles, knot theory, and related areas. May be taken more than once. Offered every other year, alternating with M621-M622.
- **MATH-M 630 Algebraic Geometry (3 cr.)**P: M522. A study in the plane, based on homogeneous point and line coordinates; a study of algebraic curves and envelopes, including such topics as invariants, singularities, reducibility, genus, polar properties, Pascal and Brauer theorems, and Jacobian, Hessian, and Plücker formulas.
- **MATH-M 633 Algebraic Varieties (3 cr.)**Geometric and cohomological properties of algebraic varieties and schemes.
- **MATH-M 634 Algebraic Varieties II (3 cr.)**Geometric and cohomological properties of algebraic varieties and schemes.
- **MATH-M 635 Relativity I (3 cr.)**Mathematical foundations of the theory of relativity. Lorentz groups, Michelson-Morley experiment, aberration of stars, Fizeau experiment, kinematic effects, relativistic second law of Newton, relativistic kinetic energy, Maxwell equations, ponderomotive equations. Curvature tensor and its algebraic identities, Bianchi's identity, gravitation and

- geodesics. Schwarzschild solution, relativistic orbits, deflection of light.
- **MATH-M 636 Relativity II (3 cr.)**Mathematical foundations of the theory of relativity. Lorentz groups, Michelson-Morley experiment, aberration of stars, Fizeau experiment, kinematic effects, relativistic second law of Newton, relativistic kinetic energy, Maxwell equations, ponderomotive equations. Curvature tensor and its algebraic identities, Bianchi's identity, gravitation and geodesics. Schwarzschild solution, relativistic orbits, deflection of light.
  - **MATH-M 637 Theory of Gravitation I (3 cr.)**Introduction to the general theory of relativity, stress-energy tensor, parallel transport, geodesics, Einstein's equation, differential geometry, manifolds, general covariance, bending of light, perihelion advance. Modern cosmology: Robertson-Walker metric, equations of state, Friedmann equations, Hubble's law, redshift, cosmological constant, inflation, quintessence, cosmic microwave background, Big Bang nucleosynthesis, structure formation. May be taught in alternate years by members of the Department of Physics; see PHYS P637.
  - **MATH-M 638 Theory of Gravitation II (3 cr.)**Gravitation waves, Schwarzschild geometry and black holes, Kerr metric, Reissner-Nordstrom metric, extremal black holes, Penrose diagrams, Hawking radiation, Lie derivatives, isometries and Killing vectors, variational principle and the Palatini formalism, spinors in general relativity, vierbeins, gravitation as a gauge theory, quantum gravity. May be taught in alternate years by members of the Department of Physics; see PHYS P638.
  - **MATH-A 641 Elliptic Differential Equations (3 cr.)**P: M511, M513, M540, or consent of instructor. Green's identity, fundamental solutions, function theoretic methods, partition of unity, weak and strong derivatives, Sobolev inequalities, embedding theorems, Garding's inequality, Dirichlet problem, existence theory, regularity in the interior, regularity on the boundary, and selected topics.
  - **MATH-A 642 Evolution Equations (3 cr.)**P: M511, M513, M540, or consent of instructor. Hyperbolic equations and systems, parabolic equations, Cauchy problems in higher dimension, method of descent, fundamental solutions and their construction, strongly continuous semigroups, analytic semigroups, uniqueness theorems in Hilbert space, fractional powers of operators, analyticity of solutions, and selected topics.
  - **MATH-A 643 Integral Equations (3 cr.)**P: M511, M513, M540, or consent of instructor. Covers the Volterra-Fredholm theory of integral equations and the abstract Riesz theory of compact operators. Other topics include ideals of compact operators, Fredholm operators, convolution equations and their relationship to Toeplitz operators, Wiener-Hopf factorization.
  - **MATH-A 647 Mathematical Physics (3 cr.)**P: M541 or consent of instructor. Applications of the theory of normed linear spaces, distributions, unbounded operators in Hilbert space, and related topics to problems in mathematical physics. May be taught in alternate years by members of the Department of Physics; see PHYS P647.
  - **MATH-A 655 Mathematical Foundations of Quantum Mechanics (3 cr.)**P: Consent of instructor. Philosophical and mathematical analysis of the concepts: quantum observable, compatibility, quantum state, superposition principle, symmetry. Axiomatic construction of conventional quantum mechanics. May be taught in alternate years by members of the Department of Physics; see PHYS P655.
  - **MATH-A 656 Kinetic Theory and Statistical Mechanics I (3 cr.)**Introduction to the classical theory and modern developments. Historical development of kinetic-statistical theories; rigorous equilibrium statistics; kinetic gas dynamics according to Boltzmann equation; kinetic theories of transport processes in liquids. May be taught in alternate years by members of the Departments of Mathematics and Physics; see PHYS P656-P657.
  - **MATH-A 657 Kinetic Theory and Statistical Mechanics I (3 cr.)**Introduction to the classical theory and modern developments. Historical development of kinetic-statistical theories; rigorous equilibrium statistics; kinetic gas dynamics according to Boltzmann equation; kinetic theories of transport processes in liquids. May be taught in alternate years by members of the Departments of Mathematics and Physics; see PHYS P656-P657.
  - **MATH-A 658 Continuum Mechanics I (3 cr.)**P: Consent of instructor. Two-semester course dealing with mathematical foundations of continuum mechanics; content varies yearly; topics selected from elasticity, plasticity, or fluid mechanics and related areas.
  - **MATH-A 659 Continuum Mechanics II (3 cr.)**P: Consent of instructor. Two-semester course dealing with mathematical foundations of continuum mechanics; content varies yearly; topics selected from elasticity, plasticity, or fluid mechanics and related areas.
  - **MATH-M 663 Weak Convergence of Probability Measures and Applications (3 cr.)**P: M512, M564. Weak convergence of probability measures on metric spaces. Prohorov's theorem and tightness. Brownian motion. Donsker's invariance principle. Weak convergence on  $D[0,1]$ . Convergence of empirical distributions. Functional central limit theorems under dependence.
  - **MATH-M 664 Large Sample Theory of Statistics (3 cr.)**P: M563, M566. Asymptotic distributions of sample moments, sample quantiles, and U-statistics; methods of estimation: maximum likelihood estimates, method of moments, L-estimators, Bayes estimators; asymptotic efficiency; likelihood ratio tests, chi-square tests, asymptotic relative efficiencies of tests; weak convergence of the empirical distribution function to a Brownian bridge and application; selection of topics from the following: large deviations, second-order asymptotic efficiency, bootstrap rank tests.
  - **MATH-M 671 Numerical Treatment of Differential and Integral Equations I (3 cr.)**P: M540 or consent of instructor. Finite difference methods of ordinary and partial differential equations; relaxation methods;

discrete kernel functions; methods of Ritz, Galerkin, and Trefftz approximate methods for integral equations.

- **MATH-M 672 Numerical Treatment of Differential and Integral Equations II (3 cr.)**P: M540 or consent of instructor. Finite difference methods of ordinary and partial differential equations; relaxation methods; discrete kernel functions; methods of Ritz, Galerkin, and Trefftz approximate methods for integral equations.
- **MATH-M 680 Logic and Decidability (3 cr.)**P: M584 and M404; or consent of instructor. Effective syntax and semantics of propositional and first-order logics, theory of decidability and some decidable theories, theory of undecidability and implicit definability, Gödel's theorems on incompleteness and the unprovability of consistency.
- **MATH-M 682 Model Theory (3 cr.)**P: M583, M680, and M502; or consent of instructor. Elementary equivalence, completeness and model-completeness, interpolation, preservation and characterization theorems, elementary classes, types, saturated structures, introduction to categoricity and stability.
- **MATH-M 701 Selected Topics in Algebra I (3 cr.)**
- **MATH-M 702 Selected Topics in Algebra II (3 cr.)**
- **MATH-M 711 Selected Topics in Analysis I (3 cr.)**
- **MATH-M 712 Selected Topics in Analysis II (3 cr.)**
- **MATH-M 721 Selected Topics in Topology I (3 cr.)**
- **MATH-M 722 Selected Topics in Topology II (3 cr.)**
- **MATH-M 731 Selected Topics in Differential Geometry I (3 cr.)**
- **MATH-M 732 Selected Topics in Differential Geometry II (3 cr.)**
- **MATH-M 733 Selected Topics in Algebraic Geometry I (3 cr.)**
- **MATH-M 734 Selected Topics in Algebraic Geometry II (3 cr.)**
- **MATH-M 741 Selected Topics in Applied Mathematics I (3 cr.)**
- **MATH-M 742 Selected Topics in Applied Mathematics II (3 cr.)**
- **MATH-M 743 Selected Topics in Mathematical Physics I (3 cr.)**Content varies from year to year. May be taught in alternate years by members of the Department of Physics; see PHYS P743.
- **MATH-M 744 Selected Topics in Mathematical Physics II (3 cr.)**Content varies from year to year. May be taught in alternate years by members of the Department of Physics; see PHYS P743.
- **MATH-M 751 Selected Topics in Mechanics I (3 cr.)**
- **MATH-M 752 Selected Topics in Mechanics II (3 cr.)**
- **MATH-M 761 Selected Topics in Probability I (3 cr.)**
- **MATH-M 762 Selected Topics in Probability II (3 cr.)**
- **MATH-M 771 Selected Topics in Numerical Analysis I (3 cr.)**
- **MATH-M 772 Selected Topics in Numerical Analysis II (3 cr.)**

- **MATH-M 781 Selected Topics in Mathematical Logic (3 cr.)**
- **MATH-M 782 Selected Topics in Mathematical Logic (3 cr.)**
- **MATH-M 800 Mathematical Reading and Research (arr. cr.)\*\***These courses are eligible for a deferred grade.

## Media Arts and Sciences

### Media School

#### College of Arts and Sciences

School E-mail: mschgrad@indiana.edu

School URL: <http://mediaschool.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

Curriculum

Faculty Courses

### Degrees Offered

Master of Arts (M.A. in Media Arts & Sciences), Master of Science (M.S. in Media), Doctor of Philosophy (Ph.D. in Media Arts and Sciences), Joint Master of Arts or Master of Science and Doctor of Jurisprudence (jointly with the Maurer School of Law).

### Special Departmental Requirements

(See also general University Graduate School requirements.)

### Master of Arts Degree

The M.A. in Media Arts & Sciences is designed to train students for academic careers in media, communications, film studies and related fields. Graduates will be prepared to enter a Ph.D. program, teach at small colleges, or accept analytical and research positions in media and creative industries.

### Admission Requirements

1. Four year Bachelor's degree or international equivalent
2. Statement of purpose;
3. Three letters of recommendation;
4. An academic writing sample; and
5. Internet-based TOEFL score greater than 100 for international students.
6. A curriculum vita
7. At least a B (3.0) GPA average in the major over the last two years of an undergraduate program, or professional equivalency.

Applications from students who have not majored in communication at the bachelor's level are welcomed. If admitted, these students may be required to take supplementary courses.

### Grades

B (3.0) average or above. Any semester's work averaging less than B will result in the student's being placed on

academic probation. The school evaluates each student's progress toward the degree every year.

### Advisory Committee

By April 15<sup>t</sup> of their first year, each student will select an Advisor and nominate a three-member Advisory Committee. At least two members of the Advisory Committee must be from the Media School. Students who fail to select an Advisory Committee or construct a Program of Study before the start of Fall semester in the second year of their studies will be considered out of good academic standing.

### Degree Requirements

1. M503 Media Theories with a grade of B (3.0) or above;
2. Thesis (up to cr. 6 of M699 taken after an approved thesis proposal) including an oral defense administered by the student's Advisory Committee OR comprehensive examination (written and oral, administered by the student's Advisory Committee) ;
3. Program of Study listing all courses toward the degree, approved by the student's Advisory Committee;
4. No more than 3 credits of independent study (J804).
5. A total of 30 credit hours, with at least 21 credit hours must be taken within the Media School.

### Master of Science Degree

The M.S. in Media is designed to prepare students for professional careers in media design, production, and management.

### Admission Requirements

1. Four year Bachelor's degree or international equivalent.
2. At least a B(3.0) average in the major over the last two years of an undergraduate program, or professional equivalency;
3. Statement of purpose;
4. Three letters of recommendation;
5. An academic writing sample or creative portfolio; and
6. Internet based TOEFL score greater than 100 for international students.

Applications from students who have not majored in communication at the bachelor's level are welcomed. If admitted, these students may be required to take supplementary courses.

### Grades

B (3.0) average or above. Any semester's work averaging less than B will result in the student's being placed on academic probation. The school evaluates each student's progress toward the degree every year.

### Advisory Committee

By April 15<sup>t</sup> of their first year, each student will select a three-member Advisory Committee. At least two members of the Advisory Committee must be from the Media School. Students who fail to select an Advisory Committee or construct a Program of Study by the end of the second semester in the program will be considered as making inadequate progress toward the degree.

### Degree Requirements

A minimum of 30 credit hours, including

1. Core course(s) corresponding to a chosen concentration area, with a grade of B (3.0) or above:
  - Documentary/Nonfiction Production: T583 Introduction to Documentary Practice, T584 Documentary Filmmaking, T522 Managing the Creative Process, T532 Media Law OR C606 Media Criticism VT: Documentary Studies, 12 credit hours in the Production Practicum. (If C606 is not offered, one of the documentary studies electives may be substituted with approval of the student's advisory committee).
  - Management Concentration: T505 Media Organizations and two of the following: T502 Introduction to Research Methods in Telecommunications, T504 Introduction to Telecommunications Policy Studies, T522 Managing the Creative Process, T532 Media Law, T571 Cognitive and Emotional Psychology, T610 The Networked Society;
  - Journalism Concentration: J505 Intensive Reporting, Writing and Editing Workshop, J510 Media and Society, at least 9 credit hours in the Arnolt Center Practicum.
  - Data Journalism Concentration: J501 Public Affairs Reporting, J510 Media and Society, INFO I505 Social Media Informatics, INFO I590 Topics in Informatics: Data Science On-Ramp
  - Strategic Communication Concentration: J560 Principles of Strategic Communication, T511 Research Methods in Audience Analysis.
2. Program of Study listing all courses toward the degree, approved by the student's Advisory Committee;
3. At least 21 credit hours must be taken within the Media School, with no more than 3 credits of independent study (J804).
4. Thesis (up to cr. 6 of M699 taken after an approved thesis proposal) including an oral defense administered by the student's Advisory Committee OR comprehensive examination (written and oral, administered by the student's Advisory Committee) OR capstone project (up to cr. 6 of T540 taken after an approved project proposal) including an oral defense administered by the student's Advisory Committee

### Graduate Certificate in Data Journalism

#### Admissions requirements

See requirements for M.S. program.

#### Grades

Completion of the certificate will require a B (3.0) average or above. The school evaluates each student's progress toward the certificate each semester.

#### Advisor(s)

Certificate students do not require a committee, but will be required to work with one or two faculty members, who will help supervise their progress

### Degree Requirements

A minimum of 12 credit hours, which will be chosen in coordination between the participant and faculty.

Students will take four courses that are available online in the Media School or Luddy and which are approved by their advisor(s). The course load will be driven by participants' existing skills, tailored to meet professional aspirations and arranged so it could build towards a data journalism concentration in the Media School's M.S. program.

### **Doctor of Philosophy in Media Arts and Sciences Admissions Requirements**

1. Four year Bachelor's and two year Master's or comparable degree from a recognized institution, with a minimum 5 Master's GPA (or equivalent)
2. Statement of purpose
3. Three letters of recommendation
4. Internet-based TOEFL score greater than 100 for international students
5. A writing sample
6. A curriculum vitae

### **Grades**

B (3.0) average or above. Any semester's work averaging less than B will result in the student's being placed on academic probation. The school evaluates each student's progress toward the degree every year.

### **Advisory Committee**

By April 15 of their first year, each student will select an adviser and nominate an advisory committee, the latter consisting of two additional members from The Media School and one member from outside The Media School. Students who fail to file an approved Program of Study by Oct. 15 of their second year will be considered out of good academic standing.

### **Course Requirements**

A minimum of 90 credits hours, including:

1. The core consisting of Epistemologies of Media (M500 or C792), M503 Media Theories, and M555 Media Pedagogy with a grade of at least a B in each course;
2. M600 Media Arts and Sciences Colloquium for three semesters;
3. Six to 12 credits of methods/foreign language courses, as approved by the student's advisory committee;
4. Completion of a minor as required by the minor department;
5. No more than six credit hours in independent study (J804);
6. No more than 15 credit hours in the dissertation (M899);
7. A minimum of 24 credit hours must be taken within The Media School (M899 does not count toward these credits);
8. A program of study listing all courses toward the degree, approved by the student's committee.

### **Minor**

Consistent with University Graduate School policy, each student must have at least one minor subject. Course

work in the minor must be approved by the student's advisory committee and must meet the requirements of the minor department.

### **Research Skill Requirement**

Six to 12 credits of research skills, methods, or foreign language courses, as approved by the student's advisory committee.

### **Qualifying Examination**

Written and oral; may be taken twice only.

### **Final Examination**

Oral, primarily a defense of the dissertation

### **Joint Degree: Master of Arts or Master of Science in Media and Doctor of Jurisprudence in the Maurer School of Law**

To be eligible to receive the degrees of Doctor of Jurisprudence and Master of Arts or Master of Science in Media, which must be received simultaneously, a student must:

1. Complete 79 credit hours in the Maurer School of Law including all of the required course work;
2. Complete 27 credit hours in the Media School, including all of the required coursework;
3. Earn a cumulative grade point average of at least 2.3 on all work taken in the Maurer School of Law and at least 3.0 on all work taken in the Media School.

### **Ph.D. Minor in Media Arts and Sciences**

Doctoral students from other departments and schools may choose Media Arts and Sciences as an outside minor.

### **Requirements**

A minimum of 12 credit hours of coursework in The Media School at the 500 level or above, including at least one of the following courses: M503, T505, T522, J510, J560.

A grad average no lower than a B (3.0) in minor coursework. No more than six credit hours will be accepted by transfer of graduate credit from another university.

To arrange for the minor in Media Arts and Sciences, you must first have a Media School faculty member serve as the minor advisor. In consultation with the advisor, you will outline a course plan that best contributes to your goals and then file a copy with the Director of Graduate Studies.

### **Faculty**

Curriculum  
Faculty Courses

### **Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### **Dean**

Walter Gantz\*

### **Associate Dean**

Radhika Parameswaran\*



## Distinguished Professors

Annie Lang\*, Radhika Parameswaran\*

## Provost's Professor

Gregory Waller\*

## Professors

Edward Castronova\*, Barbara Cherry\*, Mike Conway\*, Walter Gantz\*, Maria Elizabeth Grabe\*, Raiford Guins\*, Joan Hawkins\*, Michael Martin\*, Robert Potter\*, Harmeet Sawhney\*, James Shanahan\*, Gregory Waller\*, Paul Wright, Sung Un Yang

## Associate Professors

Akinwumi Adesokan\*, Cara Caddoo\*, Galen Clavio\*, Michael Conway\*, Stephanie DeBoer\*, Anthony Fargo\*, Juila Fox\*, Terri Francis, Minjeong Kang, James Kelly\*, Gerry Lanosga\*, Jae Kook Lee\*, Julien Mailland, Lesa Hatley Major\*, Joshua Malitsky\*, Nicole Martins\*, Bryant Paul\*, Ryan Powell\*, Andrew Weaver\*

## Assistant Professors

Nicholas Browning, Cara Caddoo, Suzannah Evans Comfort, Nathaniel Geiger, Mike Gruszczynski, Minjeong Kang, Danielle Kilgo, Jennifer Midberry, Jason Peifer, Rachel Plotnick, Ryan Powell, Lauren Smith, Esi Thompson

## Professors of Practice

Kelley French, Thomas French, Kathleen Johnston, Elaine Monaghan, Mike Sellers

## Senior Lecturers

Norbert Herber\*, Bob Affe, Nancy Comiskey, Susan Kelly, Steve Krahnke, James Kraus, Bonnie Layton, Steve Layton, Matt Pierce, Anne Ryder, Susanne Schwibs, Teresa White, Craig Wood

## Director of Graduate Studies

Stephanie DeBoer\*, Franklin Hall 230F

## Courses

Curriculum

Faculty Courses

- **MSCH-M500 EPISTEMOLOGIES OF MEDIA** (3 cr.) This Media School core course provides graduate students with a selection of key concepts that have and continue to shape the study of media across multiple disciplines and fields of study. These key concepts are offered as a primer as students begin their program of study.
- **MSCH-J 501 PUBLIC AFFAIRS REPORTING** (3 cr.) Lectures and discussion of problems in covering public affairs issues at the national, state, and local levels. Emphasis on reporting government, social welfare agencies, elections, political parties, special interest groups, and other areas of general public interest.
- **MSCH-T 501 PHIL OF INQUIRY IN TELECOMM** (3 cr.) Entry-level comparative study of the origin and development of dominant paradigms applied to media by researchers and policy makers

- **MSCH-J 502 DATA ANALYSIS FOR JOURNALISTS** (3 cr.) Introduction to social science principles of measurement, sampling, statistical inferences and logic of research design in collection, analysis and interpretation of information used in journalism and mass media.
- **MSCH-M502 MEDIA RESEARCH** (3 cr.) Introduction to quantitative and qualitative research methodologies used in media.
- **MSCH-C503 INTRO MEDIA THRY & AESTHETICS** (3 cr.) Study of classical and contemporary theoretical texts.
- **MSCH-M503 MEDIA THEORIES** (3 cr.) Introduces students to the wide range of social scientific and humanistic theories which guide research in media.
- **MSCH-T504 INTRO TO TELECOMM POLICY STDS** (3 cr.) Introduction to the graduate level study of telecommunications law and policy and its intersection with economics and technology. Fundamental principles and theories of telecommunications law, policy, and policy-making. Methodological approaches.
- **MSCH-J505 INTNSVE REPRT WRT & EDT WRKSHP** (3-6 cr.) This course teaches graduate students reporting and writing in a fast-paced environment. Students will develop skills in news gathering, news writing, news judgement, ethics, headlines, verification and self-editing.
- **MSCH-T505 MEDIA ORGANIZATIONS** (3 cr.) Introduces students to the production, financing, marketing and management of media from an organizational perspective. The goal is to prepare students to work in a changing media environment.
- **MSCH-C506 METHODS OF MEDIA RESEARCH** (3 cr.) Introduction to research methods used in critical studies of media and culture.
- **MSCH-J510 MEDIA AND SOCIETY SEMINAR** (3 cr.) Probing examination of structure and functions of mass media, stressing interaction among communication agencies and other social institutions. Critical analysis of media performance and policies in light of current economic, political, social, and intellectual thought. Comparative case studies of U.S. media with other national press systems.
- **MSCH-T510 RES MTHD IN MESSAGE ANALYSIS** (3 cr.) Methods of analyzing the content of mediated messages. Applications of content analysis techniques to research projects involving new or traditional media.
- **MSCH-T511 RES MTHD IN AUDIENCE ANALYSIS** (3 cr.) Analysis of audience characteristics and behaviors. Emphasizes methods associated with the assessment of and audiences for, the electronic media.
- **MSCH-T512 COMMUNICATION AND POLITICS** (3 cr.) Social scientific theories of political message effects and normative models of media and democracy. Analysis of political advertising,

campaign communication, civic participation, and the role of new media in politics.

- MSCH-J514 INTERNATIONAL COMMUNICATION (3 cr.) Comparative analysis of international media systems.
- MSCH-J516 DIGITAL JOURNALISM PRACTICUM (6 cr.) The Digital Journalism Practicum is the cornerstone experience of the Digital Journalism track of our Masters of Arts in Journalism. This intensive six credit hour course is designed to provide you with a professional newsroom immersion experience as well as the contextual and theoretical foundation of journalism and the most important issues facing the profession now and in the future.
- MSCH-J517 ADV DIG JOURNALISM PRACTICUM (4 cr.) Building upon the professional experience and theoretical explorations of J516, the Advanced Digital Journalism Practicum is designed to provide students with an advanced professional newsroom immersion experience.
- MSCH-J518 INTERNATIONAL MEDIA EXPERIENCES (4 cr.) Topic course focused on communication systems in various countries. Includes international study tour during Spring Break, after the end of Spring term, or during Summer term. Countries visited will change based on topic.
- MSCH-J520 SEM IN VISUAL COMMUNICATION (3 cr.) Integration of advanced visual communication skills, including photography, writing and editing. Individual projects in packaging news and public affairs information. Emphasis on experimentation with message forms outside constraints of the traditional news media.
- MSCH-T521 TELECOMMUNICATIONS MANAGEMENT (3 cr.) Theories of personnel and systems management applied to the technology-based consumer media of broadcasting, cable, voice and network access providers. Considers broad issues of programming, infrastructure, finance, competition, corporate and industry structure, budget and regulations.
- MSCH-T522 MANAGING THE CREATIVE PROCESS (3 cr.) Examination of the business side of video production with emphasis on the role of the producer and/or production manager, including production team organization, schedules, budgets, contracts, markets and intellectual property.
- MSCH-J525 COLLOQ IN SCHOLASTIC JOURNALISM (1-3 cr.) Examination of problems in teaching journalism and supervising school publications. Topics may include impact on scholastic journalism of changes in educational philosophy, law, financial support, and technology.
- MSCH-J528 PUBLIC RELATIONS MANAGEMENT (3 cr.) Designed to enable students to manage a public relations department. Theories and principles relevant to public relations practiced in agency, corporate and not-for-profit organizations will be covered. This will include developing goals

and objectives, working with clients, developing budgets, and research methods.

- MSCH-J529 PUBLIC RELATIONS CAMPAIGNS (3 cr.) Designed to provide students with the opportunity to develop and execute a PR campaign for a local not-for-profit organization. Students will be exposed to relevant PR theory and in-depth case study analysis.
- MSCH-T529 COMP STDS IN TELECOMM POLICY (3 cr.) Comparison of telecommunications policy and policymaking in the U.S. with the policies and policy systems of other nations and of international and transnational organizations.
- MSCH-J530 ISS IN NEW COMMUNICATION TECH (3 cr.) Seminar on the role of emerging media technologies in national and international contexts.
- MSCH-T530 LEGAL ENVIRONMENT OF TELECOMM (3 cr.) Analysis of laws and policies affecting the telecommunications industry and its consumers. Regulation of broadcasting, cable television, telephony, and the Internet. Introduction to First Amendment aspects of telecommunications and to antitrust and intellectual property law.
- MSCH-T532 ECONOMICS OF MEDIA INDUSTRIES (3 cr.) Application of economic principles to policy and strategy issues in the print, online, broadcasting, multi-channel, home video, and motion picture industries.
- MSCH-T535 ECONOMICS OF INFORMATION (3 cr.) The production, distribution, and pricing of information products and services; intellectual property and new technologies; information networks and compatibility. Policy and strategy applications.
- MSCH-T540 SPEC PROJ IN TELECOMMUNICATIONS (3 cr.) Individual readings or production projects in telecommunications.
- MSCH-J551 SEMINAR (3 cr.) In-depth study of public affairs aspects of the law. Lectures by guest experts and independent study on timely topics pertaining to the courts, the legal profession, and law enforcement agencies - particularly as they relate to the social-political-economic order.
- MSCH-T551 COMMUNICATION, TECH & SOCIETY (3 cr.) Research seminar to consider the impact of new technologies on society and how the development and structure of information and communication technologies have been influenced by society. Theories of technology at the social level of analysis.
- MSCH-C552 MEDIA INST & THE PROD OF CULT (3 cr.) This class will introduce students to critical cultural studies of the media industries. Combining cultural studies, political economy, and studies of creative industries, we will examine the structures of media industries and the interplay of production cultures, individual agency, and structural limitations in the development of cultural products.
- MSCH-J552 SEMINAR (3 cr.) Principles of literary, theater, art, dance, and music reporting and

- criticism. Emphasis on the preparation of articles for publication
- **MSCH-T552 COGNITIVE APPROACHES TO MEDIA (3 cr.)** Examines the information processing of mediated messages and theories underlying memory, attention, and cognition. Advanced analysis of cognitive psychology and emotion theory as they apply to the study of media.
  - **MSCH-J554 SCIENCE WRITING (3 cr.)** Exploration of the challenges and opportunities associated with writing about science for non-scientists. Reading and discussion of articles and texts about communicating science to non-scientists, and practical exercises in reporting and writing.
  - **MSCH-M555 MEDIA PEDAGOGY (3 cr.)** Exploration of the theory and practice of college pedagogy. Specific attention to skills required for teaching mass communications. Includes development of a new course syllabus and teaching portfolio.
  - **MSCH-C560 MOTION PICTURE PRODUCTION (3-4 cr.)** This class is a hands-on introduction to the technical and aesthetic basics of making 16mm silent films. Students learn how to design, direct, light, shoot, and edit several short films working individually as well as in groups.
  - **MSCH-J560 TOPICS COLLOQUIUM (3 cr.)** Topical seminar dealing with changing subjects and material from semester to semester.
  - **MSCH-T560 BUS STRAT OF COMMUNICATNS FRMS (3 cr.)** Case studies in marketing and competitive strategies of media and telecommunications firms. Effects of technological change on industry structure and strategy.
  - **MSCH-C561 INTERMED MOTION PICTURE PROD (4 cr.)** This class introduces students to the making of 16mm sound films, including the recording and editing of sync sound.
  - **MSCH-C562 THE SCREENPLAY (3 cr.)** This course examines the structure of film screenplays and analyzes cinematic narrative strategies.
  - **MSCH-J563 COMPUTERIZED PUBLICATN DES I (3 cr.)** This publishing design course incorporates typesetting, electronic photo editing, graphics, and page design. Students are instructed in design theory, computer publishing skills, and creative problem solving.
  - **MSCH-J565 COMPUTERIZED PUBLICATN DES II (3 cr.)** This advanced publishing design course builds on Computerized Publication Design I and incorporates advanced work in color, type design, computer illustration, creative problem solving, and an introduction to print and web design.
  - **MSCH-J570 THEORY & RSRCH: INDIV LEVEL (3 cr.)** Introduction to the theory and research relevant to mass media studies at the individual level of analysis.
  - **MSCH-J571 MEDIA THEORY (3 cr.)** Introduction to theoretical orientations and research findings at the macro-social level of analysis.
  - **MSCH-T571 APPL COGNITIVE & EMOTIONAL PSY (3 cr.)** Introduces students to basic theories in cognitive and emotional psychology and focuses on how these theories could be applied to the design of immersive mediated environments.
  - **MSCH-J572 THE PRESS AND THE CONSTITUTION (3 cr.)** Seminar on specialized topics concerning the rights and obligations of mass media under the Bill of Rights. Research and discussion on developing law of privacy, access, and other constitutional problems.
  - **MSCH-J573 ETHNOGRAPHIC REPORT&WRIT JOUR (3 cr.)** This skills course explores the ethnographic, community-based approach to magazine journalism. Student will gain an understanding of how communities invest themselves, and how to report from this perspective.
  - **MSCH-J574 GENDER AND MEDIA (3 cr.)** This course exposes students to work in the broad interdisciplinary arena of gender and media. It will address the complex ways gender conceptions structure the cultural and economic landscape of media, including newspaper, television, magazines, advertising and photography.
  - **MSCH-J576 MGMT OF SCHOOL PUBLICATIONS (1-3 cr.)** This course will focus on high school press advising and management. It examines faculty, administration, and staff relations; management techniques; staff and editorial policies; legal and ethical responsibilities; and trends in the high school press.
  - **MSCH-T580 INTERACT STRYTLING/CMPTR GAMES (3 cr.)** Students work in teams to develop interactive stories and games using graphics, animation, sound, and text.
  - **MSCH-T583 TEACHING ELECTRONIC MEDIA PROD (3 cr.)** Graduate students review and refine basic production skills in preparation for teaching positions. Basic media production concepts, techniques, and hands-on training. Prior understanding of the production process is expected.
  - **MSCH-T585 INTERACTIVITY AND NEW MEDIA (3 cr.)** Theoretical and applied perspectives on interactive communication. Surveys the literature of interactivity and new media, examining relevant concepts such as Para social interaction, entertainment education, and remediation. Social and psychological consequences of interactivity.
  - **MSCH-C592 MEDIA GENRES (3 cr.)** Analysis and critique of cinema and film according to form, content, or technique. Topic varies: analysis of typical genres, such as westerns, situation comedies, documentaries, etc. Problems of generic description or definition: themes, conventions, iconography peculiar to given genres.

- MSCH-C593 HIST OF EURO & AMERICAN FILM
- MSCH-C594 MEDIA HISTORY (3 cr.) Media historiography, topics in national media history, national and international movements and trends.
- MSCH-C596 NATIONAL CINEMAS (3 cr.) Topics varies: historical survey of major national cinemas. Topics may include Brazilian cinema, French national cinema, German film culture, Italian cinema, Indian cinema, and others.
- MSCH-J600 QUANTITATIVE RESEARCH METHODS (3 cr.) Advanced behavioral methods in the analysis of mass communication data. Practice in analyzing data with computerized statistical programs.
- MSCH-M600 MEDIA ARTS AND SCIENCES COLLOQUIUM (1 cr.) Introduction to current media research through the work of school members and visiting scholars.
- MSCH-T601 TOP SEM IN TELECOM TECH & POL (1-3 cr.) Topics vary with the instructor and year. Consult Schedule of Classes for current information on content. May be repeated for credit with different topics and instructors.
- MSCH-T602 TOP SEM TEL PROCESSES/EFFECTS (3 cr.) Topics vary with the instructor and year. Consult Schedule of Classes for current information on content.
- MSCH-T603 TOPICAL SEM IN TELECOMM MGMT (1-3 cr.) Topics vary with the instructor and year. Consult Schedule of Classes for current information on content.
- MSCH-T604 TOPICAL SEM IN MEDIA & SOCIETY (1-3 cr.) Topics vary with the instructor and year. Consult Schedule of Classes for current information on content.
- MSCH-C606 MEDIA CRITICISM (3 cr.) Study of the main schools and methods of media criticism.
- MSCH-C608 IMAGES&CRITIQUE IN PUBL CULTURE (3 cr.) This course examines and assesses contemporary critical thought about visual and non-visual images, especially their role in politics. Pursuing various strategies for the ideology critique of images, the course explores thinking critically through images. It studies different types of images through a variety of theoretical approaches and thematic questions.
- MSCH-T610 THE NETWORKED SOCIETY (3 cr.) Analysis of the social, economic, and cultural forces that have set in motion the rise of the networked society. The conceptualization and creation of large-scale networks; new modes of organization.
- MSCH-J614 GLOBALIZTN, MEDIA, &SOCL CHANGE (3 cr.) Study of the structure and roles of the mass media in national development and the application of communication theory and technology to the problems of development and social change, through the lense of globalization of economy.
- MSCH-C620 MEDIA, POLITICS & POWER (3 cr.) Examination of media institutions (including new media) through various schools of critical thought.
- MSCH-T635 COMPARATIVE TELECOMM POLICY (3 cr.) Comparison of telecommunications policy and policymaking in the U.S. with the policies and policy systems of other nations and of international and transnational organizations.
- MSCH-C636 READING THE TEXT (3 cr.) This seminar hones students' skills of close reading, explication and commentary, textual analysis and interpretation, in relation to one or two books central to the academic study of communication and culture. The books studied will be determined in each iteration of the seminar.
- MSCH-C638 EXPERIMENTS WITH FILM CAMERA (4 cr.) This course is designed to explore techniques and concepts of experimental filmmaking. It builds on the foundations of other production classes, and assumes that you have a solid grounding in basic cinematography and visual storytelling, as well as in the fundamentals of digital editing.
- MSCH-T641 CHILDREN AND MEDIA (3 cr.) Detailed examination of theoretical orientations and research specifically focused on children and media.
- MSCH-J650 HIST & PHILOSOPHY OF THE MEDIA (3 cr.) Lectures and discussion on the origins, the historical growth, and the philosophical roots of the communication media, with particular emphasis on the relationship between the media and political, economic, social, and cultural trends in the United States.
- MSCH-T650 TELECOMM & THE CONSTITUTION (3 cr.) Impact of the constitution of the U.S. on telecommunications law and policy, the telecommunications industries, and the public. Emphasis is on the First Amendment. Analysis of the Supreme Court as a telecommunications policy-making institution.
- MSCH-J651 QUALITATIVE RESEARCH METHODS (3 cr.) Seminar on qualitative, historical, and legal research methods for mass communication research.
- MSCH-C652 GLOBALIZATION OF MEDIA (3 cr.) Explores media institutions, practices, and texts across national borders. May examine particular issues such as globalization of media, transnational implications of media texts, transnational data flows, and media and foreign policy.
- MSCH-J563 THE MEDIA IN THE 20TH CENTURY (3 cr.) This publishing design course incorporates typesetting, electronic photo editing, graphics, and page design. Students are instructed in design theory, computer publishing skills, and creative problem solving.
- MSCH-J655 ETHICS AND JOURNALISM (3 cr.) Exploration of the role of ethics in journalism.

Using literature which examines ethics in the context of journalism practice, the course will analyze ways journalists attempt to deny or limit the role of ethical values. Special attention to objectivity, freedom, and casuistry.

- **MSCH-C660 ADVANCED FILM PRODUCTION** (4 cr.) Designed for students who have taken basic production classes and who want to embark on a more ambitious film or video project. Each student will produce one project from script to screen, and assist other students on their projects. Course will address creative, technical, and production management questions.
- **MSCH-J660 TOPICS COLLOQUIUM** (3 cr.) Topical seminar dealing with changing subjects and material from semester to semester.
- **MSCH-C662 MEDIA AUDIENCES** (3 cr.) This course studies audiences in the context of film, television, new media, and other media forms. Topic varies, but may include a focus on theories of spectatorship, methodological approaches to audiences, historical reception studies, ethnographic and/or empirical audience studies, global of transnational audiences, performance theory, fan cultures, and subcultures.
- **MSCH-J672 TOPICS IN COMMUNICATION LAW** (3 cr.) Independent research and analysis of selected problems in communication law.
- **MSCH-J673 GOVERNMENT & MASS MEDIA** (3 cr.) Seminar on the relationship between politicians and journalists, the nature of news media coverage of politics, and the effects of news coverage on the public and policy.
- **MSCH-C691 AUTHORSHIP IN MEDIA** (3 cr.) Topic varies: in-depth analysis of individuals in the media who become known as "authors."
- **MSCH-C792 ADV SEMINAR IN MEDIA THEORY** (3 cr.) Topic varies: advanced study in media history and theory; major movements and historical periods and their relationship to the intellectual and cultural climate of the time; studies of technology and modes of production; advanced work in genre/auteur studies; close reading of media theories; new developments in theory and criticism.
- **MSCH-C793 SEMINAR IN MEDIA** (3 cr.) Topics in media studies

## Medical Sciences

### School of Medicine

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Program Information

The Medical Sciences program of the School of Medicine on the Bloomington campus offers work leading to the M.S. and Ph.D. degrees.

Information for the Doctor of Medicine program is provided in the School of Medicine Bulletin.

### Anatomy Degrees Offered

Masters in Anatomy (Students are not currently being admitted to this program.)

Education track in Anatomy Doctor of Philosophy

### Special Program Requirements

(See also general University Graduate School requirements.)

### Admission Requirements

Applicants should have a bachelor's degree in the sciences or a substantial knowledge base in these disciplines. The Graduate Record Examination (GRE) General Test is recommended, but not required. The Test of English as a Foreign Language (TOEFL) is required of international applicants.

### Ph.D. Minor in Anatomy Education (12 cr.)

Open to PhD students outside the department. A total of 12 credit hours must be completed for the minor

All students pursuing this minor must take one of the following courses:

ANAT A620 Human Structure (9 cr.)

or

ANAT A515 Basic Human Anatomy for Educators (5 cr.)

The remaining credit hours from the following list:

MSCI M509 Scientific Communication (1 cr.)

MSCI M620 Pedagogical Methods in Health Sciences (3 cr.)

MSCI M660 Neuroscience and Behavior (6 cr.)

ANAT A530 Special Topics (1-2 cr.)<sup>1</sup>

ANAT A561 History of Anatomy (2 cr.)

ANAT A580 Human Anatomy for Medical Imaging Evaluation (4 cr.)

ANAT A850 Topical Seminar in Anatomy (1 cr.)<sup>2</sup>

PHSL P515 Basic Human Physiology for Educators (5 cr.)

1. A530 may be used for a maximum of 2 credit hours for the minor

2. A850 may be used for a maximum of 1 credit hours for the minor

### Education track in Anatomy Doctor of Philosophy Degree

**Education Track in Anatomy PhD contact:** Jennifer Barron, Admissions Services Coordinator  
(jebarron@indiana.edu)

### Course Requirements

A total of 90 credit hours, including courses in the following areas:

- **Biomedical Core (27-29 cr):** Rigorous training in the major anatomical disciplines of gross anatomy, histology, neuroscience and cell biology; supervised and mentored teaching experiences with undergraduate students, medical students and graduate students.
  - ANAT A620 Human Structure (9)



- MSCI M660 Neuroscience and Behavior (6) – or – NEUS N500 Neural Science 1 (3) and NEUS N501 Neural Science 2 (3)
- PHSL P640 Fundamentals of Health and Disease (6) -or- PSHL F503 Human Physiology (5) -or- BIOL P451 Integrative Human Physiology (4) –or- PHSL P515 Basic Human Physiology for Educators (5)
- ANAT A850 Seminar (1); required yearly, which would sum to 4 credit hours assuming a 4-year degree completion time; this seminar series focuses on educational topics rather than bench research.
- ANAT A878 Anatomy Teaching Practicum (2); (repeated for 4 hours total) Supervised teaching in an upper-level undergraduate or graduate/medical anatomy-related course offered at IUSM-Bloomington. Teaching may involve being instructor of record, lecturing, and/or lab instruction.
- Education Research Methods Minor (18 cr): Fundamentals of pedagogy and assessment, including educational research and scholarship. This is an individualized minor which must receive approval from the IU Graduate School prior to scheduling your defense.
  - MSCI M620 Pedagogical Methods in the Health Sciences (3)  
OR SHRS W672 College Teaching Methodologies (3)
  - EDUC J500 Instruction in the Context of Curriculum (3)  
OR EDUC C750 Curriculum in Higher Education (3)
  - EDUC P540 Learning and Cognition in Education (3)
  - EDUC Y611 Qualitative Inquiry in Education (3)
  - EDUC Y521 Methodological Approaches to Educational Inquiry (3) (PREFERRED)  
OR EDUC Y520 Strategies for Educational Inquiry (3)  
In special circumstances, either EDUC Y510 Action Research (3) or EDUC C750 Scholarship of Teaching and Learning (3) may substitute for Y521 or Y520 with permission of the student's advisory committee.
  - And ONE of these courses: EDUC Y525 Survey Research (3) OR EDUC Y603 Statistical Design of Educational Research (3) OR EDUC C750 Topical Seminar (3) OR another education course if approved by the student's advisory committee.
- (8 cr.): Statistical tools needed to properly design and evaluate educational research projects
  - EDUC Y502 Intermediate Statistics Applied to Education (3); requires concurrent registration with EDUC Y500 Computer Lab for Educational Statistics (1) (prerequisite: EDUC Y520 Strategies for Educational Inquiry or a course in basic statistics)
  - EDUC Y604 Multivariate Analysis in Educational Research (3); requires concurrent

registration with EDUC Y500 Computer Lab for Educational Statistics (1)

- Electives and Research Credits (35-37 cr): Electives to be selected in consultation with advisor. Students are encouraged to take one or more advanced courses in the biomedical sciences, education or statistics. Electives and research credits include (but are not limited to) the following:
  - ANAT A530 Special Topics (cr. arr.), a supervised readings course with a faculty mentor (may be repeated for credit)
  - ANAT A800 Dissertation Research (cr. arr.), sufficient to complete the 90 credit hour degree requirement
  - PHSL P537 Topics in Clinical Physiology (3), may be taken up to two times for credit.

### Qualifying Examination

Written and oral, designed to test student's knowledge in anatomy and/or medical education research and to defend the dissertation proposal. Examination in the minor area may be required. Student must complete and distribute their dissertation proposal at least 30 days prior to the written qualifying exams.

### Final Examination

Oral defense of dissertation.

### Cell, Molecular, and Cancer Biology

Cell, Molecular, and Cancer Biology Departmental  
Email: [CMCB@indiana.edu](mailto:CMCB@indiana.edu)

### Degrees Offered

Master of Science and Doctor of Philosophy

### Special Program Requirements

(See also general University Graduate School requirements.)

### Admission Requirements

Applicants should have a bachelor's degree in the sciences or a substantial knowledge base in these disciplines. The Test of English as a Foreign Language (TOEFL) is required of international applicants.

### Master of Science Degree in Cell, Molecular, and Cancer Biology Course Requirements

A total of 36 credits generally including one semester of Biochemistry (BIOT-540), Genetics and Bioinformatics (BIOL-L585), Research Methods (MSCI-M510), Critical Analysis of Scientific Literature (BIOL-L523), Molecular Biology of Cancer (MSCI-M580), and Basics of Scientific Communication (MSCI-M509) in the first year and Precision Medicine of Cancer (MSCI-M508) in the second year. This coursework will also include 6 semesters of Seminar in Cancer Biology (MSCI-M550).

### Thesis

Required. The remaining hours to reach a total of 36 credits will consist of research towards the thesis. This research may be either laboratory research or non-laboratory research in a related field.

## **Doctor of Philosophy Degree in Cell, Molecular, and Cancer Biology**

### **Course Requirements**

A total of 90 credit hours, generally including one semester of Biochemistry (BIOT-T540), Genetics and Bioinformatics (BIOL-L585), Research Methods (MSCI-510), Critical Analysis of Scientific Literature (BIOL-L523), Molecular Biology of Cancer (MSCI-M580), and Basics of Scientific Communication (MSCI-M509) in the first year and Precision Medicine of Cancer (MSCI-M508) and Grant Writing (MSCI-M512) in the second year. This coursework will also include 6 semesters of Seminar in Cancer Biology (MSCI-M550) taken during the first three years.

### **Minor**

All students must complete a minor in any area related to cell, molecular and cancer biology. Acceptable topics include genetics, biochemistry, bioinformatics, quantitative and chemical biology, or microbiology. Minor courses are subject to approval by the student's advisory/dissertation committee members.

### **Qualifying Examination**

Written and oral, designed to test student's knowledge in cell, molecular, and cancer biology. Examination in the minor area may be required.

### **Dissertation**

The remaining hours to reach a total of 90 credits will consist of research towards the dissertation.

### **Ph.D. Minor in Cell, Molecular, and Cancer Biology**

Students outside the department wishing to obtain a minor in Cell, Molecular, and Cancer Biology are must complete a minimum of 6 credit hours selected from the following courses:

- MSCI-M 510 Research Methods (2 cr.)
- MSCI-M 580 Molecular Biology of Cancer (3 cr.)
- MSCI-M 509 Basics of Scientific Communication (1 cr.)
- MSCI-M 508 Precision Medicine of Cancer (2 cr.)
- MSCI-M 550 Seminar in Cancer Biology (1 cr.)

### **Pharmacology**

Students are not currently being admitted to this program. See also the Department of Pharmacology and Toxicology, Indianapolis.

### **Degrees Offered**

Master of Science and Doctor of Philosophy

### **Special Program Requirements**

(See also general University Graduate School requirements.)

### **Admission Requirements**

Applicants should have a bachelor's degree in the sciences or a substantial knowledge base in these disciplines. The Graduate Record Examination General Test is required. The Test of English as a Foreign Language (TOEFL) is required of international applicants.

## **Master of Science Degree in Pharmacology**

### **Course Requirements**

A total of 30 credit hours, all of which must be taken in the program. At least 20 credit hours must be in courses other than research.

### **Thesis**

Required.

### **Other Provision**

One year of supervised teaching experience is encouraged.

## **Doctor of Philosophy Degree in Pharmacology**

### **Course Requirements**

A total of 90 credit hours, including 40 credit hours in the program and dissertation.

### **Minor**

Required.

### **Advisory Committee**

To be composed of research advisor, the pharmacology faculty, and an individual from the minor discipline.

### **Grades**

B (3.0) average required.

### **Qualifying Examination**

Consists of two parts: (1) comprehensive written examination, and (2) written research proposal with oral presentation to the advisory committee.

### **Final Examination**

Oral defense of dissertation.

### **Physiology**

Students are not currently being admitted to this program. See also the Department of Physiology and Biophysics, Indianapolis.

### **Degrees Offered**

Master of Science and Doctor of Philosophy

### **Special Program Requirements**

(See also general University Graduate School requirements.)

### **Admission Requirements**

Applicants should have a bachelor's degree in the sciences or a substantial knowledge base in these disciplines. The Graduate Record Examination General Test is required. The Test of English as a Foreign Language (TOEFL) is required of international applicants.

Master of Science Degree in Physiology

### **Course Requirements**

A total of 30 credit hours, including 12 credit hours in physiology. At least 20 credit hours must be in courses other than research.

### **Thesis**

Required.

### **Doctor of Philosophy Degree in Physiology Course Requirements**

A total of 90 credit hours, including dissertation. Other course requirements will be determined by the student's advisory or research committee.

### **Foreign Language/Research Skill Requirement**

Students must demonstrate proficiency in one of the following areas, as determined by the student's advisory committee: a foreign language, statistics, or computer skills.

### **Qualifying Examination**

Written and oral.

### **Final Examination**

Oral defense of dissertation.

### **Other Provision**

One year of supervised teaching required.

### **Ph.D. Minor in Physiology**

Students outside the department desiring to obtain a minor in physiology are required to complete a minimum of 9 credit hours in physiology courses other than research.

### **Faculty**

#### **Associate Dean and Director**

Katherine Hiller, MD

#### **Assistant Directors**

Claire E. Walczak, PhD\*, Valerie D. O'Loughlin, PhD\*, Sarah Tieman, MD, and Charles Rudick, PhD

#### **Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### **Professors**

David L. Daleke\* (Biochemistry and Molecular Biology), Bruce J. Martin\* (Anatomy, Cell Biology & Physiology), Kenneth Nephew\* (Anatomy, Cell Biology & Physiology), Valerie D. O'Loughlin\* (Anatomy, Cell Biology & Physiology), Claire E. Walczak\* (Biochemistry and Molecular Biology)

#### **Associate Professors**

John G. Foley\* (Anatomy, Cell Biology & Physiology), Wayne Forrester\* (Medical and Molecular Genetics), Peter C. Hollenhorst\* (Biochemistry and Molecular Biology), Heather A. Hundley\* (Biochemistry and Molecular Biology), Polly R. Husmann\* (Anatomy, Cell Biology & Physiology), Anirban Mitra\* (Medical and Molecular Genetics), Heather O'Hagan\* (Medical and Molecular Genetics),

#### **Assistant Professors**

Richard Carpenter (Anatomy, Cell Biology & Physiology)\*, Stephanie Ems-McClung (Biochemistry and Molecular Biology), Martin C. Ronan (Anatomy, Cell Biology & Physiology), Charles N. Rudick (Pharmacology and Toxicology)

### **Lecturers**

Douglas Carr (Medicine), Stacey M. Dunham (Anatomy, Cell Biology & Physiology), Richard G. Mynark (Anatomy, Cell Biology & Physiology), Sarah Tieman (Medicine and Pediatrics)

### **Courses**

#### **Anatomy**

- **ANAT-A 464 Human Tissue Biology (4 cr.)** Lecture and lab course that examines the histology of human tissues.
- **ANAT-A 505 Human Development (2 cr.)** C: Not currently being offered P: Z315 or equivalent and consent of instructor Normal and abnormal human development. General considerations of development from embryonic through early neonatal period. Emphasis on understanding basis for morphological condition found in the adult.
- **ANAT-A 512 Introduction to Research in Anatomy (1 cr.)** Lectures and demonstrations in current research interests of faculty. Required of all new graduate students.
- **ANAT-A 513 Introduction to Research Techniques (1 cr.)** P: A512 Individual work on a research problem. Required of all new graduate students.
- **ANAT-A 515 Basic Human Anatomy for Educators (5 cr.)** P: permission of instructor. Systems-based human anatomy course designed for graduate students who will be teaching basic undergraduate human anatomy courses.
- **ANAT-A 530 Special Topics (arr. cr.)** P: Consent of instructor. \*\*These courses are eligible for a deferred grade. Work in advanced areas in anatomy. May be repeated for credit.
- **ANAT-A561 History of Anatomy (2 cr.)** History of the anatomical sciences – gross anatomy, histology, neuroanatomy, and embryology – from antiquity to the present. Through assigned readings and discussions, students will explore the work of the great anatomists and their discoveries.
- **ANAT-A 580 Human Anatomy for Medical Imaging Evaluation (3 cr.)** This course provides a systematic study of human anatomy and how this anatomy may be examined with medical imaging. Lecture explores the anatomy and medical imaging of the following systems: skeletal, cardiovascular, nervous, respiratory, digestive, urinary and reproductive. Lab uses models, skeletal materials, and computerized/digital medical imaging examples.
- **ANAT-A 610 Comparative Neuroanatomy (2 cr.)** P: Consent of instructor; graduate standing; one neuroscience course or equivalent. C: Not currently being offered. A comparison of the central nervous system of mammalian and nonmammalian vertebrates, including a laboratory study of representative specimens.

- **ANAT A620: Human Structure (9 cr.)** consent of instructor. Explores developmental processes (embryology) and microscopic-to-macroscopic structural organization of the human body. Course is subdivided into didactic (lecture) and lab components. Cadaveric dissection and virtual microscopy, along with medical imaging, are utilized.
- **ANAT-A 800 Research in Anatomy (arr. cr.)**  
P: Must have consent of faculty member supervising research
- **ANAT- A 850 Topical Seminar in Anatomy (1 cr.)**  
Topics of current interest discussed in seminar format.
- **ANAT-A 878 Anatomy Teaching Practicum (2 cr.)** Supervised teaching in an upper-level undergraduate or graduate/medical anatomy-related course offered at IUSM-Bloomington. Teaching may involve being instructor of record, lecturing, and/or lab instruction.
- **ANAT-A 800 Research in Anatomy (arr. cr.)\*\***These courses are eligible for a deferred grade.

### Medical Sciences

- **MSCI-M 501 Basic and Clinical Pharmacology (3 cr.)** This course provides a comprehensive study of clinical pharmacology for graduate students in a variety of health fields. Students will learn the mechanisms of action, clinical indications, adverse effects, and drug interactions of various medications used to treat disorders of major body systems.
- **MSCI-M 508 Precision Medicine of Cancer (2 cr.)** This course will highlight the scientific evidence for precision medicine approaches and discuss what is needed to move the concept of precision medicine into clinical practice. As oncology is the clear choice for enhancing the near-term impact of precision medicine, this course will focus on individualized, molecular approaches to cancer. In addition, the course will also incorporate how findings in the cancer field will provide a strong framework for accelerating the adoption of precision medicine in other disease.
- **MSCI-M 509 Basics of Scientific Communication (1 cr.)**This course will take students through a series of exercises that expose them to various forms of communication - from writing an abstract, to preparing figures for papers vs. posters vs. talks and to talking about their science both to a scientific audience and to the lay public.
- **MSCI-M 510 Research Methods (2 cr.)** This course will give students a strong fundamental understanding of proper experimental design and commonly used research methods. The course will be taught by critically evaluating common cellular and molecular biology techniques and by critiquing primary literature that utilizes these techniques. Recurring themes will include hypothesis development, appropriate controls, biological versus technical replicates, troubleshooting, analysis of data, statistics, and presentation of data. Students will learn how to evaluate and learn new protocols as well as evaluate experiments presented in primary literature.
- **MSCI-M 512 Special Topics in Cell, Molecular and Cancer Biology (1.5-3 cr.)**
- **MSCI-M 535 Biopsychosocial Medicine: A Case Study Approach (3 cr.)** Hybrid course that looks at why some people get sick and others stay well by introducing the interconnections between biological, social, psychological and behavior sciences as they relate to health and disease.
- **MSCI-M 550 Seminar in Cell, Molecular and Cancer Biology (1 cr.)**  
In this Journal Club course, students will take turns presenting new and significant findings relating to molecular, cellular and cancer biology. Students are encouraged to present high impact articles relevant to their thesis research and integrate their own findings into the presentation.
- **MSCI-M 565Medicine and Well Being (3 cr.)**  
Students will investigate the social determinants of health by studying the pathophysiology of selected diseases and by participating in service-learning in community agencies in order to promote well-being at the individual and community level.
- **MSCI-M 570 Mechanisms of Human Disease (1-6 cr.)** C: Not currently being offered. Intensive study of selected topics of human disease and pathological processes.
- **MSCI-M 575 Human Diseases (5 cr.)** This course explores and details the basic elements of human disease. The fundamental pathology of all organ systems of the human body are covered as are the basic elements of bodily response to a variety of forms of injury.
- **MSCI-M 580 Molecular Biology of Cancer (3 cr.)** Cancers are genetic diseases produced by mutations in the genes that control cell signaling and cell fate. This class will provide an in-depth study of cell signaling and mechanisms by which cell fate is regulated. These concepts will be used to develop a comprehensive understanding of how tumor cells develop, recruit the support from normal cells, modulate the immune system, metastasize and are treated.
- **MSCI-M 620 Pedagogical Methods in the Health Sciences (3 cr.)** This course is for biomedical sciences graduate students who want to be excellent instructors and classroom researchers. Students will learn about pedagogical methods, student learning styles and methods of instructional delivery. Students also will learn about the scholarship of teaching and develop a foundation for implementing classroom research and assessment.
- **MSCI-M 630 Molecules to Cells to Tissues (7 cr.)** Permission of Instructor. Course emphasizes underpinning of concepts integral to the disciplines of biochemistry, cell and molecular biology, histology, and medical genetics – especially how they relate to the practice of medicine. Course consists of lecture, small group sessions, and labs.
- **MSCI-M 660 Neuroscience and Behavior (6 cr.)** Permission of instructor. Provides a comprehensive introduction to the structure, function, and disorders of the human nervous system. Using an organ system-based approach, this highly multidisciplinary course integrates a strong foundational basic science framework with clinical neurology and psychiatry.



## Pathology

- **PATH-C 800 Advanced Pathology (6 cr.)** C: Not currently being offered. P: C603. Subject material and hours arranged to conform to needs of student.
- **PATH-C 858 Experimental Pathology (5 cr.)** C: Not currently being offered. Review and performance of selected experiments in pathology illustrating the types of pathologic processes.
- **PATH-C 859 Research in Pathology (arr. cr.)** C: Not currently being offered \*\*These courses are eligible for a deferred grade. Supervised initiation of a research project in pathology, and counseling in the completion of a thesis.

## Pharmacology

- **PHAR-F 605 Principles of Pharmacology I (4 cr.)** C: Not currently being offered P: Chemistry C483, Medical Sciences P531-P532, or consent of instructor. Basic principles and clinical aspects of modern pharmacology presented in lectures. Physicochemical properties of drugs. Drugs that affect the autonomic nervous system. Drugs that act on cardiovascular and renal systems. Chemotherapy of cancer, infections, and parasites.
- **PHAR-F 606 Principles of Pharmacology II (4 cr.)** C: Not currently being offered P: F605. Drugs that influence the central nervous system. Drugs that influence gastrointestinal and endocrine systems. Immunopharmacology and the pharmacology of allergy and inflammation. Toxicology.
- **PHAR-F 611 Methods of Pharmacology I (3 cr.)** C: Not currently being offered P: Consent of instructor. Chemical and biological procedures used in pharmacological research. Lectures and demonstrations of techniques used for the determination of specific substances in biological material.
- **PHAR-F 612 Methods of Pharmacology II (3 cr.)** C: Not currently being offered P: F611. Laboratory application of principles and techniques presented in F611 to practical problems in pharmacological research. Introduction to data handling.
- **PHAR-F 613 Graduate Pharmacology I (3 cr.)** C: Not currently being offered P: F605-F606 or consent of instructor. Molecular mechanisms of drug action, drug-receptor interactions, drug metabolism, and pharmacokinetics.
- **PHAR-F 614 Graduate Pharmacology II (3 cr.)** C: Not currently being offered P: F613 or consent of instructor. Continuation of F613. Molecular mechanisms of drug action, drug-receptor interactions, drug metabolism and pharmacokinetics.
- **PHAR-F 615 Chemotherapeutic Pharmacology (3 cr.)** C: Not currently being offered P: F605-F606 or consent of instructor. C: Not currently being offered. Basic principles of use of drugs as selectively toxic agents and of chemotherapy of bacterial, parasitic, or viral diseases and malignancies.
- **PHAR-F 616 Molecular Pharmacology (3 cr.)** C: Not currently being offered P: F605-F606 or consent of instructor. C: Not currently being offered. Molecular mechanisms as they relate to drug action. Biological transducers, receptor mechanisms,

subcellular phenomena in the actions of drugs on mammalian systems.

- **PHAR-F 617 Pharmacology of Drug Metabolism (3 cr.)** C: Not currently being offered P: F605-F606 or consent of instructor. C: Not currently being offered. Physicochemical principles involved in the absorption, distribution, metabolism, and excretion of drugs and other foreign compounds in the mammalian organism.
- **PHAR-F 618 Pharmacokinetics (3 cr.)** P: F617. C: Not currently being offered. Kinetic aspects of the absorption, distribution, and excretion of drugs in the mammalian organism. Compartmentalization, multiphasic decay curves, and computerized treatments.
- **PHAR-F 619 Endocrine Pharmacology (3 cr.)** P: F605-F606 or consent of instructor. C: Not currently being offered. The pharmacology of hormones. Biosyntheses, structures, actions, and degradations of hormones endogenous to mammalian species. Structure and pharmacological activity of synthetic analogs and antagonists of naturally occurring hormones.
- **PHAR-F 620 Special Topics in Pharmacology (3 cr.)** P: F605-F606 or consent of instructor. Special topics of current interest in pharmacology. May be repeated.
- **PHAR-F 621 Readings in Pharmacology (1-3 cr.)** Supplementary readings and tutorial discussions in aspects of pharmacology to fit the needs of individual students or for specialized areas. May be repeated.
- **PHAR-F 625 Research in Pharmacology (arr. cr.)** Original research as approved.
- **PHAR-F 630 Seminar in Pharmacology (1 cr.)** C: Not currently being offered Research reports by students, faculty, and invited guests.

## Physiology

- **PHSL-P 416 Comparative Animal Physiology (3 cr.)** P: Introductory physiology or permission of instructor.
- **PHSL-P 512 Introduction to Research in Physiology (1 cr.)** Introduction to areas and methods of current faculty research. Required of all new graduate students.
- **PHSL-P 513 Introduction to Research Techniques (1 cr.)** P: P512. Individual work on a research problem.
- **PHSL-P 515 Basic Human Physiology for Educators (5 cr.)** P: permission of instructor. Systems-based human physiology course designed for graduate students who will be teaching basic undergraduate human physiology courses.
- **PHSL-P 530 Special Topics (arr. cr.)** P: Consent of instructor. Work in advanced areas in physiology.
- **PHSL-P 531 Human Physiology I (3 cr.)** C: Not currently being offered Basic principles of homeostasis; muscle, cardiovascular, and renal physiology and metabolism relevant to humans. Sem I
- **PHSL-P 532 Human Physiology II (5 cr.)** C: Not currently being offered Basic physiological principles of temperature regulation, respiration, digestion, and endocrinology relevant to humans. Sem II



- **PHSL-P537 Topics in Clinical Physiology (3 cr.)** P: Permission of instructor. Graduate-level course for students intending to gain specific and advanced clinical physiology knowledge across a range of topics in Medical Sciences.
- **PHSL-P 550 Seminar in Physiology (1 cr.)** P: Graduate standing in physiology. Biomedical colloquium/seminar series on current topics of interest in medical sciences.
- **PSHL P 640 Fundamentals of Health and Disease (6 cr.)** Permission of instructor. Students' knowledge of physiological, pathophysiological and pharmacological principles will enable them to describe maintenance of normal physiologic functions and discuss disease states and drug treatments in terms of altered cellular and tissue function.
- **PHSL-P 800 Research in Physiology (arr. cr.)\*\***  
This course is eligible for a deferred grade.

## Institute for Medieval Studies

### College of Arts and Sciences

Departmental E-mail: [mest@indiana.edu](mailto:mest@indiana.edu)

Departmental URL: <https://medieval.indiana.edu/index.html>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Ph.D. Minor in Medieval Studies

##### Course Requirements

Four courses in Medieval Studies outside the student's major department. These courses must be from at least two different departments and must include one of the following courses: MEST-M 500, M 502, M 600, M 815, or CLAS-L 300, L 400, L 409, L 540, L 611.

### Grades

Courses in which a student receives less than a B (3.0) will not count toward the minor.

### Examination

None.

#### Graduate Area Certificate in Medieval Studies

The Area Certificate in Medieval Studies is designed to allow doctoral students to investigate medieval civilization more extensively than in the Ph.D. minor program.

##### Course Requirements

Nine courses in the medieval period: four in the student's major department and five in other departments, two of which should be drawn from the group of courses listed below, with at least one course from Medieval Studies. Please note that the selection of courses not in the student's major department should be made in consultation with the Institute before courses are presented for certification. Students in departments that do not provide the requisite four courses in medieval topics

in their disciplines may, in consultation with the Institute, design an alternative program.

In addition to courses offered by the Medieval Studies Institute, graduate courses in the medieval period are offered by twenty departments across the College of Arts and Sciences, the Jacobs School of Music, and the Department of Information and Library Science. Students should consult the Medieval Studies Web site (<http://www.indiana.edu/~medieval/index.shtml>) for a complete list of approved courses offered during each semester.

### Language Requirements

Students must demonstrate advanced proficiency in one of the following languages: Classical Greek, Hebrew, Italian, Latin, Medieval Arabic, Medieval Japanese, Old English, Old French, Old Norse, Old Occitan, or Persian. Advanced proficiency can be established by presenting for credit two advanced courses in philology or literary studies of the language in question, or by appropriate advanced examination.

### Grades

Courses in which a student receives less than a B (3.0) will not count toward the certificate.

### Examination

None.

### Faculty

#### Director

Professor Shannon Gayk\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Provost Professors

Karma Lochrie\* (English)

#### Distinguished Professors

Christopher Beckwith\* (Central Eurasian Studies),  
Jamsheed Choksy\* (Central Eurasian Studies)

#### Professors

Kari Gade\* (Germanic Studies), Patricia Ingham\* (English), Michael Long\* (Musicology), Paul Losensky\* (Central Eurasian Studies, Comparative Literature), Rosemarie McGerr\* (Comparative Literature), Suzanne Stetkevych\* (Near Eastern Languages and Cultures), John Walbridge\* (Near Eastern Languages and Cultures), Rega Wood\* (Philosophy)

#### Associate Professors

Bridget K. Balint\* (Classical Studies), Sarah Bassett\* (Art History), Daniel Caner\* (Near Eastern Languages and Cultures), Deborah Deliyannis\* (History), Shannon Gayk\* (English), Ryan Giles\* (Spanish and Portuguese), Manling Luo\* (East Asian Languages and Culture), Diane Reilly\* (Art History), Jeremy Schott\* (Religious Studies), Leah Shopkow\* (History), Barbara Vance\* (French and Italian)

## Assistant Professors

Giuliano Di Bacco (Musicology), Elizabeth Hebbard (French and Italian), Morten Oxenboell (East Asian Languages and Cultures)

## Lecturers

Ariann Stern-Gottschalk (Slavic and East European Languages and Cultures)

## Affiliated Faculty

### Ottoman and Modern Turkish Studies Professor

Kelmay Silay\* (Central Eurasian Studies)

### Distinguished Professor and Ruth N. Halls Professor

William Newman\* (History and Philosophy of Science and Medicine)

## Professors

Asma Afsaruddin\* (Near Eastern Languages and Cultures), Cynthia Bannon\* (Classical Studies), Mark Kaplan\* (Philosophy), Timothy W. O'Connor\* (Philosophy), Rex Sprouse (Second Language Studies)

## Associate Professors

Constance Furey\* (Religious Studies), R. Kevin Jaques\* (Religious Studies), Dana Marsh\* (Jacobs School of Music), Bret Rothstein\* (Art History), Massimo Scalabrini\* (French and Italian), Jonathan Schlesinger\* (History), Joel Silver (Lilly Library),

## Assistant Professor

Heather Blair (Religious Studies), Margaret Graves (Art History), Sonia Velazquez (Religious Studies, Theatre, Performance, and Contemporary Dance)

## Clinical Assistant Professor

Kalani Craig (History)

## Lecturer

Sarah Ifft Decker (Jewish Studies)

## Courses

### MEST-M 500 Introduction to Medieval Studies (4 cr.)

An introduction to issues and practices in the field with some attention to bibliographical tools.

### MEST-M 502 Colloquium in Medieval Studies (4 cr.)

Investigation of an interdisciplinary problem in medieval civilization, topic and disciplines to vary, or readings of foundational texts from the period. May be repeated for credit.

**MEST-M 525 Medieval Provencal (2-4 cr.)** A variable topics course focusing on the language, literature, and documents regarding the use of the dialects of Old Occitan in France, Italy, and Spain during the Middle Ages. Taught in English with materials in the original language. May be repeated once for credit.

**MEST-M 600 Medieval Manuscripts (4 cr.)** Paleography, codicology, diplomatics; the study of manuscript production, history, and use. May be repeated for credit.

**MEST-M 650 Manuscript Cultures (3-4 cr.)** Study of medieval and early modern manuscripts and primary historical documents and the evaluation of the cultural contexts of their production, reproduction and use.

### MEST-M 700 Seminar in Medieval Studies (4 cr.)

Advanced research in specialized topics and problems in the field. May be repeated for credit.

### MEST-M 815 Readings in Medieval Civilization (1-4 cr.)

## Cross-listed Courses

### Classical Studies

- L300 Intensive Introduction to Classical and Medieval Latin (3 cr.)
- L400 Intensive Study of Literary Latin (3 cr.)
- L409 Readings in Medieval Latin (3 cr.)
- L540 Medieval Latin (4 cr.)
- L611 Seminar in Latin Epigraphy or Palaeography (4 cr.)

## Music

### Jacobs School of Music

Departmental E-mail: [musgrad@indiana.edu](mailto:musgrad@indiana.edu)

Departmental URL: <http://www.music.indiana.edu/degrees/graduate-diploma/index.shtml>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff uses those requirements contained only in *The University Graduate School Bulletin*.)

## Curriculum

### Degrees Offered

Master of Arts, dual Master of Arts and Master of Library Science (jointly with the Department of Information and Library Science), and Doctor of Philosophy.

In addition, the Jacobs School of Music offers the Master of Music, the Master of Music Education, the Master of Science in Music Education, the combined Master of Music and Master of Library Science (jointly with the Department of Information and Library Science), the Doctor of Music, and the Doctor of Music Education degrees. For information regarding degrees offered exclusively or jointly by the Jacobs School of Music and the Department of Information and Library Science, see their respective bulletins.

### Special School Requirements

(See also general University Graduate School requirements.)

## Admission

Applicants must apply to both the Graduate Division of the Jacobs School of Music and the University Graduate School. Entrance proficiency examinations are also required; for details see the "Graduate Division" section of the Jacobs School of Music Bulletin. Students must meet the general requirements of the University Graduate School and the specific requirements of the Jacobs School of Music outlined in its bulletin.

## Grades

Current and cumulative grade point average of at least 3.0 (B).

### **Master of Arts Degree Master of Arts in Musicology Admission**

Bachelor's degree (B.M. or B.A.) with a major in music, or demonstrated equivalent. Applications must include a formal research paper on a historical or theoretical subject in music.

### **Proficiency Examinations**

Examinations in music theory, music history, keyboard skills, and music performance.

### **Major**

18 credit hours

9 hours selected from:

- M502 Composers: Variable Topics (3 cr.) May be repeated for different topics.
- M510 Topics in Music Literature (3 cr.) May be repeated for different topics.
- M525 Survey of Operatic Literature (3 cr.)
- M527 Symphonic Literature (3 cr.)
- M528 Chamber Music Literature (3 cr.)
- M650 Music in the United States (3 cr.)
- M651 Medieval Music (3 cr.)
- M652 Renaissance Music (3 cr.)
- M653 Baroque Music (3 cr.)
- M654 Classic Music (3 cr.)
- M655 Romantic Music (3 cr.)
- M656 Modern Music (3 cr.)
- M657 Music Since 1960 (3 cr.)

6 hours selected from:

- T545 Introductory Analysis of Music Literature (3 cr.)
- T551 Analytical Techniques for Tonal Music (3 cr.)
- T555 Schenkerian Analysis (3 cr.)
- T556 Analysis of Music since 1900 (3 cr.)

M601 Master's Seminar in Musicology (3 cr.)

### **Music History and Literature Requirement**

6 credit hours selected from:

- M502 Composers: Variable Topics (3 cr.) May be repeated for different topics.
- M510 Topics in Music Literature (3 cr.) May be repeated for different topics.
- M525 Survey of Operatic Literature (3 cr.)
- M527 Symphonic Literature (3 cr.)
- M528 Chamber Music Literature (3 cr.)
- M650 Music in the United States (3 cr.)
- M651 Medieval Music (3 cr.)
- M652 Renaissance Music (3 cr.)
- M653 Baroque Music (3 cr.)
- M654 Classic Music (3 cr.)
- M655 Romantic Music (3 cr.)
- M656 Modern Music (3 cr.)
- M657 Music Since 1960 (3 cr.)

### **Other Required Credits**

6 credit hours inside or outside music in which the student has the background to do graduate-level course work, as approved by the director of graduate studies.

### **Tool-Subject Requirement**

M539 Introduction to Music Bibliography (2 cr.) with a grade of B or higher.

### **Foreign Language Requirement**

Reading knowledge of French, German, Italian, Latin, Russian, or Spanish. Reading knowledge in a language may be demonstrated in the following ways: by passing an examination administered by the appropriate language department, by passing a translation examination administered by the musicology department, by grades of B or higher in two semesters of reading courses at the graduate level, or by receiving a grade of B or higher in a literature or civilization course at Indiana University numbered 300 or higher (exclusive of individual readings and correspondence courses) in which the reading is done in the foreign language.

### **Major Ensemble**

2 credit hours each semester until four fall-spring enrollments are reached or the student graduates.

### **Master of Arts Examination**

Ordinarily to be taken in the semester in which a student completes the course work for the degree.

### **Dual Master of Arts and Master of Library Science Degrees**

This program permits the student to coordinate a Master of Library Science degree with either a Master of Arts degree in musicology or a Master of Music in music theory.

### **Admission Requirement**

In addition to the general requirements, the student must apply for admission to the Jacobs School of Music and simultaneously to the Department of Information and Library Science and must meet admission criteria established by each.

### **Requirements**

The student must satisfy all the requirements for a Master of Arts degree in musicology or a Master of Music degree in music theory, and for a Master of Library Science degree.

The Other Required Credits requirement for the Master of Arts or Master of Music degree is fulfilled by 6 credit hours in Library Science, which count towards both degrees.

### **Doctor of Philosophy Degree**

Majors are available in:

### **Music Education Prerequisite**

Candidates must have a scholarly or teaching background that indicates potential for outstanding scholarship in the field of music education.

### **Admission**

(1) short video recording which demonstrates proficiency in teaching and performance or ensemble direction (2) interview with music education faculty (3) three- to five-page essay on applicant's background and goals in music education.

### Proficiency Examinations

Examinations in music theory, music history, keyboard skills, and music performance.

### Major-Field Requirements

48 credit hours

#### Foundation Courses 9 credit hours

- E518 Foundations of Music Education (3 cr.)
- E530 Learning Processes in Music (3 cr.)
- E535 Measurement, Evaluation, and Guidance in Music (3 cr.)

These courses may be waived through methods determined by the department such as completion of an equivalent course or examination, with the approval of the department chairperson and the director of graduate studies. Credit hours for waived courses may be replaced with electives or dissertation.

#### Core Courses 8 credit hours

- E618 History, Curriculum, and Philosophy of Music Education (3 cr.)
- E619 Psychology of Music (3 cr.)
- E645 Music Teacher Education (2 cr.)
- E663 Public Research Lecture in Music Education (0 cr.)

#### Research courses 18 credit hours

- E631 Quantitative Research in Music Education (3 cr.)
- E632 Advanced Quantitative Research in Music Education (3 cr.)
- E640 Qualitative Research in Music Education (3 cr.)
- E658 Seminar in Music Education (2 cr.)
- E660 Philosophical Research in Music Education (2 cr.)
- E661 Historical Research in Music Education (2 cr.)
- One of:
  - E665 Advanced Philosophical Research in Music Education (3 cr.)
  - an advanced qualitative, historical, or quantitative research course outside music education, approved by the music education department
- E650 Music Education Research Colloquium (0 cr.), required each semester of full-time enrollment

### Specialization Area

6 credit hours of graduate music courses in one of the following areas with the approval of the chair or coordinator of graduate studies in music education. An audition is required for wind conducting, choral conducting, and individual studio (performance/composition) specialization areas.

1. **Wind Conducting and Literature.** G566-G567 Interpretation and Conducting of Band Literature I-II (3-3 cr.)
2. **Choral Conducting and Methodology.** Two of E528 Advanced Choral Methods and Materials (3 cr.), E582 Methods and Materials for Teaching Vocal Jazz (3 cr.), or G560 Graduate Choral Conducting (3 cr.)
3. **College Music Teaching.** E517 Sociology of Music (3 cr.), E635 College Music Teaching (3 cr.)
4. **Instrumental Methodology.** E527 Advanced Instrumental Methods (3 cr.), E568 Administration of Instrumental Groups (3 cr.)
5. **Jazz Methodology.** E581 Methods and Materials for Teaching Instrumental Jazz (3 cr.) or E582 Methods and Materials for Teaching Vocal Jazz (3 cr.): O501 Fundamentals of Jazz Theory (1 cr.) and O521 Jazz Improvisation 1 (2 cr.)
6. **General Music Methodology.** One of E524 Exploratory Teaching in General Music K-12 (3 cr.) or E540 Topics in General Music (3 cr.); one of E521 The Children's Chorus (3 cr.), E522 Music in Early Childhood (3 cr.), or E571 Kodály Concept I (3 cr.)
7. **String Methodology.** E646 Graduate Seminar in String Research (3 cr.), one of G590 String Orchestra Literature (3 cr.) or E580 Methods and Materials for Teaching String Music (3 cr.)
8. **Individual studio study (performance/composition).** 6 credits of 800-level individual study in a performance area or composition.

### Minor

12 credit hours within or outside the field of music in any subject for which the candidate has the necessary background for advanced coursework. The minor field must differ from the specialization area. Some departments may require a written and/or oral examination in the minor field.

### Dissertation

E700 Dissertation in Music Education (7 cr.)

### Qualifying Examination

Written and oral examination.

### Music Theory Admission

Master's degree in music theory or musicology or the demonstrated equivalent. Students with outstanding credentials may apply directly from a bachelor's degree. Students are required to demonstrate competency in all areas required of the M.M. music theory major at Indiana University, and may be exempted from certain courses on the recommendation of the department. In addition to three letters of recommendation, applicants must submit two extensive, formal research papers or a master's thesis in music theory or musicology. An individual interview is also required; applicants are expected to be proficient in sight singing, aural skills, and keyboard harmony.

### Proficiency Examinations

Examinations in music theory, music history, keyboard skills, and music performance.



## Major-Field Requirements

Students with a completed master's degree must complete a minimum of 36 credit hours in the major field, including dissertation. Students admitted directly from the bachelor's degree must complete at least 66 credit hours in the major field.

### Foundation courses

Demonstrated proficiency in the content of the following courses:

- T551 Analytical Techniques for Tonal Music (3 cr.)
- T555 Schenkerian Analysis (3 cr.)
- T556 Analysis of Music Since 1900 (3 cr.)
- T565 Stylistic Counterpoint: Variable Topics (3 cr.)
- T591 Music Theory Pedagogy (3 cr.)

Students may demonstrate proficiency through methods determined by the department such as examination or submission of a portfolio based on previous coursework, or by completion of the above courses. Proficiency demonstrated through means other than taking the courses listed requires approval of the department chairperson and the director of graduate studies.

### Advanced courses

- T623-T624 History of Music Theory I-II (3-3 cr.)
- T658 Seminar in Music Theory: Variable Topics (3-3-3-3 cr.)
- T550 Readings in Music Theory\* (3 cr.)
- 3 credits chosen from T658 Seminar in Music Theory: Variable Topics (3 cr.), T561 Music Theory: Variable Topics (3 cr.), T619 Projects and Problems in Music Theory (3 cr.), or another graduate course approved by the department chairperson and director of graduate studies.
- T650 Dissertation Proposal Workshop (1 cr.)

\*Students who have already fulfilled the requirement for T550 must take 3 credits of T658, T561, or T619, or another graduate course approved by the department chairperson and director of graduate studies.

### Minor and Other Required Credits

24 credit hours. Student must elect a 12-credit hour minor field in either music history and literature, musicology, or ethnomusicology. The other 12 credit hours may be taken inside or outside the Jacobs School of Music, subject to the approval by the director of graduate studies.

If all credits are taken in a single field outside the student's department, a formal minor must be declared. A maximum of 9 credits may be taken in a single department unless a minor is declared.

### Public Lecture

T659 Public Lecture (0 cr.). The public lecture must be completed before scheduling the oral qualifying examination.

### Dissertation

T700 Dissertation in Music Theory (2-26 cr.).

### Tool-Subject Requirement

M539 Introduction to Music Bibliography (2 cr.) with a grade of B or higher.

### Foreign Language Requirement

Reading knowledge of one non-English language as demonstrated by examination; by grades of B or higher in two semesters of reading courses at the graduate level; by receiving, in the cases of Catalan, French, German, Italian, Portuguese, Russian, or Spanish, a grade of B (3.0) or higher in a literature or civilization course at Indiana University numbered 300 or higher (exclusive of individual readings and correspondence courses) in which the reading is done in the foreign language; or demonstration of proficiency in one research skill, approved by the department and the director of graduate studies of the Jacobs School of Music.

### Qualifying Examination

Written and oral examination.

### Musicology Admission

Applicants for the Ph.D. in musicology must demonstrate strong preparation in music history. Students with outstanding credentials may apply directly from a bachelor's degree; students holding an M.A. or M.M. in musicology may be exempted from certain courses on the recommendation of the department. A formal research paper must be submitted with the application.

### Proficiency Examinations

Examinations in music theory, music history, keyboard skills, and music performance.

### Major-Field Requirements

48 to 78 credit hours

- M551 Introduction to Historical Musicology (3 cr.)
- M602 Seminar in Musicology (3-3-3-3 cr.)
- M603 Methods of Musical Scholarship (3 cr.)
- Six credits drawn from M602 or M603 (3-3 cr.)
- Courses in musicology, music history and literature, music theory, ethnomusicology, or other musical subjects with approval of the department and director of graduate studies (3-3-3 cr.). Students holding an MA or MM in musicology may be exempted from some or all of these courses on the recommendation of the department. If these credits are waived, students must enroll in an additional 9 credits of M700 Dissertation in Musicology.
- M604 Qualifying Exam Tutorial (3 cr.)
- M605 Qualifying Exam and Dissertation Area Tutorial (3 cr.)

### Minor

One minor, which may be inside or outside of music, with sufficient credit hours to satisfy the course requirements for a Ph.D. minor, as determined by the department in which the minor is taken. All such minors must be recognized or accepted by the University Graduate School. A Ph.D. minor typically requires 12 credit hours of course work, and departments may also require a written and/or oral examination in the minor field.



## Dissertation

M700 Dissertation in Musicology (6-36 cr.).

## Foreign Language Requirement

Reading knowledge of two non-English languages. The first language must be French, German, Italian, Latin, Russian, or Spanish; the second should be relevant to the student's research area and is to be determined in consultation with a musicology faculty advisor and the department chair. Reading knowledge in a language may be demonstrated in the following ways: by passing an examination administered by the appropriate language department, by passing a translation examination administered by the musicology department, by grades of B or higher in two semesters of reading courses at the graduate level, or by receiving a grade of B or higher in a literature or civilization course at Indiana University numbered 300 or higher (exclusive of individual readings and correspondence courses) in which the reading is done in the foreign language.

## Qualifying Examination

Written and oral examination focusing on areas chosen by the candidate in consultation with his or her advisory committee.

## Progress toward Degree

Proficiencies in music history and music theory should be met by the end of the first year. One language examination should be passed by the end of the first year, and a second must be passed before the qualifying examination along with keyboard and performance proficiencies. Students should ordinarily complete course work by the middle of the third year (end of the third year for students admitted from a bachelor's degree), complete qualifying examinations in the following semester, and submit a dissertation topic proposal a semester after that. Deviations from this schedule should be the subject of consultation with the department chair.

## Doctoral Minors in Music

### Minor in Brass Instruments (Horn, Trumpet, Trombone, Euphonium, or Tuba)

The minor in a brass instrument provides advanced training in performance on the chosen instrument (horn, trumpet, trombone, euphonium, or tuba), with the option of coursework in small ensembles, brass literature, and brass pedagogy.

12 credit hours

- 9-12 credit hours in one of the following:

B810 Horn Graduate Minor  
B820 Trumpet Graduate Minor  
B830 Trombone Graduate Minor  
B840 Euphonium Graduate Minor  
B850 Tuba Graduate Minor

- 0-3 credit hours selected from the following

F545 Brass Chamber Ensemble (1 cr.)  
F550 Chamber Music (1 cr.)  
M641–M642 Brass Literature I–II (3–3 cr.)  
E508 Euphonium Pedagogy (1 cr.)  
E509 Horn Pedagogy (1 cr.)  
E510 Trumpet Pedagogy (1 cr.)

E511 Trombone Pedagogy (1 cr.)  
E512 Tuba Pedagogy (1 cr.)

## Minor in Choral Conducting

The minor in choral conducting provides advanced foundational skills in score analysis, choral literature, and conducting technique. Prior conducting experience and a conducting audition are required for acceptance into the minor in choral conducting.

G538 Choral Rehearsal Techniques (2 cr.)

3 credit hours selected from the following:

- M555 Foundations in Choral Score Analysis and Preparation (3 cr.)
- M535 Master's Seminar in Choral Literature: Renaissance to 1700 (3 cr.)
- M536 Master's Seminar in Choral Literature: 1700 to 1900 (3 cr.)
- M537 Master's Seminar in Choral Literature: 20<sup>t</sup> Century to Today (3 cr.)
- M664 Topics in Choral Music (3 cr.)

3 credit hours selected from the following:

- F531 Graduate Ear Training for Conductors (1 cr.)
- F532 Graduate Score Reading (1 cr.)
- G555 Foundations in Choral Conducting (3 cr.)
- G560 Graduate Choral Conducting (3 cr.), may be taken more than once
- G535 Master's Choral Conducting: Renaissance to 1700 (2 cr.)
- G536 Master's Choral Conducting: 1700 to 1900 (2 cr.)
- G537 Master's Choral Conducting: 20<sup>t</sup> Century to Today (2 cr.)

4 credit hours selected from either of the lists above.

## Minor in Collaborative Piano

The minor in collaborative piano provides advanced training and practice in instrumental collaborative piano performance.

12 credits

- P801 Collaborative Piano Graduate Minor (8 cr.)
- 4 credits selected from:
  - F520 Topics in Performance Study Graduate (1–3 cr.)

F520 topics are subject to approval of the chair of the Chamber and Collaborative Music department.

## Minor in Composition

The minor in music composition provides graduate-level instruction in composition

12 credit hours

- 8 credit hours of K810 Graduate Composition Minor (3-3-2 cr.)
- 2 credit hours chosen from:
  - K810 Graduate Composition Minor (2 cr.)
  - K551 Advanced Orchestration (2 cr.)

- 2 credit hours of K501 Composition Forum (1-1 cr.)
- the public performance on student composition recitals of at least three compositions written while enrolled in K810, to be graded as Pass/Fail by a committee of at least three composition faculty in attendance; and
- the composition of a vocal work to an assigned text within a 24-hour period, and the composition of a short movement for chamber ensemble within a seven-day period. Both compositions will be graded Pass/Fail.

### Minor in Electronic Music

The minor in electronic music provides graduate-level instruction in electronic and computer music composition.

12 credit hours selected from the following:

- K503 Electronic Studio Resources I (3 cr.)
- K504 Electronic Studio Resources II (3 cr.)
- K506 Projects in Electronic Music (3 cr.). Course may be repeated.
- K509 Seminar in Computer Music (3 cr.)

### Minor in Guitar

The minor in guitar provides advanced training in performance, with the option of coursework in small ensembles and guitar literature.

12 credit hours

- 9-12 credit hours of L800 Guitar Graduate Minor
- 0-3 credit hours selected from the following:

F550 Chamber Music (1 cr.)

F551 Practicum in Transcription for the Guitar (2 cr.)

M627 Independent Study of the Literature of the Guitar I (3 cr.)

### Minor in Harp

The minor in harp provides advanced training in performance, with the option of coursework in small ensembles and harp literature.

12 credit hours

- 9-12 credit hours of H800 Harp Graduate Minor
- 0-3 credit hours selected from the following:

F549 Harp Ensemble (1 cr.)

M643 Seminar in Harp Literature I (3 cr.)

M644 Seminar in Harp Literature II (3 cr.)

### Minor in Historical Performance

The minor in historical performance provides advanced training in historical performance and performance practices.

12 credit hours

- 6 credit hours selected from the following:

M635 Performance Practice Before 1750 (2 cr.)

M517–M518–M519–M520 Medieval/Renaissance/Baroque/Classical Performance Practice (2–2–2–2 cr.)

F501 Accompaniment of Baroque Music (2 cr.)

F502 Topics in Basso Continuo (2 cr.)

F503 Advanced Topics in Basso Continuo (2 cr.)

### M558 Topics in Historical Performance (1-3 cr.)

- 6 credit hours of electives (performance study, chamber music, or other courses) offered by the Historical Performance department and approved by the department chairperson.

### Minor in Jazz Studies

The minor in jazz studies provides training in the history and practice of jazz.

12 credit hours

- 3-12 credit hours selected from the following:

M591 Jazz History 1: Origins through 1949 (3 cr.)

M592 Jazz History 2: 1950–1969 (3 cr.)

M593 Jazz History 3: 1970–present (3 cr.)

M594 Big Band Jazz (3 cr.)

- 0-9 credit hours selected from the following:

O501 Fundamentals of Jazz Theory (1 cr.)

O512 Jazz Composition (3 cr.)

O513 Jazz Listening and Ear Training (3 cr.)

O514 Jazz Harmony (3 cr.)

O515 Fundamentals of Jazz Composition (2 cr.)

O516 Jazz Arranging 1 (3 cr.)

O517 Jazz Arranging 2 (3 cr.)

O521 Jazz Improvisation 1 (2 cr.)

O522 Jazz Improvisation 2 (3 cr.)

O523 Jazz Improvisation 3 (3 cr.)

O811 Jazz Bass Graduate Minor (2 cr.)

O812 Jazz Guitar Graduate Minor (2 cr.)

O813 Jazz Percussion Graduate Minor (2 cr.)

O814 Jazz Piano Graduate Minor (2 cr.)

O821 Jazz Saxophone Graduate Minor (2 cr.)

O831 Jazz Trumpet Graduate Minor (2 cr.)

O832 Jazz Trombone Graduate Minor (2 cr.)

O841 Jazz Voice Graduate Minor (2 cr.)

O851 Jazz Other Graduate Minor (2 cr.)

### Minor in Latin American and Caribbean Music

The minor in Latin American and Caribbean music provides advanced training in the history and performance of various types of Latin American and Caribbean music, ranging from colonial era, 19th and 20th century art music repertoires, to contemporary traditional, folk, and popular music genres.

12 credit hours

### Required Courses

6-12 credit hours selected from the following:

- M513 Topics in Latin American Music: Variable Topics (3 cr.) May be repeated for different topics.
- M690 Seminar in Latin American Music: Variable Topics (3 cr.) May be repeated for different topics.

### Electives

0-6 credit hours selected from the following:

- F530 Foundations of Latin American and Caribbean Percussion (3 cr.)
- F547 Percussion Chamber Ensemble (0-1 cr.)
  - Brazilian Ensemble
  - Steel Drumming

- F555 Latin American and Caribbean Chamber Music (0-1 cr.)
- F558 Applied Performance in Latin American and Caribbean Music (2 cr.)
- M513 Topics in Latin American Music: Variable Topics (3 cr.) May be repeated for different topics.
- M690 Seminar in Latin American Music: Variable Topics (3 cr.) May be repeated for different topics.
- ANTH-E 628 Latin American Social Movements (3 cr.)
- FOLK-F 638 Latin American Folklore/Folk Music: Variable Topics (3 cr.)
- HISP-S 588 Latino and/or Caribbean Literature (3 cr.)
- HIST-H 644 Colloquium in Latin American History (4 cr.)
- LTAM-L 501 Intro to Latin American Graduate Studies (3 cr.)
- LTAM-L 526 Special Topics in Latin American and Caribbean Studies (1-4 cr.)
- THTR-T 583 Topics in Theatre and Drama (1-3 cr.)

Note: Additional course offerings that have 25% or more Latin American/Caribbean content can count as an elective towards the minor. This requires prior approval from the Director of the Latin American Music Center.

### Minor in Music Education

The minor in music education provides graduate-level instruction in learning theories and practical approaches to music teaching and learning.

12 credit hours

- 6 credit hours selected from the following:

E517 Sociology of Music (3 cr.)  
 E518 Foundations of Music Education (3 cr.)  
 E530 Learning Processes in Music (3 cr.)  
 E535 Measurement, Evaluation, and Guidance in Music (3 cr.)  
 E618 History, Curriculum, and Philosophy of Music Education (3 cr.)  
 E619 Psychology of Music (3 cr.)  
 E635 College Music Teaching (3 cr.)

- 6 credit hours selected from the above courses or the following:

E502 The Practice of Music Teaching (3 cr.)  
 E520 Reading and Writing Research in Music Education (2 cr.)  
 E521 The Children's Chorus (3 cr.)  
 E522 Music in Early Childhood (3 cr.)  
 E524 Exploratory Teaching in General Music K-12 (3 cr.)  
 E527 Advanced Instrumental Methods (3 cr.)  
 E528 Advanced Choral Methods and Materials (3 cr.)  
 E540 Topics in General Music (3 cr.)  
 E571 Kodály Concept I (3 cr.)  
 E572 Kodály Concept II (3 cr.)  
 E573 Kodály Concept III (3 cr.)  
 E580 Methods and Materials for Teaching String Music (3 cr.)  
 E581 Methods and Materials for Teaching Instrumental Jazz (3 cr.)

E582 Methods and Materials for Teaching Vocal Jazz (3 cr.)  
 E631 Quantitative Research in Music Education (3 cr.)  
 E632 Advanced Quantitative Research in Music Education (3 cr.)  
 E640 Qualitative Research in Music Education (3 cr.)  
 E645 Music Teacher Education (2 cr.)  
 E646 Seminar in String Research (3 cr.)  
 E660 Philosophical Research in Music Education (2 cr.)  
 E661 Historical Research in Music Education (2 cr.)  
 E665 Advanced Philosophical Research in Music Education (3 cr.)

### Minor in Music History and Literature

The minor in music history and literature offers a foundation in the study of musical style, repertory, analysis, and historical context.

12 credit hours selected from the following:

- M502 Composers: Variable Topics (3 cr.). May be repeated for different topics.
- M510 Topics in Music Literature (3 cr.). May be repeated for different topics.
- M525 Survey of Operatic Literature (3 cr.)
- M527 Symphonic Literature (3 cr.)
- M528 Chamber Music Literature (3 cr.)
- M650 Music in the United States (3 cr.)
- M651 Medieval Music (3 cr.)
- M652 Renaissance Music (3 cr.)
- M653 Baroque Music (3 cr.)
- M654 Classic Music (3 cr.)
- M655 Romantic Music (3 cr.)
- M656 Modern Music (3 cr.)
- M657 Music Since 1960 (3 cr.)

In exceptional circumstances, one or more enrollments in the following doctoral musicology seminars may be substituted with permission of the department chair and the director of graduate studies. Enrollment in the course requires permission of the instructor.

- M602 Seminar in Musicology: Variable Topics (3 cr.). May be repeated for different topics.
- M603 Methods of Musical Scholarship: Variable Topics (3 cr.). May be repeated for different topics.

### Minor in Music Scoring for Visual Media

The minor in music scoring for visual media provides a foundation in a broad range of topics related to scoring and orchestrating for television, films, and gaming.

K555 Topics in Music Scoring for Visual Media (6 cr.). May be repeated for different topics.

3 credits selected from

- K555 Topics in Music Scoring for Visual Media (1-3 cr.). May be repeated for different topics.
- K502 Projects in Music Scoring for Visual Media (1-3 cr.)

K611 Capstone Project in Music Scoring for Visual Media (3 cr.)

The capstone project replaces the minor field qualifying exam.

### Minor in Music Theory

The minor in music theory provides graduate-level instruction in the theory and analysis of tonal and/or post-tonal music, with the option of coursework in the pedagogy of music theory.

12 credit hours

- T551 Analytical Techniques for Tonal Music (3 cr.) or T556 Analysis of Music Since 1900 (3 cr.)
- 9 credit hours selected from the following:

T545 Introductory Analysis of Music Literature (3 cr.)  
 T550 Readings in Music Theory (3 cr.)  
 T551 Analytical Techniques for Tonal Music (3 cr.)  
 T555 Schenkerian Analysis (3 cr.)  
 T556 Analysis of Music Since 1900 (3 cr.)  
 T561 Music Theory: Variable Topics (3 cr.) May be repeated for different topics.  
 T565 Stylistic Counterpoint: Variable Topics (3 cr.) May be repeated for different topics.  
 T591 Music Theory Pedagogy (3 cr.)  
 T619 Projects and Problems in Music Theory (1-3 cr.)  
 T623 History of Music Theory I (3 cr.)  
 T624 History of Music Theory II (3 cr.)  
 T658 Seminar in Music Theory: Variable Topics (3 cr.) May be repeated for different topics.

A grade of B or higher is required in each course to be counted toward the music theory minor.

### Minor in Musicology

The minor in musicology offers an introduction to the scholarly study of music in its historical context.

12 credit hours

- M551 Introduction to Historical Musicology (3 cr.) (prerequisite: M539 Introduction to Music Bibliography)
- M602 Seminar in Musicology: Variable Topics (3–3 cr.)
- 3 credit hours selected from the following:

M602 Seminar in Musicology: Variable Topics (3 cr.)  
 M603 Methods of Musical Scholarship: Variable Topics (3 cr.)  
 graduate courses in music history and literature (3 cr.)

### Minor in Organ

The minor in organ provides advanced training in performance, with the option of coursework in organ literature and pedagogy.

Prerequisite: at least two semesters of formal organ study (with a minimum facility on both manual and pedal keyboards as judged by audition) and submission of a repertoire list (which may include technical studies, service music, hymns, etc.).

12 credit hours

- 9-12 credit hours of Q800 Organ Graduate Minor
- 0-3 credit hours selected from the following:

C504 Keyboard Skills Review (1 cr.)  
 C505 Organ Construction and Design (2 cr.)  
 C510 Service Playing Review (1 cr.)  
 C524 Organ Improvisation (2 cr.)  
 E589 Organ Pedagogy (2 cr.)

E590 Organ Pedagogy Practicum (1 cr.)  
 M675 Seminar in Organ Literature: Renaissance and Baroque (3 cr.)  
 M676 Seminar in Organ Literature: Classic and Romantic (3 cr.)  
 M677 Seminar in Organ Literature: Music since 1900 (3 cr.)  
 M678 Seminar in Organ Literature: Organ Works of J.S. Bach (3 cr.)

### Minor in Percussion

The minor in percussion provides advanced training in percussion performance, with the option of coursework in small ensembles and percussion literature.

12 credit hours

- 9-12 credit hours of D800 Percussion Graduate Minor
- 0-3 credit hours selected from the following

F550 Chamber Music (1 cr.)  
 F547 Percussion Chamber Ensemble (1 cr.)

### Minor in Piano

The minor in piano provides advanced training in piano performance, with the option of coursework in chamber music and piano literature.

12 credit hours

- 9-12 credit hours of P800 Piano Graduate Minor
- 0-3 credit hours selected from the following

M543 Keyboard Literature from 1700 to 1850 (3 cr.)  
 M544 Piano Literature from 1850 to the Present (3 cr.)  
 F520 Topics in Performance Study (1-3 cr.). Courses used must focus on collaborative or chamber music involving the piano.

### Minor in Sacred Music

The minor in sacred music provides a foundation in the study of a broad range of applied skills and/or academic subjects that relate to the practice of sacred music. Those interested in incorporating applied study must meet the requirements for a doctoral minor in that area.

12 credit hours

- 0-6 credit hours of applied study selected from the following:

G535 Master's Choral Conducting: Renaissance to 1700 (2 cr.)  
 G536 Master's Choral Conducting: 1700 to 1900 (2 cr.)  
 G537 Master's Choral Conducting: 20th Century to Today (2 cr.)  
 Q800 Organ Graduate Minor  
 V800 Voice Graduate Minor  
 Y853 Harpsichord Graduate Minor

- 6-12 credit hours selected from the following:

C504 Keyboard Skills Review (1 cr.)  
 C505 Organ Construction and Design (2 cr.)  
 C510 Service Playing Review (1 cr.)  
 C524 Organ Improvisation (2 cr.)  
 C540 The History of Christian Worship and Sacred Music (2 cr.)  
 C541 Sacred Music: Philosophy and Practice I (2 cr.)

C542 Sacred Music: Philosophy and Practice II (2 cr.)  
 E521 The Children's Chorus (3 cr.)  
 F501 Accompaniment of Baroque Music (2 cr.)  
 F502 Topics in Basso Continuo (2 cr.)  
 F503 Advanced Topics in Basso Continuo (2 cr.)  
 F531 Graduate Ear Training for Conductors (1 cr.)  
 F532 Graduate Score Reading (1 cr.)  
 G538 Choral Rehearsal Techniques (2 cr.)  
 G560 Graduate Choral Conducting (3 cr.)  
 M535 Master's Seminar in Choral Literature: Renaissance to 1700 (3 cr.)  
 M536 Master's Seminar in Choral Literature: 1700 to 1900 (3 cr.)  
 M537 Master's Seminar in Choral Literature: 20th Century to Today (3 cr.)  
 M555 Foundations in Choral Score Analysis and Preparation (3 cr.)

### **Minor in String Instruments (Violin, Viola, Violoncello, or Double Bass)**

The minor in a string instrument provides advanced training in performance on the chosen instrument (violin, viola, violoncello, or double bass), with the option of coursework in small ensembles, string literature, and string pedagogy.

12 credit hours

- 9-12 credit hours in one of the following:

S810 Violin Graduate Minor  
 S820 Viola Graduate Minor  
 S830 Cello Graduate Minor  
 S840 Double Bass Graduate Minor

- 0-3 credit hours selected from the following

F550 Chamber Music (1 cr.)  
 E503 Violin/Viola Pedagogy I (2 cr.)  
 E504 Violin/Viola Pedagogy II (2 cr.)  
 E505 Violin/Viola Pedagogy III (2 cr.)  
 E506 Cello Pedagogy (2 cr.)

### **Minor in Vocology**

The minor in vocology is for students who wish to deepen their understanding of the singing voice. The focus of the minor is on the union of voice science and practical application, both with healthy voice and injured voice.

12 credit hours

MUS E696 Voice Pedagogy: Practice (3cr.)

MUS E697 Voice Pedagogy: Repertoire (3 cr.)

SLHS S542 Care of the Professional Voice (3 cr.)

For non-voice majors: MUS E695 Voice Pedagogy: Research Foundations (3 cr.)

For voice majors: 3 credit hours selected from

- MUS F540 Postural Alignment for Musicians (1 cr.)
- MUS F541 Foundations and Applications of Mindfulness in Music (1-2 cr.)
- MUS F542 Movement for Singers (1 cr.)
- SLHS S311 Introduction to Research in Speech, Language, and Hearing Sciences (3cr.)
- SLHS S425 Topical Seminar in Speech Science: Vocal Physiology Across the Lifespan (3 cr.)

### **Minor in Voice**

The minor in voice provides advanced training in vocal performance, with the option of coursework in voice pedagogy and vocal literature.

12 credit hours

- 6 credit hours of V800 Voice Graduate Minor
- 6 credit hours selected from the following:

E594 Voice Pedagogy (3 cr.)  
 M531–M532 Song Literature III–IV (3–3 cr.)  
 M686 Solo Vocal Literature Before 1850 (3 cr.)  
 M687 Late Romantic Solo Vocal Literature (3 cr.)  
 M688 Solo Vocal Literature after 1900 (3 cr.)

For audition information, see the Voice department chairperson.

### **Minor in Wind Conducting**

The minor in wind conducting provides advanced training in conducting techniques for wind groups, along with related literature and practices.

12 credit hours

- M570 Historical Development of Wind Groups and Literature (3 cr.)
- G566 Interpretation and Conducting of Band Literature I (3 cr.)
- G567 Interpretation and Conducting of Band Literature II (3 cr.)
- 3 credit hours selected from the following:

G585 Wind Band Score Study (3 cr.)  
 F590 Techniques in Marching Band for Graduate Students (3 cr.)  
 E557 Band Arranging for Graduate Students (3 cr.)

### **Minor in Woodwind Instruments (Flute, Oboe, Clarinet, Bassoon, or Saxophone)**

The minor in a woodwind instrument provides advanced training in performance on the chosen instrument (flute, oboe, clarinet, bassoon, or saxophone), with the option of coursework in small ensembles or woodwind literature.

12 credit hours

- 6-12 credit hours in one of the following:

W810 Flute Graduate Minor  
 W820 Oboe Graduate Minor  
 W830 Clarinet Graduate Minor  
 W840 Bassoon Graduate Minor  
 W850 Saxophone Graduate Minor

- 0-6 credit hours selected from the following:

E559 Instrumental Pedagogy (1-2 cr.)  
 F550 Chamber Music (1 cr.)  
 M547 Woodwind Literature I (3 cr.)  
 M548 Woodwind Literature II (3 cr.)

### **Ph.D. Minors for Students Outside the Jacobs School of Music**

Minors in music for doctoral students outside the Jacobs School of Music may be taken within one of the established departments of the Jacobs School of Music or as an individualized minor taken in more than one area. No general entrance examinations



are required, but the director of graduate studies may require entering proficiency examinations. All minors except the individualized minor require the prior approval of the department chair. Minors, including the individualized minor, require approval by the director of graduate studies, who also determines prerequisites, minimum requirements, and the nature of any qualifying examinations. A minor in a performance area requires acceptance into a faculty studio and may require a formal departmental audition. No transfer credits will be accepted toward a music minor.

## Faculty

### Interim Dean

Jeremy Allen

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Interim Executive Associate Dean

Brenda Brenner

### Associate Dean for Instruction

Lissa Fleming May\*

### Distinguished Professors

Arnaldo Cohen, Timothy R. Noble, Menahem Pressler, André Watts

### Professors

Atar Arad, Edward Auer, Kevin Bobo, Evelyne Brancart, Betsy Burleigh, Kevin Cobb, Judah Cohen\*, Emilio Colon, Dominick DiOrio, Rodney Dorsey, Jane Dutton, David Dzubay, Eli Eban, Peter E. Ellefson, Anne Epperson, Arthur Fagen, Janette Fishell, Don Freund, Mauricio Fuks, Simin Ganatra, Brent Gault\*, , Brian Gill, Luke Gillespie, Halina Goldberg\*, Joseph Gramley, Jean-Louis Haguenauser, Patrick Harbison, Walter Huff, Grigory Kalinovskiy, Mark Kaplan, Alexander Kerr, Marianne Kielian-Gilbert\*, Eric Kim, Howard Klug, Carla Körbes, Norman Krieger, Carl Lenthe, Kathryn Lukas, Kevork Mardirossian, Dana Marsh, Lissa Fleming May\*, Andrew Mead\*, Daniel R. Melamed\*, Peter Miksza\*, Carlos Montané, Kurt Muroki, Otis Murphy, Kristina Muxfeldt\*, Emile Naoumoff, Jeffrey Nelsen, Kyra Nichols, Nigel North, Massimo M. Ossi\*, Daniel Perantoni, P. Q. Phan, Denson Paul Pollard, Gwyn Richards, John D. Rommel, Richard M. Seraphinoff, Marietta Simpson, Patricia Stiles, Konrad A. Strauss, Linda Strommen, Peter Stumpf, Elzbieta Szmyt, John Tafoya, Joey Tartell, Demondrae Thurman, Jeffrey Turner, Carol Vaness, Michael Vernon, Thomas P. Walsh, Thomas Wilkins, David Woodley, Stephen Wyrczynski, Christopher Young, Mimi H. Zweig

### Associate Professors

Kyle Adams\*, Jeremy Allen, Gary Arvin, Julia Bentley, Joanna Blendulf, Brenda Brenner\*, David Cartledge, Frank Diaz\*, Sean Dobbins, Phil Ford\*, John Gibson, Larry Groupé, Julian L. Hook\*, Brian L. Horne, Eric Isaacson\*, Roman Ivanovitch\*, Sasha Janes, Blair Johnston\*, Kathleen McLean, Roberto Plano, Lauren Kapalka Richerme\*, Thomas Robertello, Frank Samarotto\*, Julia Shaw\*, Michael Shell, Eric Smedley,

Ayana Smith\*, Michael Stucker, D. James Tagg, Russell Thomas, Aaron Travers, Peter Volpe, Brent Wallarab, Sarah Wroth, Giovanni Zanolello\*

### Assistant Professors

Chris Albanese, Allan Armstrong, Chandler Bridges, Carolann Buff, Amanda Draper\*, Michèle Duguay\*, Tiffany Galus, Andrew Goldman\*, Orit Hilewicz\*, Jason Nam, Sergio Ospina-Romero\*, John Raymond, Jillian Rogers\*, Brian Shaw\*, Chi Wang, Greg Ward

### Director of Graduate Studies

Associate Professor David Cartledge, East Studio Building JS 120, (812) 855-1738

### Courses

For a list of courses and their descriptions, see the Jacobs School of Music Bulletin.

## Mythology Studies

### College of Arts and Sciences

Departmental E-mail: [myth@indiana.edu](mailto:myth@indiana.edu)

Departmental URL: [www.indiana.edu/~myth](http://www.indiana.edu/~myth)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Ph.D. Minor in Mythology Studies

#### Course Requirements

Students must complete 12 or more graduate credit hours of appropriate courses. All courses must be approved in advance by the mythology studies advisor.

At least one of the courses must be a core course, either Folklore F545 Folk Narrative (Topic: Analysis of Myth) or Folklore F545 Folk Narrative (Topic: Cosmology and Worldview) or Classical Studies C405 Comparative Mythology. Other courses taught by participating faculty may be designated by the mythology studies advisor as fulfilling the core requirement when they provide a theoretical and methodological overview of the study of mythology.

No more than two courses may be taken in a single department. No more than 3 credit hours of directed readings can be applied to the minor.

### Grades

A minimum of B (3.0) in all courses that count toward the minor.

### Examination

None.

### Faculty

## Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Director

Associate Professor Gregory Schrempf\*

## Interdepartmental Graduate Committee on Mythology Studies

### Professors

Raymond DeMallie\* (Anthropology), Hasan El-Shamy\* (Folklore and Ethnomusicology), Robert Fulk\* (English), Kari Gade\* (Germanic Studies), David Haberman\* (Religious Studies, India Studies), William Hansen\* (Emeritus, Classical Studies, Folklore and Ethnomusicology), Robert Ivie\* (Communication and Culture), Eleanor Winsor Leach\* (Classical Studies), John McDowell\* (Folklore and Ethnomusicology)

### Associate Professors

Jeffrey Huntsman\* (Emeritus, English), Gregory Schrempf\* (Folklore and Ethnomusicology)

### Associate Faculty

Associate Professors Cynthia Bannon\* (Classical Studies), Stephanie Kane\* (Criminal Justice)

### Courses

**CLAS-C 405 Comparative Mythology (4 cr.)** P: C205, graduate standing, or consent of instructor. Advanced theoretical study of the forms and functions of classical Greek and Roman myths, including reading and evaluation of comparable myths in ancient Near Eastern cultures (Egypt, Mesopotamia, Anatolia, Canaan). Comparative reading and evaluation of selected myths from outside the Mediterranean cultural area.

### Folklore

**FOLK-F 545 Folk Narrative (3 cr.)** (Topic: Analysis of Myth) Examination of myths, folktales, legends, jokes, fables, anecdotes, personal narratives, or other forms of folk narrative. Attention given to the content, form, and functions of the narratives as well as the variety of theories and methodologies employed in their study. May be repeated for credit when topic changes.

## Near Eastern Languages and Cultures

Hamilton Lugar School of Global and International Studies

College of Arts and Sciences

Departmental E-mail: [nelc@indiana.edu](mailto:nelc@indiana.edu)

Departmental URL: <http://www.indiana.edu/~nelc/>

The Department of Near Eastern Languages and Cultures is affiliated with the Hamilton Lugar School of Global and International Studies (HLS) in the College of Arts and Sciences, dedicated to providing Indiana University graduate students with the intellectual tools they will need to live, work, and thrive in the globalized world of the twenty-first century. Degree programs

associated with HLS emphasize language proficiency, cultural competency, and in-depth training in qualitative and quantitative methodologies. HLS students enjoy unparalleled access to a stellar faculty and professional development opportunities. For further information regarding the mission, structure and resources of the Hamilton Lugar School of Global and International Studies see <http://hls.indiana.edu/>.

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

Curriculum

Courses

Crosslisted Courses  
Faculty

### Special Departmental Requirements

(See also general University Graduate School requirements.)

### Admission Requirements

International applicants (non-U.S. citizens, non green-card holders) whose native language is not English are required to submit TOEFL scores only. U.S. applicants (U.S. citizens or green-card holders) or students whose native language is English are required to submit GRE scores only. Applicants from any country of which the principal language is not English must take the TOEFL, even if they consider themselves to have native or near-native fluency in English. Consult with the Director of Graduate Studies for more information.

Exceptions:

1. International applicants who have their bachelor's degree from an institution of which English is the language of instruction may submit a GRE score in lieu of a TOEFL. However, it may be to their advantage to submit a TOEFL if their GRE Verbal Reasoning score is below the fiftieth percentile. Consult the Director of Graduate Studies or Chair.
2. U.S. citizens who have been educated abroad (e.g., dual nationals from the Arab world) and have their bachelor's degree from non-U.S., non-English language institutions, should normally submit TOEFL scores only. Consult the Director of Graduate Studies or Chair.

### Master of Arts in Near Eastern Languages and Cultures (NELC)

**Course Requirements (See special requirements below for the NELC Egyptology track and for the dual O'Neill SPEA M.P.A./NELC M.A.)**

Students must take a minimum of 36 credit hours of graduate courses in Near Eastern studies. These can be courses offered by the NELC department itself or, with the approval of the NELC Director of Graduate Studies and Chair, courses offered by other departments or schools appropriate to the course of study of the student.

Each student's curriculum must be approved by his/her academic advisor (the Director of Graduate Studies).

1. 6 credits of the required course work must be fulfilled by the courses in two of the following fields: the ancient (pre-Islamic), pre-modern (medieval), or modern (1500 CE to present) history of the Middle East, chosen with the approval of the Director of Graduate Studies.
2. At least 3 credit hours of the course work must be fulfilled by a methodology / theory course from a discipline in the student's personal academic interest, selected with the approval of the Director of Graduate Studies.
3. At least 12 credit hours of coursework in Arabic, Hebrew, Persian, Turkish language(s). For this requirement, students choose one of the two options below:

1. "One major language" track: In this option, students are required to complete 12 credits in their chosen Middle Eastern (ME) Language. Out of these 12 credits, at least 6 credits must be obtained through language study at the fourth-year Advanced Level. In the case of Arabic, this is Advanced Arabic III (3 credits) and Advanced Arabic IV (3 credits). In the case of other major NELC languages, the equivalent must be completed. Students who begin their M.A. program at the fourth-year level or above may, with the prior approval of the course instructor and Director of Graduate Studies, count non-language courses in which they make substantial use of their major NELC language toward the 12 credits. These are courses in which the student reads primary sources in the chosen language. In the case of Hebrew, language credits can be fulfilled with a combination of Modern and Biblical Hebrew courses. The combination of courses and required levels must be approved by the Director of the Hebrew Language Program, housed in NELC.
2. "Two languages" track: In this option, in addition to a major ME language as described above, the student also chooses a second ME language and is required to fulfill 6 credits at the Intermediate (second-year) Level or above.

## Examinations

At the conclusion of their coursework, the following additional requirements must be met:

1. Students who are not native speakers of their major language will take a two-hour comprehensive exam in their major language, which will (a) test all four language skills (reading, writing, listening comprehension, and speaking) and (b) include a translation exercise. Students who are native speakers of their major language will normally take a comprehensive language exam in their minor language at the highest level attained, but at least Intermediate II. Students who are native speakers of their major language and who are following the "one major language" (terminal M.A.) track, and who have not studied a minor language, will take a two-hour written examination in a subject area to be agreed upon with the Director of Graduate Studies.

2. Take a two-hour comprehensive exam in history covering two of the following three areas: ancient, pre-modern/medieval, and/or modern Middle East.
3. Submit a suitable term or seminar paper substantially revised and expanded, which must demonstrate the following:
  1. a clear understanding of the chosen topic;
  2. the ability to conceive and carry out an original project of a scholarly nature, including the use of primary and secondary texts in the original language, where appropriate;
  3. an advanced level of critical or theoretical insight;
  4. command of academic English;
  5. competence in the proper use of research and bibliographic tools.

The paper must be modeled, both in format and in intellectual substance, on articles that would be acceptable for publication in a scholarly journal of an appropriate sub-discipline of Near Eastern Studies.

Students must notify the Director of Graduate Studies of their intention to take the M.A. examinations before the end of the preceding semester. The examining committee will be composed of three faculty members, including the faculty members responsible for the language exam, the history exam, and the individual research paper. If additional faculty readers are required to fill the committee, they will be appointed by the Director of Graduate Studies. All examiners and readers must be members of the NELC Graduate Faculty; any exceptions must be approved in writing by the Department Chair. The exams should be taken and the paper submitted in the final semester of the student's coursework or shortly thereafter, in accordance with the University Graduate School rules.

Students who fail an exam may be offered one opportunity to retake it. Those who do not successfully pass the exams by the end of their sixth semester may be placed on probation and subsequently dismissed from the program for lack of progress as described in the "Academic Regulations" section of the Bulletin.

## Special Requirements for the M.A. Track in Egyptology

- 1) The M.A. requires a minimum of 36 graduate-level credits in ancient Egyptian language, civilization, and appropriate electives, including up to six credits of M.A. thesis research.
- 2) An M.A. thesis is required.
- 3) Students will demonstrate reading proficiency in scholarly French or German by the end of the first year, either by completing a 492-level course, or by passing the proficiency examination administered by the Bloomington Evaluation Services and Testing office. Note that 400-level language courses taken to acquire and demonstrate modern-language proficiency do not count towards the 36 graduate credits required for the M.A.
- 4) At the conclusion of their course work, students will take written examinations in Egyptian history, (two hours) and in Egyptian religion (two hours), and take a translation examination in Middle Egyptian (two hours). A student may request a waiver on one, two, or all three of the required final examinations if he or she earned

an A in the relevant courses, and if she or he has a cumulative GPA of 3.5 or better in the program as of the end of the semester before graduation is expected. This request will be considered at the end of the fourth week of the student's final semester, and may be approved if the student's M.A. thesis is well in hand and if she or he is performing at a high level in all current classes.

**Model two-year curriculum** (substitutions based on previous coursework or student interest must be approved by the track advisor.)

Year 1 - Fall: NELC-E500; Elementary Hieroglyphic Egyptian I (3 credits). NELC-E505; Seminar in History of Ancient Egypt (3 credits). Elective chosen in consultation with program advisor. Recommended subjects include Coptic; Classical Greek; Biblical Hebrew; Arabic; anthropology/archaeology; historical linguistics; ancient history; art history (3 credits). Spring: NELC-E550; Elementary Hieroglyphic Egyptian II (3 credits). NELC-E510; Seminar in Religions of Ancient Egypt (3 credits). Elective chosen in consultation with program advisor. Recommended subjects include Coptic; Classical Greek; Biblical Hebrew; Arabic; anthropology/archaeology; historical linguistics; ancient history; art history, (3 credits).

Year 2 - Fall: NELC-E600; Intermediate Middle Egyptian (3 credits). NELC-E660; Demotic I; Grammar and Script (3 credits). NELC-N710; Thesis research (3 credits). Spring: NELC-E650; Late Egyptian: Grammar and Texts (3 credits). NELC-E670; Demotic II; Persian and Ptolemaic Texts (3 credits). NELC-N710; Thesis research (3 credits).

### **Special Requirements for the Dual M.P.A./M.A. in Near Eastern Languages and Cultures and the School of Public and Environmental Affairs**

The Department of Near Eastern Languages and Cultures and the O'Neill School of Public and Environmental Affairs jointly offer a three-year program that qualifies students for a dual master's degree. The first semester of course work toward the dual degree may be completed in the O'Neill School of Public and Environmental Affairs to complete prerequisite courses that are only offered in the fall semester. Under this program, the degrees must be awarded simultaneously.

### **Admission Requirements**

Same as for the Master of Arts degree except that application must also be made to the O'Neill School of Public and Environmental Affairs for study toward the Master of Public Affairs degree. Students must be accepted by both units to be admitted to the dual degree program. Students may apply for admission to both programs simultaneously. Alternatively, students may apply first for the M.A. in Near Eastern Languages and Cultures and apply for the O'Neill School of Public and Environmental Affairs M.P.A. program during their first year of study; they can then enter the dual degree program in their second year of study.

Students pursuing a dual Master of Public Affairs/Master of Arts in Near Eastern Languages and Cultures will complete a total of 66 credit hours: 36 credit hours in the Master of Public Affairs program plus 30 credit hours in Near Eastern Languages and Cultures.

## **Public and Environmental Affairs Course Requirements**

### **M.P.A. Core (18 credits)**

- SPEA V502 Public Management
- SPEA V506 Statistical Analysis for Effective Decision Making
- SPEA V517 Public Management Economics
- SPEA V540 Law and Public Affairs
- SPEA V560 Public Finance and Budgeting
- SPEA V600 Capstone in Public and Environmental Affairs

### **M.P.A. Concentration (18 credits)**

Students will complete 18 credit hours pertaining to one of the specialized concentration areas of the MPA, with courses to be chosen in consultation with a SPEA faculty advisor.

### **NELC Requirements; Course Work, Research Language, Paper, and Examinations**

#### **M.A. in Near Eastern Languages and Cultures (30 credits)**

Students will complete 12-18 credits in graduate-level courses on the culture, history, politics, and religious traditions of the Middle East.

Students will complete 12-18 credit hours of graduate level courses in an appropriate Middle Eastern language. Students should complete their language to at least the third year level (i.e., in the case of Arabic, to the level of A670, Advanced Arabic II), and must take no fewer than 12 credits of language courses. For students who begin their program with a high level of proficiency in their major language (whether attained through previous instruction or because they are native speakers), the 12-hour minimum in language can include seminars or research courses with substantial content in the major language, to be approved by the NELC Director of Graduate Studies.

Students will submit a term or seminar paper (i.e., a paper originally written in one of their courses) substantially revised and expanded, and meeting the following criteria:

1. A clear understanding of a chosen topic
2. Demonstrated ability to conceive and carry out an original project of a scholarly nature, including the use of primary and secondary texts in the original language, where appropriate
3. An advanced level of critical or theoretical insight
4. Command of expository English
5. Competence in the proper use of research and bibliographic tools

The paper should be suitable in form and content for publication in a professional journal in a recognized sub-field of Middle Eastern Studies.

Students will undergo two, two-hour comprehensive examinations in Middle Eastern language, history and culture. Students who are not native-speakers of their major language will undergo a four-skill language examination, along with a two-hour written examination in Middle Eastern history. Students who are native speakers of their major language will undergo a two-hour history examination and a second two-hour examination in a

field to be determined in consultation with Near Eastern Languages and Cultures Director of Graduate Studies.

**Select List of Representative NELC Courses that may Count towards the Dual Degree:**

- Arabic 600 Intermediate Arabic I
- Arabic 660 Advanced Arabic I
- The Cultural History of the Middle East
- Researching Politics of Muslim Countries
- States and Societies in Muslim Central Asia and the Middle East
- Islam and Politics in Muslim Central Asia & Middle East
- Representations of Islam and Muslims in Ethnographic Literature of Central Asia and the Middle East
- Islam and Modernity
- African and Middle Eastern Narratives

**Note on Tuition Costs:**

Students in this dual-degree program may find variance in their tuition charges. There is no standardized method of coding students in dual-degree programs. The O'Neill School of Public and Environmental Affairs and the College of Arts and Sciences charge different graduate tuition rates per credit hour. The school in which you register each semester may depend on your funding. It is the student's responsibility to consult with both units to determine in which school they should register each semester.

For more information see: [https://bulletins.iu.edu/iu/spea/2018-2019/programs/bloomington/mpa\\_dual/other.shtml](https://bulletins.iu.edu/iu/spea/2018-2019/programs/bloomington/mpa_dual/other.shtml).

**Doctor of Philosophy Degree in Near Eastern Languages and Cultures (NELC)**

**Admission Requirements**

The Graduate Record Examination General Test (GRE) is required for domestic applicants or international applicants from countries of which the principal language is English (e.g., the U.K., Canada, Australia). International applicants from any country of which the principal language is not English are required to submit TOEFL scores. Students should hold an M.A. for admission to the Ph.D. program. Students holding an M.A. from another institution should include a writing sample as part of their application for admission. Students with an M.A. from the Indiana University Department of Near Eastern Languages and Cultures (NELC) will be asked to submit a statement of their Ph.D. plans as part of their admission dossier to the Ph.D. program. Successful completion of the NELC M.A. does not guarantee admission to the NELC Ph.D. program.

**Course Requirements**

A minimum of 90 credit hours of graduate work (including credits earned for the M.A.), plus dissertation. The students' courses must be approved by the Ph.D. advisor and the Director of Graduate Studies.

**Language Requirements**

Three languages are required for the NELC Ph.D.:

1. The major NELC language (normally Arabic, Hebrew, Persian, or Turkish): a minimum of 12 credit hours beyond fourth-year proficiency as demonstrated by prior coursework or by a placement examination to be administered upon matriculation.
2. The minor NELC language (normally, Arabic, Hebrew, Persian, or Turkish): minimum of 6 credit hours at the third-year level or above in courses approved by the Director of Graduate Studies. Biblical and Modern Hebrew at the elementary and intermediate levels can be combined to satisfy the third-year level requirement with the approval of the Director of Graduate Studies.
3. A European research language (normally French or German), tested according to the rules of the Graduate College.

For students who begin their program with a high level of proficiency in their major or minor language (whether attained through previous instruction or because they are native speakers), the 12 or 6-hour minimum in the language can be satisfied by seminars or research courses with substantial content in the major or minor language, to be approved by the NELC Director of Graduate Studies and documented in writing by the course instructor. The choice of languages must be pertinent to the student's graduate curriculum and approved by the Director of Graduate Studies. Other languages may be substituted where deemed appropriate by the Director of Graduate Studies.

**Outside Minor**

Students are required to minor in an outside department or program. Students must fulfill the relevant department's rules for outside minors. The choice of minor should be made in consultation with the student's graduate advisor and the Director of Graduate Studies.

**Qualifying Examination**

Students will be examined on one major and two minor NELC fields. The three fields should be approved by the Director of Graduate Studies. Written examinations will be given by at least two professors, the major field lasting for three hours, and the minor field exams for two hours each. Upon successful completion of the written examinations, a student will take the oral examination within four weeks of the written examination. These examinations may be retaken once in whole or in part at the discretion of the examination committee. The minor department may choose to give an exam.

**Final Examination**

The final examination will consist of an oral defense of the dissertation conducted by the members of the student's research committee.

**Ph.D. Minor in Near Eastern Languages and Cultures**

Students from other departments are welcome to minor in Near Eastern Languages and Cultures as part of their doctoral program. To do so, they are required to take at least 12 credit hours of graduate-level course work, to be approved by the Director of Graduate Studies so as to form a coherent program. Students must maintain a 3.0 grade point average for the minor as a whole. Up to 12 credit hours may be transferred from other institutions



toward the NELC outside Ph.D. minor, but at least 6 credit hours must be completed in the IU NELC department.

### Termination of Enrollment in the Doctoral Program

If a doctoral student fails the written qualifying examinations twice, fails the oral qualifying exam twice, falls below a 3.5 average, or fails to complete the written and oral examinations by the end of the approved length of time, the director of graduate studies, in consultation with the research committee, can initiate steps to terminate the student's enrollment in the program.

### Faculty

Curriculum

Courses

Crosslisted Courses

Faculty

### Chairperson

Professor Stephen Vinson\*

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Core Faculty

#### Professors

Asma Afsaruddin\*, Salman H. Al-Ani\*, Salih Altoma\* (Emeritus), Stephen Katz\*, M. Nazif Shahrani\*, Suzanne Stetkevych\* (Emerita), Stephen Vinson\*, John Walbridge\*

#### Associate Professors

Asaad Alsaleh\*, Daniel Caner\*, Aziza Khazzoom\*, Nader Morkus\*, Abdulkader Sinno\*

#### Assistant Professors

##### Senior Lecturers

Cigdem Balim\* (Emerita), Zaineb Istrabadi

##### Lecturers

Iman Alramadan, Attia Youseif

### Adjunct Professors

Devin DeWeese\* (Emeritus, Central Eurasian Studies), Henry Glassie\* (Emeritus, Folklore and Ethnomusicology), John Hanson\* (History), Herbert Marks\* (Comparative Literature), Thomas Mathiesen\* (Emeritus, Jacobs School of Music), Consuelo Lopez-Morillas\* (Emerita, Spanish and Portuguese), Paul Losensky\* (Central Eurasian Studies, Comparative Literature), Samuel Obeng\* (Linguistics), Karen Rasler\* (Emerita, Political Science), Ruth Stone\* (Emerita, Folklore and Ethnomusicology), Frances Trix\* (Emerita, Anthropology, Linguistics), Timothy William Waters\* (Maurer School of Law)

### Adjunct Professors of Practice

Feisal A. R. Istrabadi (International Studies)

### Adjunct Associate Professors

Heather Akou (School of Art, Architecture + Design), Jane Goodman (Anthropology), Margaret Graves\* (History of Art), Sarah Imhoff (Religious Studies), R. Kevin Jaques\*

(Religious Studies), David McDonald\* (Folklore and Ethnomusicology), Kaya Sahin\* (History)

### Adjunct Assistant Professors

Nur Amali Ibrahim (Religious Studies)

### Director of Graduate Studies

Asaad Alsaleh

### Courses

Curriculum

Courses

Crosslisted Courses

Faculty

### Arabic Language and Literature

- NELC-A 500 Elementary Arabic I (3 cr.)
- NELC-A 501 Accelerated Arabic I (4 cr.)
- NELC-A 550 Elementary Arabic II (3 cr.)
- NELC-A 551 Accelerated Arabic II (4 cr.)
- NELC-A 555 Summer Intensive Arabic I (6 cr.)
- NELC-A 560 First Year Arabic (3 cr.)
- NELC-A 600 Intermediate Arabic I (3 cr.) P: A500-A550.
- NELC-A 610 Arabic Dialects I (3 cr.) P: A150/A550 or N182.
- NELC-A 620 Arabic Dialects II (3 cr.) P: NELC A610.
- NELC-A 650 Intermediate Arabic II (3 cr.) P: A500-A550.
- NELC-A 660 Advanced Arabic I (3 cr.) P: A500-A550.
- NELC-A 665 Arab Women (4 cr.) interim approval
- NELC-A 670 Advanced Arabic II (3 cr.) P: A500-A550.
- NELC-A 675 Minorities in the Middle East (4 cr.) interim approval
- NELC-A 680 Advanced Arabic III (3 cr.) P: Open to students with B or higher from A670.
- NELC-A 690 Advanced Arabic IV (3 cr.)
- NELC-A 698 Teaching Arabic as a Foreign Language I (1 cr.)
- NELC-A 699 Teaching Arabic as a Foreign Language II (1 cr.)
- NELC-N 502 Qur'anic Arabic I (3 cr.)
- NELC-N 510 Arabic Composition I (3 cr.) P: Consent of instructor.
- NELC-N 512 Arabic Grammar (3 cr.)
- NELC-N 523 Conversational Arabic I (3 cr.)
- NELC-N 524 Introduction to Arabic Linguistics (3 cr.)
- NELC-N 529 Arabic Phonetics and Phonology (3 cr.)

- NELC-N 542 Modern Arabic Fiction (3 cr.)
- NELC-N 550 Research in Classical Arabic Texts (3 cr.)
- NELC-N 552 Qur'anic Arabic II (3 cr.) C: Not currently being offered.
- NELC-N 555 Multimedia Arabic (3 cr.)
- NELC-N 590 Directed Readings in Arabic (1-6 cr.)
- NELC-N 593 Individual Readings in Classical Arabic Literature (1-6 cr.)
- NELC-N 594 Individual Readings in Modern Arabic (1-6 cr.)
- NELC-N 598 Readings in Arabic Language and Linguistics (1-6 cr.) C: Not currently being offered.
- NELC-N 607 Seminar in Classical Arabic Literature (3 cr.) Not currently being offered; currently taught as NELC-N 707.
- NELC-N 609 Seminar in Modern Arabic Literature (3 cr.) Not currently being offered; currently taught as NELC-N 709.
- NELC-N 670 Qur'an Commentaries (3 cr.)
- NELC-N 690 Research in Classical Arabic Texts (3 cr.) Topics vary
- NELC-N 701 Topics in Arabic Literature (2-3 cr.) May be repeated for credit when topic varies.
- NELC-N 707 Seminar in Classical Arabic Literature (3-4 cr.) P: Ability to read classical Arabic Texts.
- NELC-N 709 Seminar in Modern Arabic Literature (3-4 cr.) P: Ability to read classical Arabic.

### **Egyptology**

- NELC-E 500 Elementary Middle Egyptian I (3 cr.)
- NELC-E 502 Elementary Middle Egyptian II (3 cr.)
- NELC-E 505 Ancient Egyptian History and Civilization (3 cr.)
- NELC-E 510 Religions of Ancient Egyptian (3 cr.)
- NELC-E 550 Elementary Hieroglyphic Egyptian II (3 cr.)
- NELC-E 577 Field Experience (3 cr.)
- NELC-E 590 Directed Readings in Egyptology (1-6 cr.)
- NELC-E 600 Intermediate Middle Egyptian (3 cr.)
- NELC-E 650 Late Egyptian - Grammar and Texts (3 cr.)
- NELC-E 660 Demotic Egyptian I – Grammar and Script (3 cr.)
- NELC-E 670 Demotic Egyptian II - Persian and Ptolemaic Texts (3 cr.)
- NELC-E 695 Graduate Topics in Egyptology (1-3 cr.)

### **Hebrew Language and Literature**

- NELC-B 501 Elementary Biblical Hebrew I (3 cr.)

- NELC-B 502 Elementary Biblical Hebrew II (3 cr.)
- NELC-B 503 Intermediate Biblical Hebrew I (3 cr.)
- NELC-B 504 Intermediate Biblical Hebrew II (3 cr.)
- NELC-H 501 Elementary Hebrew I (3 cr.)
- NELC-H 502 Elementary Hebrew II (3 cr.) P: Grade of C or higher in H501 or equivalent proficiency.
- NELC-H 503 Intermediate Modern Hebrew I (3 cr.)
- NELC-H 504 Intermediate Modern Hebrew II (3 cr.)
- NELC-H 505 Advanced Modern Hebrew I (3 cr.)
- NELC-H 506 Advanced Modern Hebrew II (3 cr.)
- NELC-H 575 Introductory Readings in Hebrew Literature (3 cr.)
- NELC-H 590 Intensive Elementary Hebrew (4 cr.)
- NELC-N 501 Seminar in Judaic Literature I (3 cr.)
- NELC-N 586 Medieval Hebrew Literature (3 cr.)
- NELC-N 587 Modern Hebrew Literature in English (3 cr.) C: Not currently being offered. [JSTU-L 380]
- NELC-N 588 Recent Hebrew Literature in English (3 cr.) [JSTU-L 385]
- NELC-N 591 Directed Readings in Hebrew (1-6 cr.)
- NELC-N 675 The Kibbutz in Fact and Fiction (3 cr.)
- NELC-N 687 Modern Hebrew Literature in Hebrew (3 cr.) P: grade of C or better in any Hebrew course above H506 or equivalent.
- NELC-N 691 Research in Medieval Hebrew Texts (3 cr.)
- NELC-N 708 Seminar in Judaic Literature (4 cr.)

### **Islamic Studies/Middle Eastern Cultures and Civilizations/Middle Eastern Literatures/Middle Eastern Religions**

- NELC-N 500 Turkish Literature in Translation (3 cr.)
- NELC-N 503 Muhammad: Life of the Prophet (3 cr.)
- NELC-N 511 Foreign Study in Near Eastern Languages and Cultures (3 cr.) \*\*These courses are eligible for a deferred grade.
- NELC-N 540 Directed Readings in Persian Language (1-4 cr.)
- NELC-N 545 Introduction to the Ancient Near East (3 cr.)
- NELC-N 565 Introduction to Islamic Civilization (3 cr.)
- NELC-N 570 Koranic Studies (3 cr.)
- NELC-N 592 Directed Readings in Persian (1-6 cr.)
- NELC-N 595 War and Peace in the Islamic Tradition (3 cr.)
- NELC-N 596 Islam and Modernity (3 cr.)

- NELC-N 597 Peoples and Cultures of the Middle East (3 cr.) Credit given for only one of ANTH E600, CEUS R552, or NELC N597.
- NELC-N 599 Directed Readings in Turkish (1-6 cr.)
- NELC-N 600 Topics in Turkish Literature (3 cr.)
- NELC-N 625 Ottoman Empire & Modern Turkey (3 cr.)
- NELC-N 640 Prophets, Poets, and Kings: Iranian Civilization (3 cr.)
- NELC-N 650 Modern Iran (3 cr.)
- NELC-N 650 Rise of Eastern Rome (3 cr.)
- NELC-N 672 Hadith Sciences (3 cr.)
- NELC-N 675 The Kibbutz in Fact and Fiction (3 cr.)
- NELC-N 680 Islamic Philosophy (3 cr.)
- NELC-N 681 War and Peace in the Islamic Tradition (3 cr.)
- NELC-N 682 Islam and Modernity (3 cr.)
- NELC-N 685 Persian Mystical Literature in Translation (3 cr.)
- NELC-N 692 Research in Classical Persian Texts (3 cr.) [CEUS-T 659]
- NELC-N 695 Graduate Topics in Near Eastern Languages and Cultures (1-4 cr.) Variable topics; may be repeated under different topics for credit.
- NELC-N 696 Teaching Less Commonly Taught Languages (3 cr.)
- NELC-N 710 M.A. Thesis (arr. cr.) \*\*These courses are eligible for a deferred grade.
- NELC-N 713 Advanced Readings in Bible and Near Eastern Studies (4 cr.)
- NELC-N 720 M.A. Thesis (arr. cr.) \*\*These courses are eligible for a deferred grade.
- NELC-N 790 War and Peace in the Islamic Tradition (3 cr.)
- NELC-N 800 Seminar in Turkish Literature: Ottoman Verse and Prose (3 cr.)
- NELC-N 810 Ph.D. Thesis (arr. cr.) \*\*These courses are eligible for a deferred grade.

### Crosslisted Courses

Curriculum

Courses

Crosslisted Courses

Faculty

### Central Eurasian Studies (CEUS)

- CEUS-R 551 Prophets, Poets, and Kings: Iranian Civilization (3 cr.)
- CEUS-R 552 Peoples and Cultures of the Middle East (3 cr.)
- CEUS-R 554 Persian Literature in Translation (3 cr.)

- CEUS-R 559 Topics in Iranian Studies (3 cr.)
- CEUS-R 580 Literature of the Ottoman Court in Translation (3 cr.)
- CEUS-R 582 Cultural History of the Ottoman Empire and Modern Turkey (3 cr.)
- CEUS-R 583 Ten Sultans, One Empire: Ottoman Classical Age 1300-1600 (3 cr.)
- CEUS-R 586 Islam and Islamism, and Modernity in Turkey (3 cr.)
- CEUS-R 587 Contemporary Turkey (3 cr.)
- CEUS-R 589 Topics in Turkish Studies (3-4 cr.)
- CEUS-R 599 Topics in Central Eurasian Studies (3 cr.)
- CEUS-R 650 Advanced Readings in Iranian Studies (1-6 cr.)
- CEUS-R 680 Advanced Readings in Turkish Studies (1-6 cr.)
- CEUS-R 711 Religions with focus on Islam (3 cr.)
- CEUS-R 750 Seminar in Iranian Studies (3 cr.)
- CEUS-R 780 Seminar in Turkish Studies (3 cr.)

### Folklore and Ethnomusicology (FOLK)

- FOLK-F 545 Folk Narrative (3 cr.)
- FOLK-F 617 Middle Eastern Folklore/Folk Music (3 cr.)
- FOLK-F 677 Popular Culture & Politics of the Middle East (3 cr.)
- FOLK-F-740 History of Ideas in Folklore/Ethnomusicology (3 cr.)

### History (HIST)

- HIST-E 536 History of East Africa (3 cr.)
- HIST-E 538 History of Muslim West Africa (3 cr.)
- HIST-H 695 Colloquium in African History (4 cr.)

### Jewish Studies (JSTU)

- JSTU-H 500 Topics in Jewish Studies (3 cr.)
- JSTU-H 520 Colloquium in Jewish Studies (4 cr.)
- JSTU-H 595 Directed Readings in Jewish Studies (1-4 cr.)

### Religious Studies (REL)

- REL-R 553 Studies in Islam (3 cr.)
- REL-R 610 Studies in Biblical Literature and Religion (4 cr.)
- REL-R 644 Critical Issues in Islamic Studies (4 cr.)
- REL-R 663 Textual Interpretation (4 cr.)

## Neuroscience

### College of Arts and Sciences

Departmental E-mail: [neurosci@indiana.edu](mailto:neurosci@indiana.edu)

Departmental URL: <https://neuroscience.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

Faculty

## Degrees Offered

### Master of Science and Doctor of Philosophy Special Program Requirements

(See also general University Graduate School requirements.)

#### Master of Science Degree

The MS in Neuroscience is available to graduate students in the Program in Neuroscience who opt to leave the program prior to the completion of the doctorate degree. The student must be in good standing and have completed the 30 credit hours and a research thesis.

#### Course Requirements

A total of 30 credit hours including the N500-N501 core sequence, 3 semesters of N650, a course in professional ethics, and 20 credit hours of graduate course work as approved by the student's advisory committee and the Director of Graduate Studies. A minimum of three credit hours should be research credits, to reflect work on thesis research. Usually at least 20 credit hours of graduate course work is selected from the offerings listed by the Program in Neuroscience or cross-listed with other departments, but this is not required if the advisory committee and Director of Graduate Studies agree that the credits taken are relevant to the student's major area of study. Beyond the six core courses and minimum of three research credits, additional credits (to count toward the required total of 30 credit hours) can be additional courses or additional research credits. A minimum of nine credit hours of coursework (excluding thesis research credits) must be numbered 500 or above. Any course requirements discussed above can be waived; such waivers must be approved by the department's Director of Graduate Studies and the University Graduate School. A grade of B (3.0) or higher in each course is required.

#### Master's Thesis

Required. The student's advisory committee will participate in the approval of the thesis. The student is required to hold an oral defense of the thesis with the advisory committee. The outcome of the defense (pass or fail) must be communicated to the Director of Graduate Studies by the student's advisor. The preferred method is to submit the thesis to the University Graduate School electronically. Instructions and deadlines are available on the University Graduate School website.

In instances where shortcomings are apparent (in coursework or the thesis), the student may be required to complete additional coursework or assignments, as determined by the advisory committee in consultation with the Director of Graduate Studies. For example, additional work on the research project or an additional course to provide deeper training may be required. Students must be consistently involved in productive research throughout their course of graduate study. Students who are determined, by their faculty advisory committee, not to be making adequate research progress may be subject to academic probation and dismissal.

At the time when a student decides to leave the doctoral program and seek a Master's degree instead, the timeline for completing the requirements for the Master's degree will be discussed. In most instances, the student will have one to two semesters to complete the Master's degree.

## Doctor of Philosophy Degree

The program leading to the Ph.D. degree is designed to give students the opportunity to develop the technical skills and conceptual framework necessary for a successful research career in neuroscience. Research should be viewed as the student's greatest challenge and the major focus of the student's energy. Training emphasis focuses on: Molecular and Cellular Neuroscience; Behavioral Neuroscience; Cognitive and Computational Neuroscience; and Clinical and Translational Neuroscience. Faculty come from the Departments of Biology, Computer Science (School of Informatics and Computing), Kinesiology (School of Public Health), Medical Sciences (School of Medicine), Physics, Psychological and Brain Sciences, Speech and Hearing Sciences, and Visual Sciences (School of Optometry). Students can also draw upon course offerings through the Center for the Integrative Study of Animal Behavior, the Cognitive Science Program, as well as the Department of Chemistry.

#### Admission Requirements

Undergraduate education that includes an adequate background in chemistry, mathematics, and the biological and behavioral sciences are urged to apply. Students with undergraduate concentrations in other areas of the natural sciences, computer science, or engineering also are encouraged to apply. Preference will be given to applicants with a background in laboratory research and with strong letters of recommendation. Applications must include departmental form, three letters of recommendation, and the undergraduate transcript. If English is not your native language you are required to submit a recent TOEFL score. The deadline for domestic and international applicants is December 1.

#### Course Requirements

A total of 90 credit hours, including dissertation, is required for the Ph.D. An individual program of study is planned for each student in consultation with the student's advisory committee. The aim is to provide each student with a solid background in neuroscience as well as the training necessary to supplement the student's particular research area. Program in Neuroscience requires 19 credit hours of coursework. Required courses from the 19 credit hours include the following: N500 (3 credits), N501 (3 credits), N650 (4 semesters at 1 credit per semester), plus other courses chosen by the student's committee and the student. In addition, completion of the major requires completion of a course (at least 1 credit) that includes professional ethics; this course would be selected in consultation with the graduate student's committee (examples of suitable courses include, but are not limited to, PSY P-595, COGS Q-510, BIOL Z-620, and VSCI V-792). N500 and N501 must be completed by the fifth semester of residence. Courses may be selected from those listed by the Program in Neuroscience or cross-listed with other departments, divisions, or special programs. Course work must be completed with an average of B+ (3.3) or above. No grades below B- (2.7) may be counted toward degree requirements.

#### Advisory Committee

Students must identify a major advisor and have an advisor throughout the course of their graduate studies.

Student must form an advisory committee by the end of their first year; later in their course of study, students must form a research (dissertation) committee. The student's committee (advisory or research) shall consult with the student, at least once per year, to help determine the student's course of graduate study, develop a research program, approve the student's course selections, and review the student's progress in all areas (for example, but not limited to: completion of required courses, course grades, adequacy of teaching, and research progress). Following each yearly meeting a written report of the meeting must be filed with the Director of Graduate Studies. The student's committee will determine whether the student is making adequate progress in all areas. Should the advisory (or research) committee determine that a student is not making adequate progress in any area, this may be grounds for eliminating a student's department funding, probation, or dismissal from the program.

### Qualifying Examination

To remain in good standing and be admitted to doctoral candidacy, students must pass a written and oral examination before the end of their fifth semester in residence. Students with a double major may request one additional year before they take the qualifying examination. Students failing the qualifying examination twice will be dismissed from the program.

### Final Examination

In addition to the oral defense of the dissertation before the research committee, a public research seminar is required.

### Ph.D. Minor in Neuroscience

Students in other departments and programs who elect to minor in the Program in Neuroscience must complete the N500-N501 core sequence and at least 6 credit hours of graduate course work selected from the offerings listed by the Program in Neuroscience or cross-listed with other departments. A grade of B (3.0) or higher in each course is required.

### Faculty

Faculty

### Director

Professor Joshua W. Brown

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Linda and Jack Gill Scholar of Biomolecular Science

Andrea G. Hohmann\* (Psychological and Brain Sciences), Cary Lai\* (Psychological and Brain Sciences), Hui-Chen Lu\* (Psychological and Brain Sciences), Kenneth Mackie\* (Psychological and Brain Sciences), W. Dan Tracey\* (Biology)

### Distinguished Professors

Ellen D. Ketterson\* (Biology), Ken Mackie\* (Psychological and Brain Sciences), David B. Pisoni\* (Psychological and Brain Sciences), Richard M. Shiffrin\* (Psychological and

Brain Sciences), Olaf Sporns\* (Psychological and Brain Sciences)

### Robert H. Shaffer Chair

Olaf Sporns\* (Psychological and Brain Sciences)

### Luther Dana Waterman Professor

Richard M. Shiffrin\* (Psychological and Brain Sciences)

### Naus Family Chair of Addiction Research

István Katona\* (Psychological and Brain Sciences)

### Provost Professor

Randall D. Beer\* (Cognitive Science Program), Jonathon Crystal\* (Psychological and Brain Sciences), Olaf Sporns\* (Psychological and Brain Sciences), Peter M. Todd\* (Psychological and Brain Sciences)

### James H. Rudy Professor

Bennett I. Bertenthal\* (Psychological and Brain Sciences), Jorge V. José\* (Physics)

### Chancellor's Professor

David B. Pisoni\* (Psychological and Brain Sciences)

### Eleanor Cox Riggs Professor

Aina Puce\* (Psychological and Brain Sciences)

### W.K. Estes Professor

Michael Jones\* (Psychological and Brain Sciences)

### Sharon Stephens Brehm Endowed Professor

Brian D'Onofrio\* (Psychological and Brain Sciences)

### Professors

Jeffrey Alberts\* (Psychological and Brain Sciences), Randall D. Beer\* (Cognitive Science & Informatics), John M. Beggs\* (Physics), Bennett I. Bertenthal\* (Psychological and Brain Sciences), Heather B. Bradshaw\* (Psychological and Brain Sciences), Joshua W. Brown\* (Psychological and Brain Sciences), Stephen A. Burns\* (Vision Sciences, School of Optometry), Thomas A. Busey\* (Psychological and Brain Sciences), T. Rowan Candy\* (Vision Sciences, School of Optometry), David Crandall\* (Computer Science), Jonathon Crystal\* (Psychological and Brain Sciences), Brian D'Onofrio\* (Psychological and Brain Sciences), Robert de Ruyter\* (Physics), Gregory E. Demas\* (Biology), Joseph Farley\* (Psychological and Brain Sciences), Peter R. Finn\* (Psychological and Brain Sciences), Preston E. Garraghty\* (Psychological and Brain Sciences), William P. Hetrick\* (Psychological and Brain Sciences), Andrea Hohmann\* (Psychological and Brain Sciences), Laura Hurley\* (Biology), Karin Harman James\* (Psychological and Brain Sciences), Thomas W. James\* (Psychological and Brain Sciences), Michael Jones\* (Psychological and Brain Sciences), Jorge V. José\* (Physics), István Katona\* (Psychological and Brain Sciences), Ellen D. Ketterson\* (Biology), David M. Kocaja\* (Kinesiology), Justin Kumar\* (Biology), Cary Lai\* (Psychological and Brain Sciences), Jennifer J. Lentz\* (Speech and Hearing Sciences), Hui-Chen Lu\* (Psychological and Brain Sciences), Ken Mackie\* (Psychological and Brain Sciences), Armin P. Moczek\*



(Biology), David Pisoni\* (Psychological and Brain Sciences), Robert Potter\* (Communication Sciences), Aina Puce\* (Psychological and Brain Sciences), Dale R. Sengelaub\* (Psychological and Brain Sciences), Richard Shiffrin\* (Psychological and Brain Sciences), Olaf Sporns\* (Psychological and Brain Sciences), William H. Swanson\* (School of Optometry), Peter Todd\* (Psychological and Brain Sciences), W. Dan Tracey\* (Biology), Cara L. Wellman\* (Psychological and Brain Sciences)

### Associate Professors

Hannah Block\* (Kinesiology), Daniel P. Kennedy\* (Psychological and Brain Sciences), Anne C. Krendl\* (Psychological and Brain Sciences), Nicholas L. Port\* (Vision Sciences, School of Optometry), Anne L. Prieto\* (Psychological and Brain Sciences), Kimberly A. Rosvall\* (Biology), William P. Shofner\* (Speech and Hearing Sciences), G. Troy Smith\* (Biology), Jason Tennessen\* (Biology), Robert H. Withnell\* (Speech and Hearing Sciences), Justin Wood (Informatics), Andrew Zelhof\* (Biology)

### Assistant Professors

Manuel Baizabal\* (Biology), Richard Betzel\* (Psychological and Brain Sciences), Silvina Ferradal\* (Intelligent Systems Engineering), Eleftherios Garyfallidis\* (Informatics and Computing), Feng Guo\* (Intelligent Systems Engineering), Eduardo Izquierdo\* (Cognitive Science), Keisuke Kawata\* (Kinesiology), Amanda Mejia\* (Statistics), Ehren Newman\* (Psychological and Brain Sciences), Patrick Quinn\* (Applied Health Science, Public Health), Brielle Stark\* (Speech and Hearing), Zoran Tiganj\* (Computer Science), Krista Wisner (Psychological and Brain Sciences), Joshua Ziarek\* (Biochemistry)

### Adjunct Professors

David Landy\* (Psychological and Brain Sciences), Sharlene D. Newman\* (Psychological and Brain Sciences)

### Emeriti

Sue Carter\* (Biology and the Kinsey Institute), James C. Craig\* (Psychological and Brain Sciences), Brian F. O'Donnell\* (Psychological and Brain Sciences), Julia R. Heiman\* (Psychological and Brain Sciences and the Kinsey Institute), Larry Humes\* (Speech and Hearing), George V. Rebec\* (Psychological and Brain Sciences), Dolores M. Schroeder\* (Anatomy), Alfred Strickholm\* (Physiology), Meredith West\* (Psychological and Brain Sciences)

### Senior Scientists

Hu Cheng (Psychological and Brain Sciences), Andrew King (Psychological and Brain Sciences), Yvonne Lai\* (Psychological and Brain Sciences), Benjamin M. Ramsden\* (Psychological and Brain Sciences)

### Associate Scientists

Sachiko Koyama (Medical Sciences Program), Stephanie Mauthner (Biology), Alex J. Straiker (Psychological and Brain Sciences)

### Assistant Scientists

Jui-Yen Huang (Psychological and Brain Sciences), Anna Kalinovsky (Psychological and Brain Sciences), Wei Tang (Computer Science)

### Academic Advisor

(812) 855-9118

### Courses

#### Faculty

- NEUS-N 500 Neural Science I (3 cr.) Basic introduction and current trends in cellular neurophysiology, neurocytology, synaptic processes, and neuroanatomy.
- NEUS-N 501 Neural Science II (3 cr.) Continuation of Neural Science I emphasizing higher integrative processes such as perception, cognition, and memory. Special emphasis will be placed on timely topics and topics of particular relevance to members of the class.
- NEUS-N 510 Cellular and Molecular Neuroscience (3 cr.) Examines the properties and behavior of neurons and glia, the principal cells of the nervous system. The function of neural cells, the molecules involved in these functions, and the organization of molecular components required to generate cellular activity will be considered.
- NEUS-N 550 Seminar on Sensorimotor Neuroplasticity (2-3 cr.) P: Graduate status and consent of instructor. This course is intended to introduce students to the research methodologies and experimental findings of studies addressing sensorimotor brain plasticity. While the specific content of the course may vary across semesters, the overarching goal is to provide students with a firm grounding in the primary literature representing this area of research so that they become familiar with the mechanisms of neural plasticity from system wide to molecular levels.
- NEUS-N 566 Developmental and Cellular Neuroscience (3 cr.) P: Knowledge in basic neuroscience and biology. This course examines the vertebrate nervous system from a cellular and molecular perspective. It covers the unique structural and functional properties of both neurons and glia, explores in depth the development of the nervous system, and covers at a molecular level the biological basis for learning and memory.
- NEUS-N 611 Neural Bases of Visual Sensation, Perception, and Cognition (3 cr.) Basic neuroanatomy and neurophysiology of the visual system. Correlations will be made with current, biologically-based cognitive models of vision. The goal of this course is to integrate neural and cognitive approaches to the problems of vision.
- NEUS-N 612 Ion Channels and Receptors (3 cr.) P: Graduate status and consent of instructor. Molecular, biophysical, and biochemical analysis of the major molecules responsible for neural excitability and synaptic transmission: receptor-coupled ion channels, voltage-dependent ion channels, G-protein coupled receptors, transporters, signal transduction pathways, synaptic vesicle-associated proteins, cytoskeletal proteins, classical and novel neurotransmitters and modulators.
- NEUS-N 613 Neural Mechanisms of Hearing (3 cr.) P: Graduate status and consent of instructor. Review of anatomy and physiology of inner ear and central auditory pathways. Special attention

to current research on the neural basis of auditory discrimination.

- NEUS-N 650 Neuroscience Colloquium Series (1 cr.)P: Graduate status and consent of instructor. Colloquia in this series cover a broad range of topics in neuroscience research.
- NEUS-N 700 Readings-Nervous System (arr. cr.)Reading in special topics with guidance from a member of the faculty.
- NEUS-N 800 Research (arr. cr.)

### Cross-Listed Courses

Faculty

#### Animal Behavior

- A501 Seminar in the Integrative Study of Animal Behavior (3 cr.) (Depending on topic)
- A502 Research and Professional Ethics in Bio-Behavioral Sciences (1 cr.)

#### Biology

- Z620 Special Topics in Zoology (depending on topic)

#### Cognitive Science

- Q551 Brain and Cognition (3 cr.)
- Q610 Networks of the Brain (3 cr.)

#### Medical Sciences

- A530 Special Topics (depending on topic)
- P531 Human Physiology I (3 cr.)
- P532 Human Physiology II (5 cr.)

#### Physics

- P582 Biological and Artificial Neural Networks (3 cr.)
- P583 Signal Processing and Information Theory in Biology (3 cr.)

#### Psychological and Brain Sciences

- P417 Animal Behavior (3 cr.)
- P423 Human Neuropsychology (3 cr.)
- P436 Laboratory in Animal Learning and Motivation (3 cr.)
- P504 Learning and Motivation (3 cr.)
- P514 Methods in Biopsychology (2 cr.)
- P526 Neurobiology of Learning and Memory (3 cr.)
- P527 Developmental Psychobiology (3 cr.)
- P546 Neurophysiological Techniques: Theory and Methods (3 cr.)
- P560 An Embodied Approach to the Development of Brain and Behavior (3 cr.)
- P569 Stress Effects on Brain and Behavior (3 cr.)
- P637 Neurobiology of Addictions (3 cr.)
- P650 Neuroimaging: Theory and Methods (3 cr.)
- P657 Topical Seminar (1-4 cr.) (depends on subject)
- P667 Neuropsychopharmacology (3 cr.)
- P669 Neurobiology of Behavioral Disorders (3 cr.)
- P717 Evolutionary Bases of Learning (3 cr.)

#### School of Public Health

- C518 The Nature of Addictive Disorders (3 cr.)
- K542 Neuromuscular Control of Movement (3 cr.)
- K543 Cortical Control of Human Movement (3 cr.)

- K641 Topics in Motor Integration (3 cr.) (P: SPH-K 541)
- K690 Seminar in Human Performance (1-3 cr.)

#### Speech, Language, and Hearing Sciences

- S501 Neural Bases of Speech and Language (3 cr.)
- S513 Speech Anatomy and Physiology
- S515 Topical Seminar (2 cr.) (Conditional)
- S531: Cognitive-Communication Disorders in Brain Injury and Disease (3 credits)
- S537 Diagnosis and Management of Adult Aphasia (3 cr.)
- S540 Voice Disorders (3 cr.)
- S545 Adult Cognitive-Communication Disorders (2 cr.)
- S571 Auditory Anatomy & Physiology (3 cr.)
- S574 Central Auditory Nervous System
- S678 Intro to Psychoacoustics (3 cr.)

#### Visual Sciences

- V514 Neuroanatomy (1.5 cr.)
- V648 Neurophysiology of Vision (1 cr.)
- V767 Electrophysiology of Vision (3 cr.)
- V768 Special Topics in Vision Science (1-4 cr.) (Depending on topic)

## Philosophy

### College of Arts and Sciences

Departmental URL: [www.philosophy.indiana.edu](http://www.philosophy.indiana.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Arts and Doctor of Philosophy

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

#### Admission

Applicants must take the Graduate Record Examination General Test. Those who have an inadequate background in philosophy may, with the approval of their faculty advisor, enroll in P590 for supplemental work, provided that the number of graduate credits so acquired does not exceed 9 credit hours. Upon admission, a graduate major in philosophy will be assigned a departmental faculty advisor who, in conjunction with the director of graduate studies, will help plan the student's program of study.

#### Master of Arts Degree

The M.A. degree is available to philosophy doctoral students who do not already have an M.A., and who have otherwise satisfied the requirements for the M.A., as well as to graduate students who are already enrolled in another program at Indiana University who wish to pursue an M.A. in philosophy as a complement to their research in their major department.

## Course Requirements

A total of 30 credit hours, at least 20 credit hours of which must be in courses given in the philosophy department. These must include at least one course in each of four subject areas: history of philosophy, metaphysics and epistemology, logic, and value theory. P590 may not be used to satisfy the distribution requirement. No more than six hours in P590 may count toward the 20 hours required in philosophy. P804 and P805 do not count toward the credit hours required in philosophy.

### Grades

A minimum grade of B (3.0) is required in each course that counts toward the degree.

## Doctor of Philosophy Degree Course Requirements

A total of 90 credit hours, including dissertation hours (P804 and P805), of which a minimum of 9 credit hours is required.

### Grades

A student must receive a grade of B or better in any (graded) course that receives credit toward the 90 credit hours required for the Ph.D.

## Foreign Language Requirement

There is no general foreign language requirement for the Ph.D. However, a student's Qualifying Committee or Dissertation Committee may require the student to achieve proficiency in a foreign language relevant to the student's research and may set the level of proficiency to be attained and the means of establishing that the required level has been attained. A student should consult with the director of graduate studies about whether he or she will need competence in a foreign language, and this consultation should begin in the student's first year, to allow adequate time for the student to develop competence.

## Proseminar

The proseminar is taken in the first fall semester of enrollment in the program. The proseminar is a variable topics course which requires writing a paper each week for the first 10 to 12 weeks of the term and presenting to the seminar.

## Distribution Requirements

Nine units of distribution requirements are required.

For the purposes of stating these requirements, philosophy is considered as falling into four areas. Each of these areas has an Area Committee to administer the requirements in that area.

1. *Metaphysics and Epistemology* has four subareas: (i) metaphysics, (ii) epistemology, (iii) philosophy of language, philosophy of logic, or philosophy of mathematics, (iv) philosophy of mind and action.
2. *Logic*
3. *History of Philosophy*: Ancient, medieval, modern, recent.
4. *Value Theory*: Ethics, social and political philosophy, legal philosophy, aesthetics.

Each graduate student is required to concentrate in at least one area and satisfy distribution requirements in all four, though some exceptions are possible for students pursuing an interdisciplinary track (see below).

Unless stated otherwise, courses used to satisfy the distribution requirements in an area will count towards the concentration requirements for that area.

*Metaphysics and Epistemology, Logic*: Students are to satisfy a disjunctive requirement regarding Metaphysics and Epistemology and Logic:

1. *Metaphysics and Epistemology*: Three graduate courses. The three should be in different subareas of Metaphysics and Epistemology, as defined above. At least one of the three courses must be on the list of automatically approved courses. P590s will not count toward the Metaphysics and Epistemology Distribution Requirement. **AND** Logic: One graduate logic course. The student must demonstrate a thorough understanding of first-order logic. Successful completion of P505 will be taken as demonstrating such understanding. **OR**
2. *Metaphysics and Epistemology*: Two graduate courses. The two should be in different subareas of Metaphysics and Epistemology. At least one of the two courses must be on the list of automatically approved courses. P590s will not count toward the Metaphysics and Epistemology Distribution Requirement. **AND** Logic: Two graduate logic courses. The student must demonstrate a thorough understanding of first-order logic. Successful completion of P505 will be taken as demonstrating such understanding.

*History of Philosophy*: (Three units) A unit in history can consist of any of the following: a graduate course, a written paper on a topic in one of the four historical periods (ancient, medieval, modern, and recent), a written examination on a topic in one of the four periods, or a written examination covering a broad range within the history of philosophy. At least one unit must be in ancient or medieval history and one in post-medieval history. The third "wild card" unit in history may be in any of the four historical periods. It may also be such a course as history of ethics, history of aesthetics, history of logic, etc.—provided that such course is approved by the History Area Committee. In addition to the automatically approved courses listed below, P710 can count for any of the periods, depending on its content. Students must seek approval for P710 from the History Area Committee, and the Area Committee will decide whether the course counts based on course content and the student's competence in the philosophy of the relevant period. Other courses may be counted depending on Committee approval.

*Value Theory*: (Two units) Two graduate level courses, at least one in ethics. At least one course should be either P540, P541, or P740. The second course should come from the list of automatically approved courses below. Students may petition to substitute for one or possibly both of the courses a course not on the list of automatically approved courses, but there is no presumption that any other courses will count. The decision whether to count any other courses will be made on the basis of what other courses the student has taken, the opportunities the student has had for taking automatically approved courses, and the student's Area of Concentration. Two

courses with the same number can count toward the Distribution Requirement provided their course content is sufficiently different; students must petition for the second course to count.

Distribution requirements should normally be satisfied by the end of the student's second year, but in all cases should be satisfied by the end of the student's third year of graduate study.

### Interdisciplinary Track Distribution Requirements

An interdisciplinary track is considered to be 18 credit hours in a department or program outside of philosophy of importance to the student's area of specialty. It is usually in the area of the student's minor. Graduate students pursuing an interdisciplinary track may request an ad hoc exemption of one or two of the above nine units of the department's standard distribution requirements. The written request should be made to the Director of Graduate Studies before the end of the student's second year. A good case must be made for the usefulness of the outside work being proposed, either for the student's dissertation or for other career objectives. The specific courses being taken, as well as the distribution units to be dropped, must be described in the application. If the request is to drop two units from one area or to drop one unit from Logic under option (1) of the disjunctive requirement, the Director of Graduate Studies will seek the approval of the Area Committee before granting the request. If the student on an interdisciplinary track is given a one unit exemption in any Area, then the expectation is that the remaining unit (or units) that count toward the distribution requirements in that Area will be courses on the list of automatically approved courses. (If more than three credits of the 18 interdisciplinary track credits are from cross-listed philosophy courses, the above exemption will not be granted; if one to three credits are from such courses, then the exemption cannot be granted for more than one unit of the distribution requirements.)

### Concentration Requirements

Concentration requirements in each of the four areas are defined below. Unless stated otherwise, courses used to satisfy the distribution requirements in an area will count toward the concentration requirements for that area. A student must achieve an average of A- in the courses that count towards the Concentration Requirement.

*Metaphysics and Epistemology: (Four units)* Four courses from at least three different sub-areas. At least two of the four courses must be on the list of automatically approved courses below. At most one P590 will count toward the M & E Concentration Requirement, with high standards (for M & E area centrality, rigor and breadth of reading, and written work). At most one course outside the philosophy department (including courses taken at an institution other than Indiana University) will count, with high standards (for clear philosophical content, M & E area centrality, rigor and breadth of reading, and written work). (The caliber of the department at another institution at which a course is taken will be an important consideration in granting petitions for approval of courses taken in other institutions.)

*Logic: (Four units)* Students concentrating in this area are required to do the following: (i) Take at least four courses in logic/formal areas of philosophy. (Note: P505

will not count for the requirement.) These courses must be well distributed; students are advised to consult the Logic Committee to ensure this. (ii) Show mastery of the material of P505/506. This requirement will be deemed as satisfied if a student has taken courses equivalent to P505/P506 with a grade of A- or better.

*History of Philosophy: (Four units)* The history units are as defined above, except that the "wild card" is not an option here. Students specializing in history must pass four regular history units, at least one in each of the four historical periods. In addition to the automatically approved courses listed below, P710 can count for any of the periods, depending on its content. Students must seek approval for P710 from the History Area Committee, and the Area Committee will decide whether the course counts based on course content and the student's competence in the philosophy of the relevant period. Other courses may be counted depending on Committee approval.

*Value Theory: (Four units)* Four courses. At least one course should be P540, P541, or P740. At least one course should be in aesthetics, political philosophy, or philosophy of law. Students must take two or more courses in a single sub-area known as "the field of emphasis," and no more than one course in the field of emphasis may be taken outside the philosophy department. Students may petition to substitute a course not on the list of automatically approved courses below, but there is no presumption that any other courses will count.

### Automatically Approved Courses

All of the following courses automatically count towards the Distribution and Concentration Requirements for the Area and Subarea under which they are listed, subject to the general description above of the requirements in each Area. Courses on the list may also satisfy the Distribution and Concentration Requirements for Areas or Subareas other than the ones under which they are listed. Approval for satisfying the Distribution or Concentration Requirements in an Area or Subarea other than the one for which the course is listed must be sought from the relevant Area Committee, either prior to taking the course or afterward:

Metaphysics and Epistemology – Metaphysics: P560, P571; Epistemology: P562; Philosophy of Language, Philosophy of Logic, and Philosophy of Mathematics: P520, P551, P552, P720; Philosophy of Mind: P561, P570; P730 and P760 would count toward metaphysics, epistemology, or either, depending on content. P750 counts as either logic or philosophy of mathematics, depending on content.

Logic – Logic: P505 (counts toward the Distribution Requirement in Logic, but not the Concentration Requirement), P506, P550, P751; P750 counts as either logic or philosophy of logic and mathematics, depending on content.

History of Philosophy – P710; Ancient: P511, P512; Medieval: P515; Modern: P522; Recent: P526, P530, P531, P535.

Value Theory – Ethics: P540, P541, P740; Social and Political Philosophy: P543, P544, P743; Legal Philosophy: P545; Aesthetics: P546.



Approval for satisfying the Distribution or Concentration Requirements for any course not on this list—including P590 and courses given in other departments—must be sought from the relevant Area Committee, either prior to taking the course or afterward. Approval after the fact will only be granted in exceptional circumstances. No course may be counted as satisfying more than one unit of one Distribution or Concentration Requirement. Area Committees decide whether to approve outside courses in part on the basis of whether the student has acquired a grounding in the Area by taking the sum total of the courses proposed to satisfy the Requirement. Because of this, it could happen that one student receives approval for a course and another student is denied approval for the same course. It is expected that a graduate student will use no more than two P590 courses that are taken concurrently with an undergraduate course, to satisfy the Distribution and Concentration requirements as a whole, and no more than one such P590 course in any given area. No course (understood as a particular course, not a course number) may be counted as more than one unit of one distribution or concentration requirement.

### Qualifying Exam

The qualifying exam consists in an essay, together with an oral exam, on a topic that the student plans to pursue further in the dissertation. The qualifying exam will test whether the student is ready to write a dissertation on the chosen topic. Students who have passed the qualifying exam and have satisfied the course and language requirements are ready to be nominated for candidacy. To schedule the qualifying exam in a term, the student must be enrolled concurrently in the dissertation prospectus course, P804. Successfully passing the qualifying exam, both the oral and written components, is necessary and sufficient for passing the dissertation prospectus course. The dissertation prospectus course and qualifying exam should be taken no later than the second semester of the third year of fulltime study (or in the sixth semester of fulltime study). This may be postponed only with the approval of the qualifying exam committee chair and the Director of Graduate Studies. If a student fails to pass the qualifying exam during the term in which he or she is first enrolled in P804, he or she will be placed on academic probation. He or she may retake the exam in conjunction with the prospectus course in the immediately following semester (excluding summer terms). If the student does not pass the qualifying exam on the second try, the student will be dismissed from the doctoral program. If a student fails to enroll in the dissertation prospectus course (and hence fails to take the qualifying exam) by the end of the third year of fulltime study, and a delay has not been approved by the chair of the qualifying exam committee and the Director of Graduate Studies, the student will be placed on academic probation. The student will then be required to take the dissertation prospectus course the immediately following semester (excluding summer terms). If the student does not pass the qualifying exam in that semester, the student will be dismissed from the doctoral program, without an opportunity to retake the examination.

### Dissertation Prospectus

A one- or two-page plan of the proposed dissertation that is submitted to the graduate school after it has been approved by the dissertation committee.

### Dissertation Colloquium Requirement

Students who have advanced to candidacy and are in residence are members of and required to participate in a dissertation work-in-progress colloquium. The dissertation colloquium overseen by a committee consisting of the Director of Graduate Studies as chair and the chairs of dissertation committees in any year. Members will be required to give at least one presentation in the colloquium each year on their dissertation research. Attendance by other members of the colloquium group is required. The schedule of meetings in a given year will be of a frequency consonant with its purpose, and otherwise as agreed upon by the directing committee. A student who fails to fulfill the requirement may be placed on academic probation at the discretion of the Director of Graduate Studies and the chair of the student's dissertation committee.

### Dissertation Defense

The dissertation defense is a final oral examination based on the completed dissertation.

### Ph.D. Minor in Philosophy

Doctoral students outside the department may minor in philosophy by completing 12 credit hours of graduate-level philosophy courses with a B (3.0) average or higher. No more than 9 credit hours may be taken as P590, and no more than 6 credit hours may be transfer credit hours originally earned at other universities. The program must be approved by the director of graduate studies of the Department of Philosophy. Students planning to take P590 as part of their program must, in addition, obtain consent to do so from the instructor of that course.

### Ph.D. Minor and Graduate Area Certificate in Pure and Applied Logic

The Department of Philosophy participates in the Program in Pure and Applied Logic, along with the Departments of Computer Science, Linguistics, and Mathematics. For details of the requirements for the Logic Minor and the Logic Certificate, see <http://www.indiana.edu/~iulgl/>.

Philosophy Ph.D. students may minor in logic, provided that (1) no courses are double-counted for major and minor, (2) at least three of the minor courses are taken outside the Department of Philosophy, and (3) the courses constituting the minor are approved by the Philosophy Logic Area Committee.

### Faculty

#### Chairperson

Kirk Ludwig\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Oscar R. Ewing Professor

Michael Dunn\* (Emeritus), Frederick F. Schmitt\*

#### Rudy Professors

Marcia Baron\*, Karen Hanson\* (Emerita)



## Chancellor's Professor

Michael Morgan\* (Emeritus)

## Hall's Professor

Allen Wood

## Professors

Marcia Baron\*, Nino Cocchiarella\* (Emeritus), J. Michael Dunn\* (Emeritus), Gary Ebbs\*, Paul D. Eisenberg\* (Emeritus), Milton Fisk\* (Emeritus), Karen Hanson\* (Emerita), Mark Kaplan\* (Emeritus), Adam Leite\*, Kirk Ludwig\*, David Charles McCarty\*, Michael McRobbie\*, Michael L. Morgan\* (Emeritus), Timothy O'Connor\*, Frederick F. Schmitt\*, Sandra Shapshay\*, Paul Vincent Spade\* (Emeritus), Joan Weiner\* (Emerita), Allen Wood\*, Rega Wood

## Associate Professors

Kate Abramson\*, Dennis Senchuk\* (Emeritus)

## Assistant Professors

Matthew Adams, Vera Flocke, Katy Meadows

## Adjunct Professors

Barry Bull\* (Education), James Hart\* (Emeritus, Religious Studies), Douglas Hofstadter\* (Informatics), Jeffrey Isaac\* (Political Science), Oscar Kenshur\* (Emeritus, Comparative Literature), Noretta Koertge\* (Emerita, History and Philosophy of Science), Gerald Larson\* (Emeritus, Religious Studies), Daniel Leivant\* (Informatics), Elisabeth Lloyd\* (History and Philosophy of Science), Larry Moss\* (Mathematics), William Rasch\* (Germanic Studies), Jutta Schickore\* (History and Philosophy of Science), John Walbridge\* (Near Eastern Languages and Cultures)

## Adjunct Associate Professors

Jordi Cat\* (History and Philosophy of Science), Judy Failer\* (Political Science), Robert Eno\* (Emeritus, East Asian Languages and Cultures), Amit Hagar\* (History and Philosophy of Science), Luise Prior McCarty\* (Education), Aaron Stalnaker\* (Religious Studies)

## Director of Graduate Studies

Gary Ebbs\*, Sycamore Hall 117, (812) 855-7800

## Courses

### History

#### Ancient

- **PHIL-P 511 Plato (3 cr.)**
- **PHIL-P 512 Aristotle (3 cr.)**
- **PHIL-P 595 Intensive Reading: Ancient Philosophy from the Greek or Latin Texts (arr. cr.)** Substantive philosophical topics investigated directly from Greek or Latin texts. Reading knowledge of ancient Latin or Greek required. May be repeated for credit.

#### Medieval

- **PHIL-P 515 Medieval Philosophy (3 cr.)**
- **PHIL-P 596 Intensive Reading: Medieval Philosophy from the Sources (arr. cr.)** Substantive philosophical topics investigated directly from Latin

or Hebrew texts. Reading knowledge of medieval Latin or Hebrew required. May be repeated for credit.

#### Modern

- **PHIL-P 522 Topics in the History Modern Philosophy (3 cr.)** May be repeated twice with consent of instructor(s).
- **PHIL-P 597 Intensive Reading: Modern Philosophy from the Sources (arr. cr.)** Substantive philosophical topics investigated directly from modern foreign language texts. Reading knowledge of language or languages involved is required. May be repeated for credit.

#### Recent

- **PHIL-P 526 Nineteenth-Century Philosophy (3 cr.)** Selected topics in nineteenth-century philosophy.
- **PHIL-P 530 Twentieth-Century Analytic Philosophy I (3 cr.)** Foundations of analytic philosophy in Frege, Russell, and Moore.
- **PHIL-P 531 Twentieth-Century Analytic Philosophy II (3 cr.)** Logical atomism and logical positivism.
- **PHIL-P 532 Twentieth-Century Analytic Philosophy III (3 cr.)** Topics in post-positivist 20th century analytic philosophy.
- **PHIL-P 535 Phenomenology and Existentialism (3 cr.)** Selected topics in phenomenology and existentialism.
- **PHIL-P 748 Seminar in American Philosophy (3 cr.)** Selected topics in American Philosophy

#### History Seminar

- **PHIL-P 710 Seminar: Topics in History of Philosophy (3 cr.)** Selected topics from ancient, medieval, or modern philosophy. May be repeated.

### Value Theory

#### Ethics

- **PHIL-P 540 Contemporary Ethical Theories (3 cr.)** Fundamental problems of ethics in contemporary analytic philosophy.
- **PHIL-P 541 Selected Topics in the History of Ethics (3 cr.)** Selected topics in the history of ethics, ancient, medieval, or modern.
- **PHIL-P 740 Seminar: Ethical Theory (3 cr.)** Selected topics in ethical theory.

#### Social and Political Philosophy

- **PHIL-P 543 Contemporary Social and Political Philosophy (3 cr.)**
- **PHIL-P 544 Selected Topics in History of Social and Political Philosophy (3 cr.)** Selected topics in the history of social and political philosophy, ancient, medieval, or modern.
- **PHIL-P 545 Legal Philosophy (3 cr.)** Selected topics in philosophy of law.
- **PHIL-P 743 Seminar: Social and Political Theory (3 cr.)** Selected topics in social and political theory.

#### Aesthetics

- **PHIL-P 546 Philosophy of Art (3 cr.)** Selected topics in classical and/or contemporary aesthetics.

## Logic and M&E

### Logic & Philosophy of Mathematics

- **PHIL-P 350 Logic of Sets (3 cr.)**
- **PHIL-P 505 Logical Theory I (3 cr.)** P: P250 or equivalent. A close study of mathematical logic at the beginning graduate level, including syntactic and semantic (proof-theoretic and model-theoretic) treatments of the first-order propositional and predicate calculi, together with full proofs of soundness, completeness, and compactness for those calculi.
- **PHIL-P 506 Logical Theory II (3 cr.)** P: P505 or equivalent. A detailed metamathematical study of incompleteness, undefinability, and undecidability results first proved by Gödel, Tarski, and Church, together with introductions to recursive function theory and to nonstandard models of arithmetic.
- **PHIL-P 550 Systems of Modal Logic (3 cr.)** P: P506 or some proof-oriented mathematics course, or consent of instructor. Formal semantical and syntactical analysis of modal concepts, including epistemic and temporal modalities, and also dynamic logic.
- **PHIL-P 551 Philosophy and Foundations of Mathematics (3 cr.)** P: P505. Philosophical and mathematical investigations into the foundations of mathematics. Topics may include logicism, intuitionism, formalism, the nature of mathematics, mathematical entities, and mathematical truth.
- **PHIL-P 552 Philosophy of Logic (3 cr.)** P: P251 or consent of instructor. Philosophical issues on the nature of logic, alternative logics, the ontological commitments of logic, the analytic-synthetic dichotomy, the analysis of logical truth, etc. History of logic.
- **PHIL-P 750 Seminar: Logical Theory (3 cr.)** Selected problems in the interpretation and application of logical systems. Topics such as model theory, nonstandard logics, and theory of meaning will be discussed.
- **PHIL-P 751 Seminar: Logic (3 cr.)** Selected topics in advanced logic; e.g., set theory, recursive function theory, foundations of mathematics.

### Metaphysics

- **PHIL-P 560 Metaphysics (3 cr.)** In-depth discussion of representative contemporary theories in metaphysics.
- **PHIL-P 571 Philosophy of Nature (3 cr.)** In-depth study of representative contemporary theories of space, time, causality, action, dispositions, and particulars.

### Theory of Knowledge

- **PHIL-P 562 Theory of Knowledge (3 cr.)** Contemporary issues in the theory of knowledge.
- **PHIL-P 730 Seminar: Contemporary Philosophy (3 cr.)** Issues in contemporary philosophy.

### Philosophy of Language

- **PHIL-P 520 Philosophy of Language (3 cr.)** Selected topics in the philosophy of language.

- **PHIL-P 720 Seminar: Philosophy of Language (3 cr.)** Advanced topics in the philosophy of language; e.g., reference, truth and meaning, nature of language.

### Philosophy of Mind

- **PHIL-P 561 Philosophy of Mind (3 cr.)** Selected topics in the philosophy of mind.
- **PHIL-P 570 Philosophical Psychology (3 cr.)** Selected topics in philosophical psychology.

### General M&E Seminar

- **PHIL-P 760 Seminar: Metaphysics and Epistemology (3 cr.)** Advanced topics in metaphysics, epistemology, philosophy of mind and action.

### Philosophy of Science

- **PHIL-X 456 Historical Development of Philosophy of Science (3 cr.)**
- **PHIL-X 551 Survey of the Philosophy of Science I (3 cr.)**
- **PHIL-X 552 Survey of the Philosophy of Science II (3 cr.)**
- **PHIL-P 553 Philosophy of Science (3 cr.)** The aim of this course is to gain a thorough understanding of the basic issues in the philosophy of science. Attention will be given to issues such as the cognitive significance of theories, the scientific method (hypothesis formation, theory construction, and testing), research paradigms, reductionism, and social epistemology.
- **PHIL-X 571 Research Topics in the Philosophy of Science (1-3 cr.)**
- **PHIL-X 600 Advanced Readings Course (arr. cr.)** \*\*These courses are eligible for a deferred grade.
- **PHIL-X 654 Seminar: Philosophy of the Social Sciences (4 cr.)**
- **PHIL-X 683 Philosophical Problems of Quantum Mechanics (4 cr.)**
- **PHIL-X 691 Seminar: Philosophical Problems of Space and Time I (4 cr.)**
- **PHIL-X 692 Seminar: Philosophical Problems of Space and Time II (4 cr.)**
- **PHIL-X 755 Special Topics in the Philosophy of Science I (2-5 cr.)**
- **PHIL-X 756 Special Topics in the Philosophy of Science II (2-5 cr.)**

### Special Research

- **PHIL-P 590 Intensive Reading (1-3 cr.)** A tutorial course involving in-depth consideration of a specific philosophical area of problem or author. May be repeated for credit.
- **PHIL-P 804 Dissertation Prospectus Research (3 cr.)**
- **PHIL-P 805 Doctor's Thesis in Philosophy (arr. cr.)** \*\*These courses are eligible for a deferred grade.
- **PHIL-G 901 Advanced Research (6 cr.)**

## Physics

### College of Arts and Sciences

Departmental E-mail: [gradphys@indiana.edu](mailto:gradphys@indiana.edu)

**Departmental URL:** <http://www.iub.edu/~iubphys/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

## Curriculum

### Degrees Offered

Master of Science, Master of Arts for Teachers, and Doctor of Philosophy. The department also participates in the Ph.D. programs in astrophysics, chemical physics, and mathematical physics (described elsewhere in this bulletin).

### Special Departmental Requirements

(See also general University Graduate School requirements.)

### Grades

B average (3.0) required. See special requirement under "Master of Science Degree" for courses numbered below 501 that are to be counted toward that degree.

### Master of Science Degree in Physics Admission Requirements

Physics P201, P202, P301, P309, P331, P332, and P340 (or equivalents); Mathematics M211-M212, M311 (or equivalents). Deficiencies must be removed without graduate credit.

### Course Requirements

A total of 30 credit hours, 20 in physics, of which at least 14 credit hours must be in physics courses numbered 501 or above. Seminars, research, and reading courses may not be counted toward this 14 credit hour requirement. Physics courses numbered below 501 that are listed in this bulletin may count toward the 30 credit hour requirement only if passed with a grade of B (3.0) or above.

Option 1. Students may meet the department requirements for a research-based M.S. degree.

### Thesis

Not required.

### Final Examination

Option 2. Written. May substitute research requirements (see above) May be taken only twice.

### Master of Science Degree in Beam Physics and Technology Admission Requirements

Same as for Master of Science degree.

### Course Requirements

A total of 30 credit hours with a grade point average of B or above, including the following: 3 to 6 credit hours of graduate-level "Classical Mechanics" and "Electromagnetism" courses with a grade of B or above or P570 "Classical Mechanics and Electromagnetism in

Accelerators" offered by the U.S. Particle Accelerator School (USPAS); 3 credit hours of P570 "Accelerator Physics" or P570 "Linear Accelerator" and 3 credit hours of P571 "Laboratory hands-on" or P571 "Computational Methods" offered by the USPAS; 12 credit hours of courses at the 500 level or above; 3 to 9 credit hours of P802 Master's thesis. A grade point average of 3.0 or better must be maintained in the courses satisfying the 30 credit hour requirement. In particular, both senior-level classical mechanics and electromagnetism (or equivalents) must be passed with a grade of B (3.0) or above.

### Thesis

Required.

### Final Examination

Either a defense of the thesis or a written final examination is required, and should take place at Indiana University. The written examination may be substituted for the defense only with the permission of the thesis committee. The defense of the thesis will follow the same guidelines as the Master of Science thesis of the Indiana University Graduate School.

### Master of Arts Degree for Teachers Admission Requirements

8 credit hours of undergraduate physics courses.

### Course Requirements

20 credit hours in physics courses numbered P300 or higher, selected from the course listings that follow (recommended: P301, P309, P331, P332, P360, P451, P453, P454), the remaining 16 credit hours in graduate education and in mathematics, astronomy, chemistry, or computer science. Candidates for the M.A.T. must obtain a teacher's certificate (or license) by the time they complete the M.A.T.

### Dual Master of Science Degree in Physics and Master of Science Degree in Environmental Science

This program is a two-year, 51 credit hours sequence of courses and research that provides depth and breadth in both environmental science and physics. The student must complete a minimum of 21 credit hours in each of the degree programs. Both degrees are awarded when the student meets the degree requirements of the Department of Physics and the School of Public and Environmental Affairs (SPEA).

### Admission

Students interested in this dual program must apply and be accepted by both the Department of Physics and the School of Public and Environmental Affairs. The degree is designed to be completed in two years, but must be completed within six years.

### Requirements

The dual M.S. in Physics and M.S.E.S. in SPEA program requires a minimum of 51 credit hours distributed among six components: physics core; environmental science core; economics, policy, and law competencies; tool skills; environmental chemistry concentration; and professional experience. Each candidate should take a 3 credit hour course during which they participate in a team to carry out

an integrative project that addresses a multidisciplinary problem. Capstone course credit may be double-counted to either concentration or tool skill requirement.

The capstone requirement may be met in one of the following ways: (1) SPEA-V 600, **Capstone in Public and Environmental Affairs**, sections with an environmental focus. (2) An alternative course with a similar structure, such as SPEA-E560, **Environmental Risk Analysis** or other approved course.

### Doctor of Philosophy Degree

The program of study leading to the PhD in Physics is primarily one of research leading to the attainment of a high level of competency within a specialized subfield of physics, together with a sufficient general knowledge of the discipline to understand the broader context and implications of their research. All students are expected to develop the ability to contribute creatively to our understanding of the physical world, through independent research facilitated by course work, individual study, and practical experience under the guidance of a research supervisor/mentor and a research committee. Toward this end, students are encouraged to identify a potential supervisor by the summer of their first year, and must deliver a seminar on their research progress and plans by the end of their fifth semester in the program. Students are also expected to regularly participate in the weekly colloquium and specialized seminars while in residence to maintain and broaden their knowledge of important trends in the discipline. The student's progress in research is monitored regularly by the research committee. The degree is capped by the completion of a substantial original project, described in a dissertation and defended in an oral exam. Students who fail to make adequate research progress at any point may be subject to academic probation and dismissal.

### Admission Requirements

Same as those for Master of Science degree.

### Course Requirements

A total of 90 credit hours, including two courses in one of the following six areas: accelerator physics (P671 plus one of P633, P634, P640, P641, P672), biological physics (P575 plus one of P581, P582, P583), chemical physics (P615 or P557 plus one of P614, P616, P625, or P627), condensed-matter physics (P557, P615, P616, P627, P657), high-energy physics (P622, P635, P636, P640, P641, P665, P707, P708), mathematical physics (P555, P609, P610, P622, P625, P637, P638, P647, P743), nuclear physics (P626, P630, P633, P634, P640, P641,). Courses offered for the (optional) inside minor cannot be used to satisfy this requirement. A minimum of 9 credit hours per semester at the P501 level or above with a minimum 3.0 (B) grade point average is required. All graduate students are expected to attend the weekly departmental colloquium. Mathematics courses suited to the student's fields will be specified by advisors in the Department of Physics.

### Minor

The minor may be taken either inside or outside of the department. The inside minor for all majors except biological physics consists of either P621 or P625, and at least two courses, falling within at least two nonmajor

areas of concentration, among nine areas: accelerator physics (P570, P671, or P672), chemical or condensed-matter physics (P557, P615, P616, P657, P627), high-energy physics: P535, P635, P636, P640, P641, P665, P707, P708), mathematical physics (P522, P555, P609, P610, P622, P625, P637, P638, P647, P743), nuclear physics (P535, P626, P630, P633, P634, P640, P641,), biological physics (P575, P581, P582, P583, P676), experimental physics (P540, P541, P551, P560), or astrophysics (P630, P637, P638). Two courses counting towards a single area do not fully meet this requirement. For biological physics the minor requirements will consist of two courses to be determined by the student's advisory committee. Programs of study for outside minors are determined by the individual departments and typically require 6 to 12 credit hours of course work. Recommended outside fields: astronomy, chemistry, mathematics, biology, biochemistry, neuroscience, medical science, and scientific computing. All outside minors must be approved by the graduate advisor of the Department of Physics. Note that P535 Introduction to Nuclear and Particle Physics cannot be counted toward the inside minor for students specializing in either nuclear physics or high-energy physics. For students specializing in other fields, P535 can be counted once toward the inside minor and can be considered as a course in either nuclear physics or high-energy physics for that purpose.

### Outside Minor in Physics

For students in other departments who wish an outside minor in physics, the requirement is a minimum of 6 credit hours at the 501 level or above. The grade point average for the 6 credit hours must be at least 3.0. Students who wish to complete the physics minor should bring the Nomination to Candidacy form to the Physics Academic Services Office for a signature upon completion of this requirement.

### Qualifying Examination

Written. May be taken only twice. Must be taken at the end of the first year and must be passed by the end of the second year. The written examination covers the subjects of mechanics, electricity and magnetism, quantum mechanics, and thermodynamics/statistical physics at the level of first-year graduate work. Relevant courses are P506, P507, P511, P512, P521, and P556. Not attempting the qualifying examination at the required time constitutes an automatic failure.

### Candidacy Seminar

Must be presented after the first attempt at the qualifying examination but before the end of the fifth semester. Usually pertains to a proposed dissertation topic.

### Teaching Requirement

Students must meet the departmental teaching requirement.

### Dissertation

Result of a significant piece of original research.

### Final Examination

Oral defense of dissertation.



(Note: The Doctor of Philosophy Degree in Mathematical Physics is described elsewhere in the Bulletin.)

## Faculty

### Chairperson

Professor David Baxter\*

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Distinguished Professors

Steven A. Gottlieb\* (Emeritus), V. Alan Kosteletzky\*

### Professors

David V. Baxter\*, John M. Beggs\*, Micheal S. Berger\*, Bennet Brabson (Emeritus), Robert R. de Ruyter\*, Harold Evans\*, Herbert Abraham Fertig\*, Charles J. Horowitz\*, Jorge Jose\*, S. Y. Lee\* (Emeritus), Jinfeng Liao\*, Chen-Yu Liu\*, Hans-Otto Meyer\* (Emeritus), James A. Musser\*, Gerardo Ortiz\*, Roger Pynn\*, William L. Schaich\* (Emeritus), Sima Setayeshgar\*, Matthew Shepherd\*, William Michael Snow\*, Paul E. Sokol\*, Adam P. Szczepaniak\*, Rex Tayloe\*, Richard James Van Kooten\*, Jon Urheim\*, Scott W. Wissink\* (Emeritus).

### Scientists

William Jacobs\* (Emeritus), Fred Luehring, Enrico Lunghi, Ryan Mitchell, Michihiro Nagao, Daniel Salvat, Edward Stephenson\*, Garfield Warren, Daria Zieminska\* (Emerita)

### Associate Professors

John P. Carini\*, Radovan Dermisek\*, Sabine Lammers\*, Josh Long\*, Emile Passemar\*, Babak Seradjeh\*, Shixiong Zhang\*

### Assistant Professors

Brian DeSalvo, Chris Meyer\*, Walter Pettus, Philip Richerme\*

### Adjunct Faculty

Romualdo DeSouza\*, Bogdan Dragnea\*, Geoffrey Fox\*, James Glazier\*, Srinivasan Iyengar\*, Caroline Jarrold\*, Steven Tait\*

### Graduate Advisor

Professor Rex Tayloe\*, Swain Hall West 269, (812) 855-3057

## Courses

- PHYS-P 441 Analytical Mechanics I (3 cr.)
- PHYS-P 442 Analytical Mechanics II (3 cr.)
- PHYS-P 453 Introduction to Quantum Physics (3 cr.)
- PHYS-P 454 Modern Physics (4 cr.)
- PHYS-P 460 Modern Optics (4 cr.) This class is taught concurrently with P560. For descriptions of the above 400-level courses, please see the IU College of Arts and Sciences Bulletin.
- PHYS-P 500 Seminar (1 cr.) Reports on current literature. Graduate students and staff participate.
- PHYS-P 504 Practicum in Physics Laboratory Instruction (1 cr.) Practical aspects of teaching physics labs. Meets the week before classes and one hour per week during the semester to discuss goals, effective teaching techniques, grading standards, AI-student relations, and administrative procedures as applied to P201. Students enrolling in this course teach a section of P201 laboratory.
- PHYS-P 506 Electricity and Magnetism I (4 cr.) Three hours of lectures and one hour of recitation. Development of Maxwell's equations. Conservation laws. Problems in electrostatics and magnetostatics. Introduction to the special functions of mathematical physics. Time-dependent solutions of Maxwell's equations. Motion of particles in given electromagnetic fields. Elementary theory of radiation. Plane waves in dielectric and conducting media. Dipole and quadrupole radiation from nonrelativistic systems.
- PHYS-P 507 Electricity and Magnetism II (4 cr.) Three hours of lectures and one hour of recitation. Further development of radiation theory. Fourier analysis of radiation field and photons. Scattering and diffraction of electromagnetic waves. Special relativity. Covariant formulation of electromagnetic field theory.
- PHYS-P 508 Current Research in Physics (1 cr.) Presentations by faculty members designed to give incoming graduate students an overview of research opportunities in the department.
- PHYS-P 510 Environmental Physics (3 cr.) This class is taught concurrently with P310. Requires consent from instructor. Relationship of physics to current environmental problems. Energy production, comparison of sources and by-products; nature of and possible solutions to problems of noise, particulate matter in atmosphere.
- PHYS-P 511 Quantum Mechanics I (4 cr.) Three hours of lectures and one hour of recitation. Basic principles, the Schrödinger equation, wave functions, and physical interpretation. Bound and continuum states in one-dimensional systems. Bound states in central potential; hydrogen atom. Variational method. Time-independent perturbation theory.
- PHYS-P 512 Quantum Mechanics II (4 cr.) P: P511. Three hours of lectures and one hour of recitation. Time-dependent perturbation theory. Schrödinger, Heisenberg and interaction pictures. Elementary theory of scattering. Rotations and angular momentum. Other symmetries. Nonrelativistic, many-particle quantum mechanics, symmetry and antisymmetry of wave functions, and Hartree-Fock theory of atoms and nuclei.
- PHYS-P 518 Scattering Methods in Materials Science (3 cr.) P: Graduate status. Introduction to Neutron and X-ray Scattering techniques used in Materials Physics. Basic Scattering Theory; Structural Measurements of Ordered, Disordered and Nano Materials; stress and Strain



- Measurements; Imaging; Inelastic Neutron and X-ray Scattering; EXAFS and NEXAFS: Polarized Neutrons and X-rays; Proposal Writing.
- PHYS-P 521 Classical Mechanics (3 cr.) P: Graduate status. Vector and tensor analysis. Lagrangian and Hamiltonian dynamics. Conservation laws and variational principles. Two-body motion, many-particle systems, and rigid-body motion. Canonical transformations and Hamilton-Jacobi theory. PHYS-P 522 Advanced Classical Mechanics (3 cr.) Mathematical methods of classical mechanics; exterior differential forms, with applications to Hamiltonian dynamics. Dynamical systems and nonlinear phenomena; chaotic motion, period doubling, and approach to chaos.
  - PHYS-P 535 Introduction to Nuclear and Particle Physics (3 cr.) P: P453 or equivalent. Survey of the properties and interactions of nuclei and elementary particles. Experimental probes of sub-atomic structure. Basic features and symmetries of electromagnetic, strong and weak forces. Models of hadron and nuclear structure. The role of nuclear and particle interactions in stars and the evolution of the universe.
  - PHYS-P 540 Digital Electronics (3 cr.) Digital logic, storage elements, timing elements, arithmetic devices, digital-to-analog and analog-to-digital conversion. Course has lectures and labs emphasizing design, construction, and analysis of circuits using discrete gates and programmable devices.
  - PHYS-P 541 Analog Electronics (3 cr.) Amplifier and oscillator characteristics feedback systems, bipolar transistors, field-effect transistors, optoelectronic devices, amplifier design, power supplies, and the analysis of circuits using computer-aided techniques.
  - PHYS-P 548 Mathematical Methods for Biology (3 cr.) Physical principles applied to modeling biological systems to obtain analytical models that can be studied mathematically and tested experimentally.
  - PHYS-P 551 Modern Physics Laboratory (3 cr.) This class is taught concurrently with P451. Graduate-level laboratory; experiments on selected aspects of atomic, condensed-matter, and nuclear physics.
  - PHYS-P 555 Quantum Computation and Information (3 cr.) The course covers basic concepts in quantum computation and information including: standard qubit model of computation, quantum algorithms such as Shor's factoring and Grover's search algorithms, physics of information processing, quantum error correction, and physical implementations of quantum computers.
  - PHYS-P 556 Statistical Physics (3 cr.) The laws of thermodynamics; thermal equilibrium, entropy, and thermodynamic potentials. Principles of classical and quantum statistical mechanics. Partition functions and statistical ensembles. Statistical basis of the laws of thermodynamics. Elementary kinetic theory.
  - PHYS-P 557 Solid State Physics (3 cr.) P: P453 or equivalent. Atomic theory of solids. Crystal and band theory. Thermal and electromagnetic properties of periodic structures.
  - PHYS-P 560 Modern Optics (3 cr.) P331; or consent of instructor. Course is taught concurrently with P460. The study of light propagation and interaction with matter using Maxwell's equations and the resulting description of electromagnetic waves. Phase/group velocity, dispersion, polarization, coherence, superposition, interference, diffraction and Fourier optics. Devices and techniques include lasers, optical spectroscopy, nonlinear and quantum optics.
  - PHYS-P 570 Introduction to Accelerator Physics (3 cr.) P: Approval of instructor. Overview of accelerator development and accelerator technologies. Transverse phase space motion and longitudinal synchrotron motion of a particle in an accelerator. Practical accelerator lattice design. Design issues relevant to synchrotron light sources. Basics of free electron lasers. Spin dynamics in cyclic accelerators and storage rings.
  - PHYS-P 571 Special Topics in Physics of Beams (3 cr.) P: Approval of instructor.
  - PHYS-P 575 Introduction to Biophysics (3 cr.) Physics P575 presents an introduction to Biophysics. Topics include: properties of biomolecules and biomolecular complexes; biological membranes, channels, neurons; Diffusion, Brownian motion; reaction-diffusion processes, pattern formation; sensory and motor systems; psychophysics and animal behavior, statistical inference.
  - PHYS-P 581 Modeling and Computation in Biophysics (3 cr.) Introduction to modeling and computational methods applied to phenomena in Biophysics. Topics: population dynamics; reaction kinetics; biological oscillators; coupled reaction networks; network theory; molecular motors; limit cycles; reaction diffusion models; the heart; turning instability; bacterial patterns; angiogenesis.
  - PHYS-P 582 Biological and Artificial Neural Networks (3 cr.) Biological details of neurons relevant to computation. Artificial neural network theories and models, and relation to statistical physics. Living neural networks and critical evaluation of neural network theories. Student final projects will consist of programming networks and applying them to current research topics.
  - PHYS-P 583 Signal Processing and Information Theory in Biology (3 cr.) Probability and statistics. Filtering. Correlation functions and power spectra. Time invariant and time-varying systems. Shannon Information. Coding and decoding. Processing of sensory signals and other applications to neurobiology and psychophysics.
  - PHYS-P 609 Computational Physics (3 cr.) Designed to introduce students (1) to numerical methods for quadrature, solution of integral and differential equations, and linear algebra; and (2) to the use of computation and computer graphics to

simulate the behavior of complex physical systems. Topics will vary.

- PHYS-P 610 Computational Physics II (3 cr.)  
Second semester of computational physics focusing on more advanced topics; e.g.: fractals, kinetic growth models, models in statistical mechanics, quantum systems and fast Fourier transforms, parallel computing.
- PHYS-P 615 Condensed Matter Physics I (3 cr.)  
P: P512. Mechanical, thermal, electric, and magnetic properties of solids; crystal structure; band theory; semiconductors; phonons; transport phenomena; superconductivity; superfluidity; and imperfections. Usually given in alternate years.
- PHYS-P 616 Condensed Matter Physics II (3 cr.)  
P: P512. Mechanical, thermal, electric, and magnetic properties of solids; crystal structure; band theory; semiconductors; phonons; transport phenomena; superconductivity; superfluidity; and imperfections. Usually given in alternate years.
- PHYS-P 621 Relativistic Quantum Field Theory I (4 cr.) P: P512. Introduction to quantum field theory, symmetries, Feynman diagrams, quantum electrodynamics, and renormalization.
- PHYS-P 622 Relativistic Quantum Field Theory II (4 cr.) P: P621. Non-Abelian gauge field theory, classical properties, quantization and renormalization, symmetries and their roles, and nonperturbative methods.
- PHYS-P 625 Quantum Many-Body Theory I (3 cr.)  
P: P512. Elements of nonrelativistic quantum field theory: second quantization, fields, Green's functions, the linked-cluster expansion, and Dyson's equations. Development of diagrammatic techniques and application to the degenerate electron gas and imperfect Fermi gas. Canonical transformations and BCS theory. Finite-temperature (Matsubara), Green's functions, and applications.
- PHYS-P 626 Quantum Many-Body Theory II- Nuclear (3 cr.) P: P625. Continued development of nonrelativistic, many-body techniques, with an emphasis on nuclear physics: real-time, finite-temperature Green's functions, path-integral methods, Grassmann algebra, generating functionals, and relativistic many-body theory. Applications to nuclear matter and nuclei.
- PHYS-P 627 Quantum Many-Body Theory II- Condensed Matter (3 cr.) P: P625. Continued development of nonrelativistic many-body techniques with an emphasis on condensed-matter physics: properties of real metals, superconductors, superfluids, Ginzburg-Landau theory, critical phenomena, order parameters and broken symmetry, ordered systems, and systems with reduced dimensionality.
- PHYS-P 630 Nuclear Astrophysics (3 cr.) P: A451-A452, P453-P454, or consent of instructor. Fundamental properties of nuclei and nuclear reactions, and the applications of nuclear physics to astronomy. The static and dynamic properties of nuclei; nuclear reaction rates at low and high energies. Energy generation and element synthesis in stars; the origin and evolution of the element abundances in cosmic rays.
- PHYS-P 633 Theory of the Nucleus I (3 cr.)  
P: P512. Nuclear forces, the two-nucleon problem, systematics and electromagnetic properties of nuclei, nuclear models, nuclear scattering and reactions, theory of beta-decay, and theory of nuclear matter.
- PHYS-P 634 Theory of the Nucleus II (3 cr.)  
P: P512. Nuclear forces, the two-nucleon problem, systematics and electromagnetic properties of nuclei, nuclear models, nuclear scattering and reactions, theory of beta-decay, and theory of nuclear matter.
- PHYS-P 635 Frontier Particle Physics I (3 cr.)  
This course focuses on the frontier of particle physics. Topics include Standard-Model physics, neutrino masses, tests of fundamental symmetries, anomalies, grand unified theories, higher-dimensional theories, supersymmetry, composite models, supergravities, string and superstring theory.
- PHYS-P 636 Frontier Particle Physics II (3 cr.)  
This course focuses on the frontier of particle physics. Topics include Standard-Model physics, neutrino masses, tests of fundamental symmetries, anomalies, grand unified theories, higher-dimensional theories, supersymmetry, composite models, supergravities, string and superstring theory.
- PHYS-P 637 Theory of Gravitation I (3 cr.)  
Introduction to the general theory of relativity, stress-energy tensor, parallel transport, geodesics, Einstein's equation, differential geometry, manifolds, general covariance, bending of light, perihelion advance. Modern cosmology: Robertson-Walker metric, equations of state, Friedmann equations, Hubble's law, redshift, cosmological constant, inflation, quintessence, cosmic microwave background, Big Bang nucleosynthesis, structure formation. See MATH M637.
- PHYS-P 638 Theory of Gravitation II (3 cr.)  
Gravitation waves, Schwarzschild geometry and black holes, Kerr metric, Reissner-Nordstrom metric, extremal black holes, Penrose diagrams, Hawking radiation, Lie derivatives, isometries and Killing vectors, variational principle and the Palatini formalism, spinors in general relativity, vierbeins, gravitation as a gauge theory, quantum gravity. See MATH M638.
- PHYS-P 640 Subatomic Physics I (3 cr.) P: P512, C: P621. Experimental methods and theoretic description of particle and nuclear physics: applied relativistic quantum mechanics, symmetries of fundamental interactions, experimental techniques, structure of the nucleon, electromagnetic and weak interactions, elementary particles, and the Standard Model. PHYS P640 may be substituted for P633 in degree requirements.
- PHYS-P 641 Subatomic Physics II (3 cr.) P: P640. Quarks and gluons in QCD, the parton model, strong interactions at low energies, nuclear environment and models, nuclear thermodynamics and subatomic

physics in cosmology and astrophysics. PHYS P641 may be substituted for P634 in degree requirements.

- PHYS-P 647 Mathematical Physics (3 cr.) P: P501 or P502, P521, or MATH M442. Topics vary from year to year. Integral equations, including Green's function techniques, linear vector spaces, and elements of quantum mechanical angular momentum theory. For students of experimental and theoretical physics. May be taught in alternate years by members of Departments of Physics or Mathematics, with corresponding shift in emphasis; see MATH M647.
- PHYS-P 657 Statistical Physics II (3 cr.) Continuation of P556. Topics include advanced kinetic and transport theory, phase transitions, and nonequilibrium statistical mechanics.
- PHYS-P 665 Scattering Theory (3 cr.) P: P506, P511, P640. Theoretical tools for analysis of scattering experiments. Electromagnetic theory, classical and quantum particle dynamics.
- PHYS-P 671 Special Topics in Accelerator Physics (3 cr.) P: P570, P521. Nonlinear dynamics: betatron phase space distortion due to the nonlinear forces. Methods of dealing with nonlinear perturbations. Multiparticle dynamics: microwave and coupled bunch instabilities. Physics of electron cooling and stochastic cooling. Advanced acceleration techniques: inverse free electron laser acceleration, wakefield and two-beam acceleration.
- PHYS-P 672 Special Topics in Accelerator Technology and Instrumentation (3 cr.) P: Consent of instructor.
- PHYS-P 676 Selected Topics in Biophysics (3 cr.) This course presents papers on current topics in Biophysics, together with key classical papers related to those topics. Student participation in discussions is essential. Each student is expected to write two essays on two of the topics presented.
- PHYS-P 700 Topics in Theoretical Physics (arr. cr.)
- PHYS-P 702 Seminar in Nuclear Spectroscopy (arr. cr.)
- PHYS-P 703 Seminar in Theoretical Physics (arr. cr.)
- PHYS-P 704 Seminar in Nuclear Reactions (arr. cr.)
- PHYS-P 705 Seminar in High-Energy Physics and Elementary Particles (arr. cr.)
- PHYS-P 706 Seminar in Solid State Physics (arr. cr.)
- PHYS-P 707 Topics in Quantum Field Theory and Elementary Particle Theory (3 cr.)
- PHYS-P 708 Topics in Quantum Field Theory and Elementary Particle Theory (3 cr.)
- PHYS-P 743 Topics in Mathematical Physics (3 cr.) For advanced students. Several topics in mathematical physics studied in depth; lectures and student reports on assigned literature. Content varies from year to year. May be taught in alternate

years by members of Departments of Physics or Mathematics, with corresponding shift in emphasis; see MATH M743.

- PHYS-P 750 Topics in Astrophysical Sciences (1-3 cr.) A seminar in astrophysics with special emphasis on subjects involving more than one department. Examples of such topics include planetology, nucleosynthesis, nuclear cosmochronology, isotopic anomalies in meteorites, particle physics of the early universe, and atomic processes in astrophysical systems.
- PHYS-P 782 Topics in Experimental Physics (1-4 cr.)
- PHYS-P 790 Seminar in Mathematical Physics (arr. cr.)
- PHYS-P 800 Research (arr. cr.) S/F grading. Experimental and theoretical investigations of current problems; individual staff guidance.
- PHYS-P 801 Readings (arr. cr.) S/F grading. Independent study in physics; individual staff guidance.
- PHYS-P 802 Research (arr. cr.) Experimental and theoretical investigations of current problems; individual staff guidance. Graded by letter grade.
- PHYS-P 803 Readings (arr. cr.) Independent study in physics; individual staff guidance. Graded by letter grade.
- PHYS-G 750 Topics in Astrophysical Sciences (1-3 cr.)

## Political Science

### College of Arts and Sciences

Departmental E-mail: [iupolsci@indiana.edu](mailto:iupolsci@indiana.edu)

Departmental URL: <http://polisci.indiana.edu/home/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Arts and Doctor of Philosophy

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

#### Admission Requirements

Satisfactory scores on the Graduate Record Examination (verbal and quantitative sections); satisfactory previous academic record; three letters of recommendation; writing sample, and statement of purpose. International students must complete the Test of English as a Foreign Language (TOEFL) with a satisfactory score. Applicants holding no academic degree higher than the bachelor's degree may be admitted as Ph.D. students.

### Master of Arts Degree

Students enrolled in our Ph.D. program may, if they choose, apply for an M.A. degree before they complete the Ph.D. This M.A. may serve either as a terminal degree or as a stepping-stone towards later completion of a Ph.D. Courses taken to satisfy requirements for the M.A. could also count towards completion of requirements for the Ph.D. program, provided that program is completed under existing time limits and the student meets the following requirements.

#### M.A. Advisory Committee

Students must form a committee of three or more faculty members who will be responsible for approving a master's paper. One of these faculty members must be designated as the M.A. advisor.

#### Course Requirements

A total of 30 credit hours, including Y570. At least 15 of the 30 credit hours must be graduate courses (500 level or higher). In order to qualify for the M.A. degree, each graduate student must complete five graduate seminars in political science, averaging at least a grade of B (3.0) in all seminars. For students entering with previous graduate work, the Director of Graduate Studies, in consultation with the student's M.A. advisory committee, may allow transfer up to 8 hours graduate credit from other institutions.

#### Master's Paper

This written requirement can be based on a research paper prepared in a departmental seminar. If a new paper is written to satisfy this requirement, it may receive no more than 4 hours of credit. The master's paper must be approved by all members of the M.A. Advisory Committee.

#### Foreign Language/Research-Skill Requirement

The student must demonstrate reading proficiency in one language or proficiency in an approved research skill.

### Master of Arts for Teachers Degree

Information regarding this degree program may be obtained from the School of Education.

### Doctor of Philosophy Degree

#### Course Requirements

A total of 90 credit hours, including dissertation. Y570 Introduction to the Study of Politics is to be taken in the first year of residence. Students should complete Approaches and Issues (A & I) seminars for two subfields during the first two years of residence. Each graduate student must complete 10 graduate seminars numbered 500 and above in political science (excluding directed reading and directed research courses), averaging at least a B+ (3.3) in all seminars, prior to nomination to candidacy for the Ph.D. degree.

Students entering with previous graduate work can submit a petition to transfer credits. In accordance with university requirements, the Director of Graduate Studies and a designated departmental committee (typically the advisory committee) will evaluate supporting documentation such as syllabi to assess the substance and level of prior graduate training. If approved, transfer requests can reduce the number of required seminars.

Students are required to successfully complete a second-year research project to demonstrate and start building professional competence by producing high-quality scholarship. The second-year project should reflect the student's main field, but students have discretion in the choice of their topics. Papers written while in other graduate programs or undergraduate theses will not satisfy the requirement.

Students should consult with advisory committee members no later than the end of their third semester to identify a piece of work that will be submitted for subsequent evaluation by the student's progress review committee. Second-year papers will be evaluated by advisory committees in accordance with established departmental guidelines. If revisions are needed, students will have a 90-day waiting period to revise and resubmit their work for final approval. Failure to secure approval before the start of the fifth semester will result in dismissal from the PhD program.

#### Fields of Study

Students admitted into the Ph.D. program must identify one primary and one secondary subfield from the following list: American Politics, Comparative Politics, International Relations, Political Methodology (available as secondary subfield only), and Political Philosophy. A primary subfield requires one A & I seminar, 4-5 substantive seminars to be approved by an advisory committee, and one qualifying examination. A secondary subfield requires one A & I seminar and three substantive seminars.

#### Minors

The outside minor requirement is typically satisfied by completing four courses in one or more related departments or in an interdepartmental program, embracing either substantive material or methodology. Some departments or other programs have specific requirements for a Ph.D. minor; students should check with the relevant unit for details. Students selecting an individualized minor must have the proposed set of courses approved by the advisory committee, the Director of Graduate Studies, and the graduate school.

#### Advisory Committee

Each student will be assigned an advisory committee, which will include two faculty members from each of the student's primary and secondary subfields in political science and a representative of the outside minor. (Students choosing an individualized minor need not have a representative of that minor.) The chairperson of the committee serves as the student's principal advisor.

The committee will supervise the student's course of study during pre-candidacy. Advisory committees must approve a topic and type of work to be submitted for second-year research projects by the end of a student's third semester.

A formal review of progress toward the degree will take place towards the end of a student's fourth semester. Along with academic advice for coursework that prepares students for their primary subfield examination and eventual dissertation research, progress advisory committees will be required to submit a recommendation to the Political Science Graduate Office regarding a student's ability to continue in the graduate program. This

recommendation will depend upon the committee's final evaluation of the second-year research project.

### Foreign Language/Research-Skill Requirement

The student must demonstrate proficiency in any two of the following subjects: a foreign language, mathematics, logic, statistics, or computer science. With the approval of the advisory committee, the student may qualify in a single language or research skill at an advanced level, rather than in two. To qualify in a language at the advanced level, the student must satisfy the in-depth proficiency requirement. For rules regarding qualification in a research skill at the advanced level, consult the Director of Graduate Studies. The student is expected to make satisfactory progress in meeting the requirements for the degree. In particular, students must satisfy the first language or research-skill requirement during the first year of study, and the second requirement no later than the second year.

### Qualifying Examination

Students must take one qualifying examination in a primary subfield after completing its required coursework. This qualifying examination is intended to evaluate the student's substantive knowledge and analytical ability in the student's main field of study. The written qualifying examination is administered two times a year: in the fall and spring. Students can retake the examination a second time if their first attempt is unsuccessful. Failure to get a passing grade after a second attempt will result in dismissal from the PhD program.

### Research Committee

Upon completion of the qualifying examination and presentation of a satisfactory dissertation proposal, the student will be nominated to candidacy for the Ph.D. The University Graduate School, on the recommendation of the department, will appoint a research committee to supervise the dissertation.

### Final Examination

Covers the field of study related to the dissertation and defense of the dissertation.

### Ph.D. Minor in Political Science

Students from other departments or schools who wish to minor in Political Science should consult with the Director of Graduate Studies, who will ordinarily serve as the minor advisor. Students will be required to complete 12 credit hours of course work; these courses must be completed with a grade point average of at least 3.3. All courses must be approved for graduate credit and no more than one course should be taken below the 500 level. These requirements may be modified in particular cases by the Director of Graduate Studies.

## Faculty

### Chairperson

Professor Lauren MacLean\*

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Arthur Bentley Chair

Lauren M. MacLean\*

### Rudy Professors

Edward G. Carmines\*, Jeffrey C. Isaac\*, William E. Scheuerman\*

### I.U. Distinguished Professors

Edward G. Carmines\*, Sumit Ganguly\*

### Rabindranath Tagore Professor of Indian Cultures and Civilization

Sumit Ganguly\*

### Warner O. Chapman Professor

Edward G. Carmines\*

### Professors

William Bianco\*, Jack Bielasiak\*, Edward G. Carmines\*, Aurelian Craiutu\*, Norman S. Furniss\* (Emeritus), Sumit Ganguly\*, Russell Lee Hanson\* (Emeritus), Jeffrey A. Hart\* (Emeritus), Timothy Hellwig\*, Marjorie R. Hershey\* (Emeritus), Francis Hoole\* (Emeritus), Jeffrey Isaac\*, Michael Dean McGinnis\* (Emeritus), Greg Kasza (Emeritus)\*, Karen A. Rasler\* (Emeritus), Leroy Rieselbach\* (Emeritus), Jean C. Robinson\* (Emeritus), William Scheuerman\*, Regina Smyth\*, William R. Thompson\* (Emeritus), Timothy A. Tilton\* (Emeritus), Gerald C. Wright Jr.\*

### Associate Professors

Eileen Braman\*, Chris DeSante\*, Judith L. Failer\*, Robert Hattery (Emeritus), Armando Razo\*, Steve Sanders (Law), Abdulkader Sinno\*, Dina R. Spechler\*, Richard E. Stryker (Emeritus)\*, William Winecoff\*

### Assistant Professors

Vanessa Cruz Nichols, Ore Koren, Steven Webster, Jason Wu

### Director of Graduate Studies

Professor William Winecoff, Woodburn Hall 210, (812) 855-1208

## Courses

### 600 Level

With the exception of individual readings courses, 600-level courses are seminars or colloquia. In some instances a seminar will introduce students broadly to the principal scholarly literature in a field; in others, the objective will be to provide an in-depth analysis of a more specialized area of research. The kinds of seminar topics that are offered regularly are illustrated following.

Seminar topics often have relevance for each of several of the departmental examination fields. Furthermore, a given topic may be approached from a variety of perspectives. Therefore, although cross-listing is avoided here for the sake of brevity, it should be noted that essentially the same topic may appear under each of two or more generic titles at various times.

Interested students should consult detailed course descriptions, which are available on request from



the departmental graduate office in advance of each semester. Any course at the 600 level may be taken more than once, provided the topic is not repeated.

### 700 Level

All 700-level courses are research seminars. Students are expected to demonstrate their own research enterprise on a topic agreed upon with the instructor. In some instances, team research may be carried out. Students are also expected to make significant progress toward identification of an eventual dissertation project in the research seminars in the major field. Each course may be taken more than once.

- **POLS-Y 550 & Y 551 Political Science and Professional Development (1-3 cr.)** Aims and techniques of preparing and delivering effective lectures and leading stimulating discussions in different learning environments; enhancing the motivation and performance of students; developing course materials for undergraduate courses; creating innovative assignments and evaluating students' learning. May be repeated for up to three credits.
- **POLS-Y 552 Advanced Semester for AI's Teaching (1-3 cr.)** AIs teaching their own courses of record can use Y552 to get credit for the coaching they will receive. (All AIs teaching their own course of record will receive coaching; they may do so for one credit, to get it on their transcript, or without receiving credit.)
- **POLS-Y 553 Political Science & Professional Development; World Politics Research Seminar (1 cr.)** The World Politics Research Seminar is a regular faculty symposium on research-in-progress in Comparative Politics, International Relations, Political Economy, and related fields. It is organized within the Department of Political Science but we are eager for faculty of other units on the Bloomington campus to attend, participate, and present their work. Seminar papers are invited for inclusion in the WPRS Working Paper Series
- **POLS-Y 553 Political Science & Professional Development; American Politics Workshop (1 cr.)** The American Politics Workshop (APW) is a regular convening of graduate students and faculty with an interest in American politics. Meeting weekly throughout the academic year, the APW is designed to provide a forum for those conducting research on American politics to present work in progress and, in turn, learn about new and ongoing research projects in the field.
- **POLS-Y 553 Dissertation Proposal and Thesis Workshop (1 cr.)** This seminar is designed for Political Science PhD students who are either 1) writing a dissertation prospectus or 2) have successfully defended the dissertation prospectus and are now working on the dissertation. It functions as a shared forum for advanced students to present drafts of their prospectus or dissertation chapters and gain constructive advice on research, writing, and broader questions of publication and professional development. By helping to establish some sense of comradeship and community, the seminar encourages students both to give and share critical feedback with peers, and also make progress by determining and then abiding by realistic deadlines for writing drafts and/or chapters.
- **POLS-Y 557 Comparative Politics: Approaches and Issues (3 cr.)** Overview and analysis of the approaches and issues in the literature of comparative politics. Required of students taking comparative politics as a field of study for the Ph.D. It is recommended that this course be taken during the first two years of graduate work at Indiana University.
- **POLS-Y 561 American Politics: Approaches and Issues (3 cr.)** Overview and analysis of the approaches and issues in the literature of American politics. Required of students taking American politics as a field of study for the Ph.D. It is recommended that this course be taken during the first two years of graduate work at Indiana University.
- **POLS-Y 565 Public Administration, Law, and Policy: Approaches and Issues (3 cr.)** Overview and analysis of the approaches and issues in the literature of public administration, law, and policy. Required of students taking public administration, law, and policy as a field of study for the Ph.D. It is recommended that this course be taken during the first two years of graduate work at Indiana University.
- **POLS-Y 569 International Relations: Approaches and Issues (3 cr.)** Overview and analysis of the approaches and issues in the literature of international relations. Required of students taking international relations as a field of study for the Ph.D. It is recommended that this course be taken during the first two years of graduate work at Indiana University.
- **POLS-Y 570 Introduction to the Study of Politics (3 cr.)** Problems of graduate study and professional scholarship; central organizing concepts and the use of theory in political science and related disciplines; specialized areas of research and scholarship in political science; conditions of scientific inquiry and methodological problems in the study of political phenomena; central importance of theory in explanation.
- **POLS-Y 572 Mathematical Tools for Political Scientists (1 cr.)** Review of topics in mathematics that are particularly useful in the application of formal political theory and political methodology. Typical topics include Euclidean spaces and functions; sets, neighborhoods, sequences, and limits; derivatives; integrals; vectors and matrices; optimization. To be taken prior to or concurrent with Y573 and Y577.
- **POLS-Y 573 Introduction to Formal Political Theory (3 cr.)** Introduction to the use of formal models in political science. Provides the training required to develop basic models of political process and exposes students to classic works and problems in formal political theory.
- **POLS-Y 575 Political Data Analysis I (3 cr.)** Basic quantitative analysis techniques applied to political science data: principles of measurement, tables, graphs, probability distributions, nonparametric statistics, matrix algebra, Markov chains, correlations and simple regression, tests of significance. Computer processing of data and applications of

bivariate statistics to problems in political science emphasized.

- **POLS-Y 576 Political Data Analysis II: Approaches and Issues (3 cr.)** P: Y575 or equivalent. Focuses on general linear model and multivariate statistical techniques such as analysis of variance and covariance, partial and multiple regression and correlation, time series analysis, logit and probit analysis, canonical correlation, and discriminant analysis. Applications to problems in political science research emphasized.
- **POLS-Y 577 Advanced Topics in Political Data Analysis (3 cr.)** P: Y576 or equivalent. Content varies. Topics include analysis of covariance structures, dynamic modeling, estimation of multiple equation systems, mathematical models, time series analysis. Applications to problems in political science research emphasized. May be repeated for credit if topic differs.
- **POLS-Y 579 Qualitative Methods in Political Research (3 cr.)** P: Y576 or equivalent. This course surveys the use of qualitative methods such as case studies, comparative historical analysis, interviews, focus groups, participant observation, interpretivism, and culture studies. Readings include works about each method as well as concrete research that utilizes each method, and students will also conduct practical exercises such as interviews.
- **POLS-Y 580 Research Methods in Political Science (1-3 cr.)** Foundations of political research; alternative research strategies; problems of measuring political variables; design of research to test hypotheses. S/F grading.
- **POLS-Y 591 Computer Applications in Political Science (1 cr.)** This course introduces students to computing applications for political scientists. Topics include computing packages such as STATA, S-Plus, and Excel; creating datasets; and transferring datasets among programs. A prerequisite for this course is enrollment in Y575.
- **POLS-Y 592 Bibliography of Political Science (1 cr.)** Introduction to library research tools in political science, problems of bibliographical research, special resources of Indiana University, problems of utilizing library resources.
- **POLS-Y 600 State Politics (1 cr.)** An examination of the institutions and processes by which state governments carry out their responsibilities. Includes the study of executives, legislatures, parties, and elections at the state level.
- **POLS-Y 622 Urban Politics (3 cr.)** An examination of—and the problems faced and challenges faced by—the governments of cities and metropolitan areas. Includes study of leadership, citizen participation, intergovernmental relations, and urban policy.
- **POLS-Y 630 State Executive Politics (3 cr.)** A course that examines the role of governors in state politics. Includes the study of leadership and the relationship between the executive and other elements of government at the subnational level. This course is not currently being offered.
- **POLS-Y 640 State Parties and Interest Groups (3 cr.)** An examination of political parties and interest groups, their roles in government, and their structure and organization. This course is not currently being offered.
- **POLS-Y 657 Comparative Politics (3 cr.)** The focus may be on one or more political systems within regions indicated. Illustrative topics: African Politics, Chinese Politics, West Europe, East Europe, Middle East, Latin America, Russia, South Asia; comparative democratization, comparative development strategies, comparative political economy, comparative political parties.
- **POLS-Y 661 American Politics (3 cr.)** Illustrative topics: the presidency, legislative process, political behavior, political parties and representation, political psychology, political socialization, race and ethnicity, urban politics.
- **POLS-Y 663 Political and Administrative Development (3 cr.)** Illustrative topics: politics of social change, comparative urbanization, political and administrative development.
- **POLS-Y 665 Public Law and Policy (3 cr.)** Illustrative topics: urban policy analysis; politics of higher education; science, technology, and public policy; politics of environmental policy.
- **POLS-Y 669 International Relations (3 cr.)** Illustrative topics: human rights, international conflict, international organization, nuclear strategy, quantitative international relations, U.S. foreign policy, Russian and Soviet foreign policy, international political economy.
- **POLS-Y 671 Public Administration (3 cr.)** Illustrative topics: organization theory, urban administration, public administration.
- **POLS-Y 673 Empirical Theory and Methodology (3 cr.)** Illustrative topics: survey of empirical theory, theory building and causal inference, positive political theory, institutional analysis and design, empirical democratic theory, research design.
- **POLS-Y 675 Political Philosophy: Approaches and Issues (3 cr.)** Illustrative topics: analysis of political concepts; political theory of the Enlightenment; nineteenth-century political thought; twentieth-century political thought; ; Marxist theory; American political thought; political theory of moderation, contemporary political theory.
- **POLS-Y 681 Readings in Comparative Politics (1-4 cr.)**
- **POLS-Y 683 Readings in American Politics (1-4 cr.)**
- **POLS-Y 685 Readings in Public Administration, Law, and Policy (1-4 cr.)**
- **POLS-Y 687 Readings in International Relations (1-4 cr.)**
- **POLS-Y 689 Readings in Political Theory and Methodology (1-4 cr.)**
- **POLS-Y 757 Comparative Politics (3 cr.)**
- **POLS-Y 761 American Politics (3 cr.)**
- **POLS-Y 763 Political and Administrative Development (3 cr.)**
- **POLS-Y 765 Public Law and Policy (3 cr.)**
- **POLS-Y 769 International Relations (3 cr.)**
- **POLS-Y 771 Public Administration (3 cr.)**
- **POLS-Y 773 Empirical Theory and Methodology (3 cr.)**
- **POLS-Y 775 Political Philosophy (3 cr.)**

- **POLS-Y 780 Directed Research in Political Science (1-4 cr.)**\*\*These courses are eligible for a deferred grade.
- **POLS-Y 880 M.A. Thesis (1-4 cr.)**\*\*These courses are eligible for a deferred grade.
- **POLS-Y 890 Ph.D. Thesis (arr. cr.)**\*\*These courses are eligible for a deferred grade.

## Psychological and Brain Sciences

### College of Arts and Sciences

Departmental URL: <https://psych.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

### Admission Requirements

**Recommended Undergraduate Background:** To prepare for graduate work in psychological and brain sciences at Indiana University, students should have a general background in psychology consisting of approximately 20 credit hours in psychology, including laboratory work in psychology and statistics. Undergraduate course work in mathematics and in the biological and/or physical sciences is desirable. While it is expected that students will have a substantial background in psychology, students with backgrounds in other areas, for example, biology or mathematics, will be considered for admission on an equal basis with those students who have majored in psychology.

### Grades

An average of at least a B+ (3.3) must be maintained in all course work. No grades below B– (2.7) may be counted toward degree requirements. Students with a GPA below 3.3 or receiving more than one grade below B– (2.7) may be subject to academic probation and dismissal.

### Master of Arts Degree

The department accepts only Ph.D. students, but under unusual circumstances, applicants are considered for a M.A. degree only. Students accepted for a M.A. normally are not provided with financial support by the department. Students completing the M.A. program are not ensured acceptance into the Ph.D. program and will be evaluated in comparison with all other applicants to the Ph.D. program. No training program in clinical psychology is offered at the master's level.

### Course Requirements

A total of 30 credit hours including a core consisting of four graduate courses relevant to the student's course of study, as approved by the student's advisory committee and the Director of Graduate Studies. A minimum of another three credit hours should be research credits, to reflect work on thesis research. Usually at least 20 credit hours are in the major field, Psychology, but this is not required if the advisory committee and Director of Graduate Studies agree that the credits taken are relevant to the student's

major area of study. Beyond the six core courses and minimum of three research credits, additional credits (to count toward the required total of 30 credit hours) can be additional courses or additional research credits. A minimum of nine credit hours of coursework (excluding thesis research credits) must be numbered 500 or above. Any course requirements discussed above can be waived; such waivers must be approved by the department's Director of Graduate Studies and the University Graduate School.

### Skills Requirements

Students must also demonstrate competency in two areas of skills requirements:

- **Statistical Skills Requirement:** Demonstrated proficiency in statistical skills, at a level comparable to successful completion of a graduate course in statistics. This requirement usually will be fulfilled by successful completion of P553. However, with approval from the P553 instructor, the student's advisory committee, and the Director of Graduate Studies, proficiency could be demonstrated in other ways, such as (but not limited to) equivalent coursework from another institution, proficiency through prior research or work experience, and completion of relevant workshop and training experiences. Courses for this proficiency can be counted towards the required 30 credit hours.
- **Professional Development Skills Requirement:** Demonstrated proficiency in professional development issues. This requirement usually will be fulfilled by taking P595 or Q510. However, with approval from the P595/COGS-Q510 instructor, the student's advisory committee, and the Director of Graduate Studies, proficiency can be demonstrated in other ways, primarily through equivalent coursework from another institution. Courses for this proficiency can be counted towards the required 30 credit hours.

### Master's Thesis

Required. The student's advisory committee will participate in the approval of the thesis. The student is required to hold an oral defense of the thesis with the advisory committee. The outcome of the defense (pass or fail) must be communicated to the Director of Graduate Studies by the student's advisor. The preferred method is to submit the thesis to the University Graduate School electronically. Instructions and deadlines are available on the University Graduate School website. Students also must email a copy of the thesis to the department's Academic Services Coordinator; the department will pay for one printed and bound copy for the department archives.

In instances where shortcomings are apparent (in coursework or the thesis), the student may be required to complete additional coursework or assignments, as determined by the advisory committee in consultation with the Director of Graduate Studies. For example, additional work on the research project or an additional course to provide deeper training may be required. Students must be consistently involved in productive research throughout their course of graduate study. Students who are determined, by their faculty advisory committee, not to

be making adequate research progress may be subject to academic probation and dismissal.

At the time when a student decides to leave the doctoral program and seek a Masters degree instead, the timeline for completing the requirements for the Masters degree will be discussed. In most instances, the student will have one to two semesters to complete the Masters degree. If there are special circumstances in which a student is accepted directly for a Masters degree, the timeline will be discussed with the student's advisory committee and the Director of Graduate Studies, both at admissions and throughout the student's course of study.

### **Doctor of Philosophy Degree Research**

To remain in good standing, students must be consistently involved in productive research throughout their course of graduate study. Students are judged on research potential and productivity, as well as on course work. All students are expected to develop research skills appropriate to their programs through a combination of course work, individual study, and experience. One substantial research project must be completed and formally approved by the student's advisory committee before the end of the third semester. Students will present this project as a poster at a department research symposium. A second substantial research project must be completed and approved by the end of the fifth semester. Student research progress will be evaluated annually by the student's advisory and research committees, which will examine progress on first and second research projects, the dissertation research project, and involvement in other research projects. Students who fail to make adequate research progress at any point may be subject to academic probation and dismissal.

### **Course Requirements**

A total of 90 credit hours, including dissertation. Students must complete course selections from the student's area of specialization, usually consisting of approximately 12-15 credit hours from a selection of core courses in a student's major area of study. Unless pursuing a double major, the student is also required to complete an individualized or external minor as approved by the advisory committee. Occasionally, additional courses may be specified by the student's advisory committee at any time before the Qualifying Exam has been successfully passed. Any course requirement discussed above can be waived; such waivers must be approved by the department's Director of Graduate Studies.

Students must also demonstrate competency in four areas of skills requirements before being nominated to candidacy:

- **Statistical Skills Requirement:** Demonstrated proficiency in statistical skills, at a level comparable to successful completion of a graduate course in statistics. This requirement usually will be fulfilled by successful completion of P553. However, with approval from the P553 instructor, the student's advisory committee, and the Director of Graduate Studies, proficiency could be demonstrated in other ways, such as (but not limited to) equivalent coursework from another institution, proficiency through prior research or work experience, and

completion of relevant workshop and training experiences. Courses for this proficiency cannot be double counted towards a Psychological and Brain Sciences major or the minor.

- **Research Methods Skills Requirement:** Demonstrated proficiency in additional research methods, at a level comparable to successful completion of a graduate course in these topics. This requirement usually will be fulfilled by successful completion of one other statistics or methods class approved by the student's advisory committee. However, with approval from the advisory committee and the Director of Graduate Studies, proficiency could be demonstrated in other ways, such as (but not limited to) equivalent coursework from another institution, proficiency through prior research or work experience, and completion of relevant workshop and training experiences. Courses for this proficiency cannot be double counted towards a Psychological and Brain Science major or the minor.
- **Professional Development Skills Requirement:** Demonstrated proficiency in professional development issues. This requirement usually will be fulfilled by taking P595 or Q510. However, with approval from the P595/COGS-Q510 instructor, the student's advisory committee, and the Director of Graduate Studies, proficiency can be demonstrated in other ways, primarily through equivalent coursework from another institution. Courses for this proficiency cannot be double counted towards a Psychological and Brain Sciences major or the minor.
- **Teaching and Dissemination Requirement:** Demonstrated training and proficiency in teaching and dissemination of scientific information. This requirement typically will be fulfilled by taking P660 and designing an individualized proposal written by the student and approved by their advisory committee and the DGS. If a student can demonstrate they had equivalent prior teaching and dissemination experience before entering the program, the above requirements may be waived at the discretion of the DGS. Courses for this proficiency cannot be double counted towards a Psychological and Brain Sciences major or minor. If the competency of the graduate student's teaching, as evaluated by a faculty member supervisor, is judged as inadequate, the student will be asked to take remedial action, which may include additional training in teaching and an additional teaching assignment. International students must meet the department's English proficiency requirements before teaching.

Students completing the APA approved Program in Clinical Psychology must complete one clinical elective courses, at least 6 hours of P690 (practicum training), a one-year internship approved by the clinical science program, and must demonstrate competence in APA specified areas of broad and general training in psychology.

Failure to complete required courses within a timeframe specified by the student's advisory committee may make a student subject to academic probation and dismissal.

## Minor

Doctoral students pursuing a single major may choose to minor outside of the department or to take an in-depth individualized minor within the Department of Psychological and Brain Sciences. If a minor outside the department is elected, the requirements are specified by that unit. An individualized minor within the department consists of at least 9 credit hours of graduate course work in areas, inside or outside the department, other than that of the major. The specific courses making up such a minor must be approved by the student's advisory committee. The individualized minor must also be approved by the University Graduate School. Students pursuing a double major are not required to complete a minor (see General Requirements section of the Graduate Bulletin).

## Qualifying Examination

Written and oral portions of the qualifying exam must be successfully passed by the beginning of the fifth regular semester. Students with a double major may request one additional year before they take the qualifying examination and must successfully pass the exam by the beginning of the seventh regular semester (see General Requirements section of the Graduate Bulletin). Specifically, the written portion of the exam must be completed during the last week of the summer break, with the exact deadline determined by the committee in consultation with the student. The oral portion of the exam must be completed by the end of the second week of classes in the fall term. If a student does not pass the qualifying exam, then by 5 pm on Thursday of the third week of classes, the student must meet with the Director of Graduate Studies to discuss plans and notify the Director of any requested course changes for the fall semester. Students who do not pass the qualifying exam will be given an opportunity to retake the exam within one semester (i.e., by the end of the fifth semester or for double majors by the end of the seventh semester). Students who do not successfully pass their second attempt at the qualifying examination will be dismissed.

## Advisory and Research Committees

Students must identify a major advisor and have an advisor throughout the course of their graduate studies. Student must form an advisory committee by the end of their first year; later in their course of study, students must form a research (dissertation) committee. The student's committee (advisory or research) shall consult with the student, at least once per year, to help determine the student's course of graduate study, develop a research program, approve the student's course selections, and review the student's progress in all areas (for example, but not limited to: completion of required courses, course grades, adequacy of teaching, and research progress). Following each yearly meeting a written report of the meeting must be filed with the Director of Graduate Studies. The student's committee will determine whether or not the student is making adequate progress in all areas. Should the advisory (or research) committee determine that a student is not making adequate progress in any area, this may be grounds for eliminating a student's department funding, probation, or dismissal from the program.

## Ph.D. Minor in Psychological and Brain Sciences

Doctoral students in other departments may elect Psychological and Brain Sciences as an outside minor. A minimum of four courses (12 credit hours) at the graduate level is required. The student must achieve a grade of at least B- in each course and an overall grade point average of at least 3.0. The specific courses must be approved by a faculty advisor who is a faculty member within the Psychological and Brain Sciences department and may include no more than one research course (P895).

## Accreditation Status

The Clinical Science Program in the Department of Psychological and Brain Sciences at Indiana University has been accredited continuously since 1948 by the American Psychological Association Committee on Accreditation. For further information on the program's status you may contact: Committee on Accreditation c/o Office of Program Consultation and Accreditation Education Directorate American Psychological Association 750 First Street NE Washington, DC 20002-4242, (202) 336-5979

## Faculty

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Chair

William P. Hetrick\*

### Associate Chair

Amanda Diekman\*

### Director of Graduate Studies

Amy Holtzworth-Munroe

### Director of Undergraduate Instruction

Rick Hullinger

### Director of Pedagogy

Ed Hirt\*

### Director of Undergraduate Engagement

Lisa Thomassen

## Distinguished Professors

Jerome Busemeyer\*, Robert Goldstone\*, Ken Mackie\*, Robert Nosofsky\*, David B. Pisoni\*, Richard M. Shiffrin\*, Linda B. Smith\*, Olaf Sporns\*

## Linda and Jack Gill Chairs

Andrea Hohmann\*, Hui-Chen Lu\*, Kenneth Mackie\*, Norbert Hajos\*

## Naus Family Chair of Addiction Research

Istvan Katona\*

## Robert H. Shaffer Chair



Olaf Sporns\*

### **Eleanor Cox Riggs Professor**

Aina Puce\*

### **Luther Dana Waterman Professor**

Richard M. Shiffrin\*

### **Rudy Professor**

Bennett Bertenthal\*

### **Sharon Stephens Brehm Endowed Professor**

Brian D'Onofrio\*

### **W.K. Estes Professor**

Michael Jones\*

### **Chancellors' Professors**

Robert L. Goldstone\*, Robert Nosofsky\*, David B. Pisoni\*, Linda B. Smith\*

### **Provost Professors**

Jerome R. Busemeyer\*, Jonathon Crystal\*, Peter Finn\*, John Kruschke, Olaf Sporns\*, Peter Todd\*

### **Professors**

Jeffrey R. Alberts\*, John E. Bates\*, Geoffrey Bingham\*, Heather Bradshaw\*, Joshua Brown\*, Thomas A. Busey\*, Amanda Diekman\*, Joseph Farley\*, Preston Evans Garraghty\*, Jason Gold\*, Karin Harman James\*, William Hetrick\*, Edward R. Hirt\*, Amy Holtzworth-Munroe\*, Kurt Hugenberg\*, Thomas W. James\*, John K. Kruschke\*, Cary Lai\*, Mary Murphy\*, Dale R. Sengelaub\*, Richard Viken\*, Cara L. Wellman\*

### **Associate Professors**

Daniel Kennedy\*, Anne Krendl\*, Ehren Newman, Anne Prieto\*, Robert Rydell\*

### **Assistant Professors**

Richard Betzel\*, Emily Fyfe\*, Dorainne Green, Lorenzo Lorenzo-Luaces\*, Krista Wisner

### **Teaching Professor**

Lisa Thomassen

### **Senior Lecturers**

Richard Hullinger, Benjamin Motz, Cynthia Patton, Alan Roberts, Irene Vlachos-Weber

### **Lecturer**

Kendra Bunner, Krista DeBoeuf, Jonathan Ledbetter, Heather Scherschel

### **Clinical Assistant Professor**

Ke Anne Zhang, Spencer Dawson

### **Distinguished Professor Emeritus**

Eliot Hearst\*, James T. Townsend\*

### **Chancellors' Professors Emeritus**

Steven J. Sherman\*, George V. Rebec\*, Meredith West\*

### **Rudy Professor Emeritus**

James T. Townsend\*, Stanley Wasserman\*

### **Professors Emeritus/Emerita**

James Allison\*, Alexander Buchwald\*, Jerome Chertkoff\*, James C. Craig\*, S. Lee Guth\*, Susan S. Jones\*, Julia R. Heiman\*, Kenneth Heller\*, \*, Richard McFall\*, Brian F. O'Donnell\*, Richard Rose\*, Eliot R. Smith\*, Alfred Strickholm Associate Professor Emeritus

Harold Lindman\*

### **Professor of Practice Emeritus**

Jeffrey Huber

### **Courses**

Courses in the department numbered below P400 are not acceptable as credit toward a graduate degree in psychological and brain sciences. Students in the psychology Ph.D. program may not take a 400-level course for graduate credit if an equivalent higher-level graduate course is available.

Undergraduates may, by consent of the instructor, register in and receive credit for graduate courses (number P500 and above). Ordinarily such consent is not granted unless the student has completed 20 credit hours of psychology.

- **PSY-P 500 Psychology for Graduate Students (3 cr.)** P: Graduate standing or consent of instructor. Basic psychological principles. For students with little or no previous training in psychology.
- **PSY-P 501 Research Issues in Clinical Psychology (3 cr.)** P: Graduate standing in psychology or consent of instructor. A research-oriented survey of psychopathy, assessment, and psychotherapy. Models of psychological disorder; strategies of etiological research; test construction and clinical prediction; research on process and outcomes of psychotherapy. Credit not given for both P501 and P530.
- **PSY-P 502 Developmental Psychology (3 cr.)** P: Graduate standing in psychology or consent of instructor. An advanced introduction to the theory and experimental analysis of ontogenetic processes. Special emphasis on human development.
- **PSY-P 503 Complex Cognitive Processes (3 cr.)** P: Graduate standing in psychology or consent of instructor. A survey of topics in human information processing, including attention, short-term storage, long-term retention, retrieval from memory, concept attainment, problem solving, speech perception, and psycholinguistics.

- **PSY-P 504 Learning and Motivation (3 cr.)** P: Graduate standing in psychology or consent of instructor. Introduction to theory and experimental literature in learning and motivation. Focus on nonhuman behavior.
- **PSY-P 506 Sensory Psychology (3 cr.)** P: Graduate standing in psychology or consent of instructor. Introduction to methods and research in sensory psychology.
- **PSY-P 507 Theories of Learning (3 cr.)** Survey, comparison, and critical analysis of modern theories of learning, from Thorndike to present.
- **PSY-P 510 Principles of Research in Psychology (3 cr.)** Principles of construction and testing of psychological theories; experimental and nonexperimental designs; requirements of valid inference; measurement of psychological constructs; research methods including laboratory studies, surveys, observation methods.
- **PSY-P 514 Methods in Biopsychology (2 cr.)** P: K300 or equivalent, course in laboratory psychology. Training in research techniques in sensory and physiological psychology.
- **PSY-P 516 Internships in Psychological and Brain Sciences (1 to 3 cr.)** P: Consent of instructor. Internships in PBS will provide practical experience in a variety of professional activities pertinent to careers in psychological and brain sciences both inside and outside of academia. Experiential learning and one-on-one interaction with instructors establish an opportunity for students to explore and further refine their professional goals.
- **PSY-P 517 Methods in the Direct Observation of Behavior (3 cr.)** P: P553 or its equivalent. Reviews current use of observational techniques in the study of animal and human behavior, and critically considers the development of coding schemes and strategies of data recording and analysis.
- **PSY-P 519 Current Theories of Personality (3 cr.)** P: Graduate standing, consent of instructor. Original writings of major contemporary theorists of personality.
- **PSY-P 525 Classical Conditioning (3 cr.)** Critical evaluation of experimental literature. Emphasis on methodological and theoretical issues.
- **PSY-P 526 Neurobiology of Learning and Memory (3 cr.)** Comprehensive survey of the cellular and molecular bases of associative and nonassociative forms of learning and memory. Vertebrate and invertebrate model systems and preparations as well as data obtained from the human neuropsychology literature will be studied.
- **PSY-P 527 Developmental Psychobiology (3 cr.)** Ontogeny of sensory-motor behavior and its underlying anatomical and physiological development.
- **PSY-P 528 Experimental Analysis of Economic Behavior (3 cr.)** P: Graduate standing or permission of instructor. Relations between experimental psychology and microeconomics: basic concepts, theory, and research.
- **PSY-P 530 Clinical Psychology (3 cr.)** P: Graduate standing and consent of instructor. Introduction to clinical psychology as an experimental-behavioral science, with an emphasis on theoretical, methodological, and ethical issues basic to clinical research and professional practice.
- **PSY-P 533 Introduction to Bayesian Data Analysis I (3 cr.)** P: Basic calculus (e.g., MATH M212 or equiv.) and computer programming (e.g., CSCI A201 or equivalent). Introduction to Bayesian analysis of data from simple experiment designs using hierarchical models and Monte Carlo methods.
- **PSY-P 536 Theory of Tests and Measurements (3 cr.)** P: P553. Survey of test and measurement procedures; classical test theories, statistical theories; models of tests.
- **PSY-P 534 Introduction to Bayesian Data Analysis II (3 cr.)** P: Basic calculus (e.g., MATH M212 or equiv.) and computer programming (e.g., CSCI A201 or equivalent). Introduction to Bayesian analysis of data from simple experiment designs using hierarchical models and Monte Carlo methods.
- **PSY-P 536 Theory of Tests and Measurements (3 cr.)** P: P553. Survey of test and measurement procedures; classical test theories, statistical theories; models of tests.
- **PSY-P 540 Principles of Psychological Assessment and Prediction (3 cr.)** P: P553-P554 or equivalent. Concepts of validity and reliability. Concepts of validity and reliability. Diagnostic devices viewed as bases for decisions. Classification. Comparison of methods of making predictions about individuals.
- **PSY-P 544 Introduction to fMRI Measurement and Analysis (3 cr.)** P: Graduate student standing. Students will learn the theory and methods of neuroimaging with a particular emphasis on functional MRI. Specific topics include experimental design, data acquisition, data analysis, data interpretation and data presentation. Also covered are introductory MR physics and the physiology of blood oxygen-level dependent (BOLD) changes.
- **PSY-P 546 Neurophysiological Techniques: Theory and Methods (3 cr.)** P: Consent of instructor. Covers theory and methods underlying neurophysiological techniques with a particular emphasis on electroencephalography/event-related potentials and transcranial magnetic stimulation. Specific topics include neurophysiological recording principles, stimulus delivery/experimental design, technical issues, basic data acquisition and analysis techniques and interpretation. Some basic principles of neural source modeling will also be covered. This is a 3 cr. methods graduate course designed for graduate students who are pursuing research projects in neuroimaging. Course content is unique. An alternative 3 cr. methods course for graduate students who are pursuing neuroimaging projects is P650 Neuroimaging: Theory and Methods.
- **PSY-P 552 Special Topics in Social Neuroscience (3 cr.)** P: Consent of instructor. A graduate level seminar-based course offering devoted to current topical issues in social neuroscience, with a particular focus on the functional neuroanatomy and neural mechanisms underlying human social cognition. Individual student assessment is based on presented seminars and class participation. Instructor permission is required for enrollment.

- **PSY-P 553 Advanced Statistics in Psychology I (3 cr.)** P: K300 or equivalent. Statistical inference applied to problems in psychological research. Experimental design and data interpretation. Elementary probability theory, statistical distribution, classical and nonparametric tests of hypotheses, point and interval estimation. Relations between statistical models and experimental controls.
- **PSY-P 554 Advanced Statistics in Psychology II (3 cr.)** P: K300 or equivalent. Statistical inference applied to problems in psychological research. Experimental design and data interpretation. Elementary probability theory, statistical distribution, classical and nonparametric tests of hypotheses, point and interval estimation. Relations between statistical models and experimental controls.
- **PSY-P 557 Representation of Structure in Psychological Data (3 cr.)** P: P553 or consent of instructor. Survey of multidimensional scaling, clustering, choice theory, and signal detection approaches to modeling similarity and classification. Theory and application.
- **PSY-P 560 An Embodied Approach to the Development of Brain and Behavior (3 cr.)** Learning is dependent on our sensori-motor experiences in the world that are determined by brain and body development. In this course, we will critically review primary research articles and book chapters that pertain to how bodily encounters with the environment shape brain development, and thus, human behavior.
- **PSY-P 561 Human Memory (3 cr.)** Research theory and data on human memory and information processing models of memory.
- **PSY-P 564 Psychophysics (3 cr.)** P: P553 or consent of instructor. Classical and modern methods for investigation of sensory-perceptual processes. Application of signal detectability theory to psychophysics; emphasis on current research on detection and recognition of auditory signals in noise.
- **PSY-P 565 Psychophysics of Vision (3 cr.)** P: P553 or consent of instructor. Critical evaluation of research literature on visual functions of brightness, color, and spatial discrimination.
- **PSY-P 569 Stress Effects on Brain and Behavior (3 cr.)** P: NEUS-N 500 and NEUS-N 501 or equivalent, or permission of instructor. Examination of the neural and behavioral effects of stress, from cellular to systems level. Topics include physiology of the stress response, effects of stress across the lifespan, stress effects on learning and memory and its neural substrates, sex differences in stress effects, and stress and psychopathology.
- **PSY-P 590 Readings in Psychological and Brain Sciences (1-6 cr.)** Readings and study in special topics of Psychological and Brain Sciences with guidance from a member, or members, of the faculty.
- **PSY-P 595 First-Year Research Seminar (2-3 cr.)** Presentation and discussion of first-year graduate student research projects.
- **PSY-P 605 Introduction to Mathematical Psychology (3 cr.)** P: P553 or consent of instructor. Current applications of mathematics to psychology.
- **PSY-P 615 Developmental Psychology I (3 cr.)** P: P553 or consent of instructor. An analysis of developmental processes in humans and nonhumans. Emphasis on the study of mechanisms that control the ontogeny of sensory, motor, cognitive, and language systems.
- **PSY-P 620 Attitudes and Attitude Change (3-3 cr.)** P: P320, P511, or consent of instructor. Conceptions of the attitude construct and theories of attitude formation and change.
- **PSY-P 623 Psychology of Language (3 cr.)** Psycholinguistic events, including communicative speech, gestures, and symbolic behavior. Interrelations between linguistic and other psychological processes in individual and social situations.
- **PSY-P 624 Principles of Psychopathology (3 cr.)** P: Graduate standing and consent of instructor. Description of the phenomena of psychopathology and the principles associated with their classification.
- **PSY-P 625 Operant Conditioning (3 cr.)** A survey and interpretation of research findings on problems of systematic interest for a general science of behavior, with emphasis on recent work.
- **PSY-P 631 Intervention and Evaluation (3 cr.)** P: Consent of instructor. A systematic comparison of theories of psychotherapy and behavior change. Introduction to evaluation techniques appropriate to applied settings.
- **PSY-P 634 Advanced Survey of Community Psychology (3 cr.)** P: 15 credit hours of psychology or consent of instructor. A survey of issues and research in community psychology. Topics covered include the role of conceptual models in guiding intervention practices; research in social epidemiology, prevention, consultation, and organizational and community change.
- **PSY-P 637 Neurobiology of Addictions (3 cr.)** P: N500 and N501 and N612 (or permission of instructor). P637 provides students an intensive overview of the fundamentals, state-of-the-art advances, new frontiers, and major gaps in our understanding of the neurobiology of addiction. Applicable to understanding the study of drug/substance and addiction, cellular processes of learning and memory, neuroadaptation, motivation and reward, etc. within neuroscience and psychology.
- **PSY-P 638 Experimental Psychology of Reading (3 cr.)** Examination of the component stages of the reading process. Focuses on how visual information is processed within the framework of information processing and psycholinguistics. Topics to be considered include alphabets, phonetics and phonology, letter recognition, word and sentence processing, cognitive bases of reading, and methods currently employed in teaching reading.
- **PSY-P 640 Science of Moral Judgment (3 cr.)** Survey of recent scientific research on the psychology of moral judgment drawing from social psychology, anthropology, evolutionary biology, ethology, developmental psychology, cognitive psychology, robotics & artificial intelligence, and brain science.

- **PSY-P 641 Assessment (3 cr.)** P: Consent of instructor. Review of research and theory on methods of gathering information about individuals.
- **PSY-P 644 Attention and Short-Term Memory (3 cr.)** Analysis of the experimental literature and theories of human attention and short-term memory, including visual and verbal systems and forgetting.
- **PSY-P 645 Learning and Long-Term Memory (3 cr.)** Analysis of the experimental literature and theories of human learning and long-term memory, including forgetting, organization, sentence memory, and nonverbal memory.
- **PSY-P 647 Decision Making under Uncertainty (3 cr.)** P: P553 or consent of instructor. Detailed survey of decision making under uncertainty. Theories, data, and application of decision making in situations involving imperfect (probabilistic) information; preference and inference in judgment. Applications covered include learning, risky choice, diagnostic decisions, group decisions.
- **PSY-P 648 Choice Behavior (3 cr.)** P: P553 or consent of instructor. Preferential choice under conditions of certainty. Critical review of the properties and limitations of current theories of choice and scaling.
- **PSY-P 650 Neuroimaging: Theory and Methods (3 cr.)** Covers theory and methods of neuroimaging with a particular emphasis on functional MRI. Specific topics include experimental design, data acquisition, data analysis, data interpretation, and data presentation. Also covers introductory MR physics and the physiology of blood oxygen-level dependent (BOLD) changes.
- **PSY-P 651 Perception/Action (3 cr.)** P: Consent of instructor. Coverage includes event perception, optical flow analysis (aperture problem, correspondence problem, structure from motion, sensory psychophysics, contact with machine vision), problems in motor coordination and control (motor equivalence, degrees of freedom problem, contact with physiology of movement and robotics). Focus on the relation between perception and action.
- **PSY-P 654 Multivariate Analysis (3 cr.)** P: P553-P554. Survey of multivariate statistical methods; partial, multiple, and canonical correlation, factor analysis, discriminant analysis, classification procedures, profile analysis, and multivariate analysis of variance.
- **PSY-P 657 Topical Seminar (arr. cr.)** Topics of current interest, with intensive critical examination of appropriate literature. Different staff member in charge each semester.
- **PSY-P 658 Mathematical Models in Psychology I (4 cr.)** P: P605 or consent of instructor. Intensive study of mathematical models employed in experimental psychology: learning, perception, reaction time, social processes. Emphasis on probability methods.
- **PSY-P 659 Mathematical Models in Psychology II (4 cr.)** P: P605 or consent of instructor. Intensive study of mathematical models employed in experimental psychology: learning, perception, reaction time, social processes. Emphasis on probability methods.
- **PSY-P 660 The Teaching of Psychology (1 cr.)** Open to graduate students. This course is designed to help students gain practical skills in the teaching and dissemination of psychological knowledge to a variety of audiences, including to undergraduate students. The course emphasizes skills in writing, speaking, organizing, presenting, and assessing. The skills are intended to be useful in a variety of contexts, but primarily in formal learning environments.
  - **PSY-P 664 Embodied Cognition and Ecological Psychology (3 cr.)** Proponents of "embodied cognition" argue that embodiment should be part of the solution to problems of cognition, perception, and action. J.J. Gibson argued similarly in his Ecological Approach, but Embodied Cognition is not Ecological Psychology. The course addresses Ecological and Embodied approaches to Psychology, their differences and similarities.
- **PSY-P 667 Neuropsychopharmacology (3 cr.)** Analysis of neural mechanisms of drug effects on animal and human behavior, based on behavioral and biological experiments.
- **PSY-P 669 Neurobiology of Behavioral Disorders (3 cr.)** P: N500 and N501, and at least one other graduate course in neuroscience or behavioral neuroscience. Neural mechanisms underlying selected neurological and psychological dysfunctions.
- **PSY-P 686 Current Psychological Literature I (1 cr.)** Review of current psychological journals.
- **PSY-P 687 Current Psychological Literature II (1 cr.)** Review of current psychological journals.
- **PSY-P 690 Practicum in Clinical Psychology (arr. cr.)** P: Consent of instructor. Review of current psychological journals.
- **PSY-P 695 Second-Year Research Seminar (1-2 cr.)** Presentation and discussion of second-year graduate student research projects.
- **PSY-P 700 Research and Theory in Social Psychology (0-2 cr.)** Selected topics. No more than 12 credits can be counted toward the graduate degree.
- **PSY-P 701 Research and Theory in Developmental Science (0-2 cr.)** Selected topics. No more than 12 credits can be counted toward the graduate degree.
- **PSY-P 702 Grant Writing the NRSA (3 cr.)** Course goals include understanding the grant process, conceptualizing a fundable project, and learning the steps from good idea to writing a fundable proposal, including avoiding common mistakes. Specifically designed for F31 (NIH Individual Predoctoral fellowship) or an F32 (NIH Individual Postdoctoral fellowship) grants but a good introduction to grant writing in general.
- **PSY-P 717 Evolutionary Bases of Learning (3 cr.)** P: Written consent of instructor. Examines learning as an evolved ability which equips organisms to deal with predictable variability in the environment. Compares ethological, comparative, and general process approaches to the study of learning.

- **PSY-P 720 Dyadic Interaction (3 cr.)** P: P320, P511, or consent of instructor. General models of dyadic interaction; theories and research on affiliation, interpersonal attraction, and the development, maintenance, and dissolution of social relationships.
- **PSY-P 721 Group Processes (3 cr.)** P: P320, P511, or consent of instructor. Theories and research on intergroup processes. Topics will vary but may include social identification, stigmatization, power differentials, group decision making, conformity, minority influence, norms, social dilemmas, intergroup conflict.
- **PSY-P 734 Community Intervention (3 cr.)** Theories and concepts of change in community systems. Ecological conceptions of human adaptation. Research methods for defining problems, monitoring processes and assessing outcomes of changes in social systems. Models of intervention with emphasis on community participation, collaboration and accountability.
- **PSY-P 736 Child Psychopathology (3 cr.)** Seminar on serious behavior disturbances of children. Comparisons with development of normal child interacting with family.
- **PSY-P 747 Seminar in Cognitive Psychology (1-3 cr.)** Selected topics.
- **PSY-P 820 Social Perception (3 cr.)** P: Graduate standing in psychology or consent of instructor. Critical review of theoretical and experimental literature concerning knowledge of others as intervening variable in social behavior.
- **PSY-P 895 Research (arr. cr.)** \*\*These courses are eligible for a deferred grade.
- **PSY-P 898 Master's Degree Research (arr. cr.)** \*\*These courses are eligible for a deferred grade.
- **PSY-P 899 Ph.D. Degree Research (arr. cr.)** \*\*These courses are eligible for a deferred grade.
- **PSY-G 901 Advanced Research (6 cr.)** This course is eligible for a deferred grade. Students who have completed 90 credit hours and all requirements for the Ph.D. are eligible to enroll in G901 for a flat fee. G901 is not offered in the summer and is limited to a maximum of six semesters. For verification of eligibility and to receive a class permission, please contact the Academic Services Coordinator.

## Public Affairs

### School of Public and Environmental Affairs

Departmental E-mail: [speainfo@indiana.edu](mailto:speainfo@indiana.edu)

(Note: Be sure to specify the program in which you are interested when sending mail.)

Departmental URL: <http://www.indiana.edu/~spea/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

### Degrees Offered

Doctor of Philosophy in Public Affairs; Doctoral Minors in Nonprofit Management, Public Management.

### Doctor of Philosophy in Public Affairs

The Doctoral Program in Public Affairs was created to take advantage of the unique strengths of SPEA's interdisciplinary faculty and research programs, both of which have earned wide recognition from peer institutions, national and international agencies, and professional groups. The curriculum equips students with the necessary skills for independent research and analysis of problems, issues, and solutions in government and the nonprofit sector in the following four major fields:

1. **Public Finance:** the theory and practice of fiscal administration, including public budgeting, revenue administration, and financial management;
2. **Public Management:** the design and operation of governmental institutions, including strategic/operations management and interrelationships between public and private organizations;
3. **Public Policy Analysis:** research methods and quantitative techniques for policy analysis, including the content, design, and evaluation of public programs; and
4. **Environmental Policy:** the study of and contribution to public policies that affect the environment, both domestic and international, including legal, economic, and other policy tools and approaches.

Instead of being grounded in a traditional academic discipline, each of the fields has developed from several theoretical literatures applied to real-world public affairs problems. Although research is grounded in the social sciences, the context of inquiry reverses the normal research process. Instead of beginning with questions originating with discipline-based scholarship, the research process begins with public problems and issues. The research challenge, then, is to match available tools of inquiry to the research opportunities presented by problems.

### Admission

Students apply to the School of Public and Environmental Affairs; those accepted are recommended to the University Graduate School for formal admission into the Ph.D. program. Application materials can be found at <http://graduate.indiana.edu/admissions/apply.shtml>. Applicants to this program must have completed at least a bachelor's degree. Prospective students are required to submit (1) a statement of purpose, which should be as specific as possible and preferably should refer to potential research mentors by name; (2) official results of the Graduate Record Examinations (GRE); (3) official transcripts of all undergraduate and graduate work completed; and (4) three letters of recommendation. Applicants whose native language is not English must also submit results of the Test of English as a Foreign Language (TOEFL).

### Degree Requirements

The Ph.D. in Public Affairs degree requires the completion of at least 90 credit hours in advanced study and research beyond the baccalaureate. Typically, two-thirds of the 90 credit hours are taken in formal course work and one-



third in thesis credit. Students completing a Master's in Public Affairs at the School of Public and Environmental Affairs may be allowed to transfer some of their graduate course work (36 hours maximum), or similar degree may be allowed to transfer some of their graduate course work (30 hours maximum) if approved by their Progress Review Committee, though a prior Master's degree is not required for admission.

### Core Requirements

The following six courses are required for all Public Affairs students:

- SPEA-M 772 Public Organization and Management II (3 cr.)
- SPEA-P 790 Seminar in Public Policy Process (3 cr.)
- SPEA-P 710 Topics in Public Policy – Microeconomics for Public Policy (3 cr.)
- SPEA-V 706 Statistics for Research in Public Affairs I (3 cr.)
- SPEA-V 707 Statistics for Research in Public Affairs II (3 cr.)
- SPEA-V 780 Research Design and Methods in Public Affairs (3 cr.)

Students must take these six courses during their first year in the program.

In addition to the six courses listed above, the following two courses are required for all Public Affairs students:

- SPEA-V 721 Seminar in Teaching Public and Environmental Affairs (2 cr.) This course prepares students for college teaching and their professional responsibilities toward current and future students. It is taken in the student's second year in the program.
- SPEA-P 791 Workshop in Public Policy (0 -1 cr.) Each student is required to take this zero to one credit hour course for credit for three semesters. The workshop provides an experiential base that prepares students to critique research in the field, prepare manuscripts for publication, and to defend new ideas and theories. The course meets once a week for 90 minutes.

### Research Tool Skills

Students must take SPEA-V 706, SPEA-V 707 and SPEA-V 780 as part of the core requirements. In addition, students must demonstrate either (1) advanced proficiency in quantitative analysis or specialized research skills by completing two additional courses approved by the student's Progress Review Committee, or (2) proficiency in a language appropriate to his/her field of study and approved by the Progressive Review Committee. To qualify as language-proficient, a student must take a language proficiency exam from the appropriate language department at Indiana University.

### Major Fields

Students select one of the four SPEA Public Affairs major fields (identified below) to prepare for their qualifying examinations. For each field, the student must complete required courses and approved electives.

The fields and the required courses are:

**Public Management**—The design and operation of government and not-for-profit institutions, including strategic/operations management and interrelationships between public, private, and civil society organizations.

Required courses:

- SPEA-M 771 Public Organization and Management I (3 cr.)
- SPEA-P 710 Topics in Public Policy – Public Organization and Management III (3 cr.)
- SPEA-P 710 Modern lines of research in public management (3 cr.)

**Public Finance**—The theory and practice of fiscal administration, including public budgeting, revenue administration, and financial management.

Required courses:

- SPEA-F 766 Public Revenue (3 cr.)
- SPEA-F 768 Seminar in Public Budgeting (3 cr.)
- SPEA-F 785 Research Seminar in Public Debt (3 cr.)

**Public Policy Analysis**—Research methods and quantitative techniques for policy analysis, including the content, design, and evaluation of public programs.

Required courses:

- SPEA-P 562 Public Program Evaluation (Doctoral) (3 cr.)
- SPEA-P 764 Seminar in Policy Analysis (3 cr.)
- SPEA-P 723 Public Programs – Theory and Evidence (3 cr.)

**Environmental Policy**—Economic, law, politics, and implementation of environmental policies in the U.S. and abroad.

Required courses:

- SPEA-P 710 Topics in Public Policy: Domestic Environmental Policy (3 cr.) **or** SPEA-P 710 Topics in Public Policy: International Environmental Policy (3 cr.)
- SPEA-R 625 Environmental Economics (3 cr.)
- SPEA-R 645 Environmental Law (3 cr.) **or** LAW-B 783 International Environmental Law (3 cr.)

### Minor Field

Students select a minor field according to their research interests, which must be approved by the Director of the Public Affairs PhD Program.

- As a minor field, students may choose any one of the four major fields (public management, public finance, public policy analysis, and environmental policy) or one of the minor fields (arts administration, environmental studies, health policy, nonprofit and civil society, regional economic development, and urban affairs) offered by SPEA. A four-course sequence (12 credit hours) is negotiated between the student and the Progress Review Committee. There is no examination for the minor field.
- If approved by the Director of the Public Affairs PhD Program, a student can pursue a self-designed minor that furthers their individual research interests. The self-designed minor is a four-course sequence (12 credit hours) negotiated between the student and

the Progress Review Committee, which must contain at least two SPEA doctoral seminars. There is no examination for the self-designed minor field.

Courses taken as part of any minor field cannot count toward a major field.

## **Major Junctures**

### **Preliminary Exam**

Students must take the first six core requirement courses during their first year in the program. At the end of their first year, students are required to sit for a preliminary exam on material covered in these six courses. The core faculty will meet to assign grades of pass, qualified pass, or fail on this exam. Students receiving a qualified pass will be required to re-take portions of the exam. Students who receive a fail on the exam will be required to retake the entire exam. Students will receive a pass or fail on the retake. Those who fail will not be allowed to continue in the program.

### **Progress Review Committee**

Early in the student's program, but in no case later than the third semester in the program, the student must form a progress review committee. The committee consists of four to five members and includes at least two faculty members from the student's chosen major fields of study and also a representative of his or her minor field. The committee members act as mentors and help monitor the selection and fulfillment of program requirements. The chairperson of the committee serves as the student's principal advisor.

At the end of the first year, the student develops a Progress Review Committee. The committee, in cooperation with the student, defines program objectives, supervises the selection and completion of the minor field, and monitors overall progress toward completion of course work requirements. Members of the Progress Review Committee should be scholars who know the student's academic record and who are recognized experts in the field in which the student will stand for examination. The committee will consist of four to five members chosen by the student in consultation with the director of the Ph.D. program. At least two members of the Progress Review Committee will be chosen from the student's major field. It is required that one member of the Progress Review Committee be a professor and represent the inside or outside minor.

### **Third-Semester Review**

During the third semester, each student holds a third semester review meeting with the Progress Review Committee. The purpose of the meeting is to reach an agreement between the student and the committee about the character and status of the student's program. This meeting also serves as a formal evaluation of the student's performance and prospects and includes a presentation of a research paper prepared by the student.

Before the meeting of the Progressive Review Committee, the student develops a Progress Review Statement. The statement needs to include background professional and educational information, course work completed and planned in each concentration and for basic and advanced tool skills, and tentative dates for taking the qualifying

exam and a discussion of a proposed dissertation topic. Once approved by the committee, the statement serves as a contract for the completion of degree requirements.

In the progress review meeting, the committee members review the student's record of past and planned courses, the likely dissertation topic, and the quality of the research paper and its presentation. The committee determines whether the proposed program of courses will prepare the student for the examination to be taken at the end of the course work as well as for the dissertation.

### **Third Year Paper**

During the spring semester of the third year, each student will prepare an original research paper to present before the Progress Review Committee. The committee will evaluate the quality of the paper and its presentation. The principal objective of the research paper is to allow the faculty to judge whether the student has the ability to complete all requirements for this research-oriented degree in a timely fashion. Thus, of most importance will be that the paper demonstrates the student's ability to carry out reasonably independent research and write the results in a well-reasoned and coherent fashion. The paper should also demonstrate that the student has a good command of the literature in the area and has the ability to use appropriate research methods in carrying out the analysis. It is anticipated that the progress review paper will be a revision of a substantial research paper prepared to fulfill a requirement for a regular course. (The student can, however, submit an entirely new paper to fulfill this requirement.) The paper should be of a quality warranting presentation at a professional society meeting.

### **Qualifying Examinations**

Students are required to sit for qualifying exams in their major field. SPEA field exams employ a standard format for all students in a field and are offered at predetermined times each year. Each exam is administered by a team of faculty and organized by an exam coordinator for each field. Students will receive a high pass, pass, qualified pass, or a fail for each of the two exams. Students receiving a qualified pass will be asked to re-take portions of the exam, or complete an oral examination. Upon completion of the exam, signatures of the Committee members and Program Director are required on the Report of Preliminary Examination Committee form. If there is an exam requirement in the minor department, then you must also complete a third exam.

### **Dissertation**

After filing for candidacy status, the doctoral candidate forms a Research Committee consisting of at least four faculty members, including one representative of the candidate's minor field. This committee may be but is not necessarily identical to the Progress Review Committee. The selection of Research Committee members should reflect the dissertation topic and the expertise of the faculty chosen.

The candidate prepares a dissertation proposal to present and defend in a meeting of the Research Committee. The Research Committee reviews the research proposal and requires changes as needed.

Once the dissertation research is completed, the candidate defends the thesis in an open oral examination

meeting. The Research Committee is ultimately responsible for determining whether the dissertation is acceptable.

### Placement

The Indiana University School of Public and Environmental Affairs Ph.D. in Public Affairs is ranked as high as #1 among public affairs Ph.D. programs in the United States by the National Research Council. The program is able to recruit highly skilled and talented doctoral students and place graduates in some of the most prestigious public affairs programs in the United States and abroad. Graduates of the program now serve (or once served) on the faculties of Syracuse University, University of Georgia, University of Kansas, University of Washington, Ohio State University, University of Arizona, Dartmouth College, North Carolina State University, Brigham Young University, University of South Carolina, DePaul University, University of Colorado, Iowa State University, Cleveland State University, Yonsei University, University of Hong Kong and National University of Taipei. In addition, the program enjoys broad support from the faculty.

### Ph.D. Minor in Arts Administration (12 credit hours)

The Ph.D. minor should be negotiated with the School of Public and Environmental Affairs (SPEA) and Doctoral Advisor in Arts Administration.

For a more research-oriented minor, the student should work with the SPEA Director of Doctoral Programs to construct an independent minor including doctoral research seminars.

Students may take any arts administration courses to fulfill the requirement (substitutions may be arranged with the Doctoral Advisor in Arts Administration).

### Course Options:

- Y502 Introduction to Arts Administration and Organizational Behavior
- Y504 Arts Organizations in the Public and Private Sectors
- Y505 Programming in the Performing Arts
- Y506 Curating for Museums and Galleries
- Y508 Performing Arts Organization Management
- Y511 Performing Arts Center Management
- Y515 Financial Management for the Arts
- Y522 IT Applications for the Arts
- Y526 Arts and Social Change
- Y530 Audience Development and Marketing the Arts
- Y551 Cultural Planning and Urban Development
- Y558 Fund Development for Nonprofit Organizations
- Y559 Public Policy and the Arts
- Y562 Legal Issues in the Arts
- SPEA-N525 Management for the Nonprofit Sector
- Y500 Topics courses (topics vary from semester to semester) Current topics include: Arts Education Policy, Arts Entrepreneurship, Arts Writing and Advanced Marketing, , Graphic Design, The Film Industry.
- In short: students choose four courses in consultation with the MAAA program director, and

there is no comprehensive exam associated with the minor.

### Ph.D. Minor in Health Policy (12 credit hours)

Students in doctoral programs at Indiana University may, with the consent of their advisory committee, select public management as an outside minor.

### Requirements

Doctoral students from other programs must secure an advisor from the faculty of the O'Neill School of Public and Environmental Affairs. The faculty advisor will serve as the representative of SPEA in all examinations and other requirements of the student's Ph.D. program that pertain to the minor.

The minor in health policy requires 12 credit hours of courses approved by the advisor. Three of the four courses must be SPEA courses. The additional course may come from SPEA or from any of a variety of disciplines relevant to health policy.

Required: the course below

- SPEA-V 710 Research Seminar in Health (3 cr.)

and 3 of the following 6 courses (at least 2 of which must be taken within SPEA):

- SPEA-H 526 Healthcare Finance (3 cr.)
- SPEA-H 524 Health Industry Regulation (3 cr.)
- SPEA-H 525 Health Economics for Policy and Management (3 cr.)
- SPEA-H 549 Health Policy (3 cr.)
- SPH-B 685 Public Health Policy and Politics (3 cr.)
- SPH-B 703 Acquiring External Funds for Research (3 cr.)

A minimum cumulative grade point average of 3.0 (B) must be attained in all courses used for the minor.

Special requirement for 500-level courses. Students taking a 500-level course are required to show that they have completed doctoral-level work in conjunction with the course in order to count the course for the minor. These courses will have H710 versions created. Students must alert the instructor to their doctoral status and request additional/alternative assignments. If the instructor is unwilling to do this, the student should select a different course in conjunction with the candidate's advisor.

### Ph.D. Minor in Nonprofit and Civil Society (12 credit hours)

Students in a Ph.D. program at Indiana University may select nonprofit management as an outside minor.

The nonprofit and civil society minor enables students to broaden their field of study by enhancing their knowledge of management and governance issues in the nonprofit sector. Students pursuing the minor in nonprofit management are able to develop and address research agendas incorporating questions related to nonprofit organization and their management.

### Course Requirements

Doctoral students from other programs must secure an advisor from the faculty of the O'Neill School of Public and Environmental Affairs. The faculty advisor will serve as the representative of O'Neill in all examinations and other

requirements of the student's Ph.D. program that pertain to the minor.

The minor in Nonprofit and Civil Society requires 12 credit hours of courses approved by the advisor. Three of the four courses must be SPEA courses. The additional course may come from SPEA or from any of a variety of disciplines relevant to nonprofit management. Some examples of courses appropriate for the SPEA minor in nonprofit management are listed below.

A minimum cumulative grade point average of 3.0 (B) must be attained in all courses used for the minor.

#### Course options (not an inclusive list):

- SPEA-F 526 Financial Management for Nonprofit Organizations (3 cr.)
- SPEA-M 602 Strategic Management of Public and Nonprofit Organizations (3 cr.)
- SPEA-M 772 Public Organization and Management II (3 cr.)
- SPEA-N 521 The Nonprofit and Voluntary Sector (3 cr.)
- SPEA-N 523 Civil Society and Public Policy (3 cr.)
- SPEA-N 524 Civil Society in Comparative Perspective (3 cr.)
- SPEA-N 534 NGO Management for International Development (3 cr.)
- SPEA-N 557 Proposal Development and Grant Administration (3 cr.)
- SPEA-N 558 Fund Development for Nonprofits (3 cr.)
- SPEA-V 559 Principles and Practices of Social Entrepreneurship (3 cr.)
- SPEA-N 720 Doctoral Seminar in Nonprofit Management Research and Theory (3 cr.)
- SPEA-P 562 Public Program Evaluation
- SPEA-P 791 Workshop in Public Policy

#### Ph.D. Minor in Public Management (12 credit hours)

Students in doctoral programs at Indiana University may, with the consent of their advisory committee, select public management as an outside minor.

#### Requirements

1. The doctoral candidate must secure an advisor from the faculty of the School of Public and Environmental Affairs. The faculty advisor serves as the representative of SPEA in all examinations and other requirements of the student's Ph.D. program that pertain to the minor.
2. The student must take at least 12 credit hours of SPEA graduate-level courses in public management. The choice of courses must be approved by the advisor.
3. A cumulative grade point average of at least 3.0 (B) must be maintained.

#### Ph.D. Minor in Regional Economic Development (12 credit hours)

The minor field in regional economic development involves study in the topics facing regional planners, developmental specialists, and researchers; and an introduction to the body of knowledge in regional development and urban policy. The study of regional economic development and urban policy broadens students' perspectives, and

students may apply this knowledge to a research agenda that incorporates regional developmental and urban policy questions. The student is expected to have studied both micro- and macroeconomics before beginning the minor program.

#### Requirements

1. The director of the Institute for Development Strategies serves as minor advisor. The advisor ensures that prerequisites have been met and certifies that the candidate has met the requirements of the minor. An examination may be required at the discretion of the advisor.
2. The candidate must take at least 12 credit hours of approved courses, which must include 2 core courses and 6 credit hours of electives. The core curriculum consists of SPEA-V 622 Urban Economic Development and SPEA-V 669 Economic Development, Globalization, and Entrepreneurship. This course is cross-listed as GEOG-G 817 Seminar in Regional Geography. The elective courses may come from a variety of disciplines, and must be selected in consultation with and approved by the student's minor advisor. One of the two electives may be outside of SPEA.
3. A cumulative grade point average of at least 3.0 (B) must be maintained.

#### Ph.D. Minor in Urban Affairs (12 credit hours)

Students in doctoral programs at Indiana University may, with the consent of their advisory committee, choose urban affairs as an outside minor. The minor is flexible and is designed by students and their advisors in accordance with students' needs.

#### Requirements

1. The doctoral candidate must secure an advisor from the faculty of the School of Public and Environmental Affairs. This faculty advisor serves as the school's representative in all examinations or other minor program requirements of the candidate's Ph.D. program. The advisor determines the character of the minor examination (if any), participates in the candidate's oral examinations, and certifies that the candidate has met the requirements of the minor.
2. The candidate must take at least 12 credit hours of graduate-level courses related to urban affairs. The selection of courses must be approved by the candidate's SPEA advisor.
3. A cumulative grade point average of at least 3.0 (B) must be maintained.

#### Special Requirement for 500-level Courses

1. Regardless of the minor chosen, students taking a 500-level course (and SPEA-M 602) are required to show that they have completed doctoral-level work in conjunction with the course in order to count the course for the minor. Students must alert the instructor to their doctoral status and request additional/alternative assignments. If the instructor is unwilling to do this, the student should select a different course in conjunction with the candidate's advisor.

#### Faculty

**Dean**

John D. Graham

**Director**

Professor Sean Nicholson-Crotty \*

**Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

**University President Emeritus**

Adam Herbert, John W. Ryan\*

**Arthur F. Bentley Professor**

Elinor S. Ostrom\*

**Chancellor's Professors**

John L. Mikesell\* (Emeritus), James L. Perry\* (Emeritus), William M. Plater\* (Emeritus) (Indianapolis)

**Distinguished Professors**

David B. Audretsch\*, Ronald A. Hites\*

**Professors**

Robert Agranoff\* (Emeritus), A. James Barnes\*, Wolfgang Bielefeld\* (Emeritus) (Indianapolis), Lisa Blomgren Amsler\*, William R. Black\* (Emeritus), Charles Bonser\* (Emeritus), Christopher B. Craft\*, Sergio Fernandez\*, Beth Gazley\*, Kirsten A. Grønberg\*, Hendrick M. Haitjema\* (Emeritus), Brad Heim, Sheila Sues Kennedy\* (Indianapolis), Robert Kravchuk\*, Leslie Lenkowsky\* (Emeritus), Eugene B. McGregor\* (Emeritus), Vicky Meretsky\*, Michael McGuire\*, Debra J. Mesch\* (Indianapolis), Theodore K. Miller\* (Emeritus), Sean Nicholson-Crotty\*, Patrick O. O'Meara\* (Emeritus), Clinton V. Oster\* (Emeritus), John R. Ottensman\* (Indianapolis), Roger B. Parks\* (Emeritus), James Perry\* (Emeritus), Maureen Pirog\* (Emeritus), J. C. Randolph\* (Emeritus), Rafael Reuveny\*, Edwardo L. Rhodes\* (Emeritus), Barry M. Rubin\* (Emeritus), Richard S. Rubin\* (Emeritus), Michael Rushton\*, Roy Shin\* (Emeritus), Kosali Simon\*, Phillip S. Stevens\*, Thomas Stucky\* (Indianapolis), Tim A. Tilton\* (Emeritus), Jeffrey R. White\*, Lois Recascino Wise\* (Emerita), Charles Kurt Zorn\*

**Associate Professors**

Claudia Avellaneda\*, Matthew Baggetta, Terry L. Baumer\* (Emeritus) (Indianapolis), Lehn Benjamin\* (Indianapolis), Jennifer Brass, Sanya Carley\*, Crystal A. Garcia\* (Indianapolis), Beth A. Gazley, Michael Gleeson\* (Emeritus) (Indianapolis), , David Henning Good\*, Jeff Gruenewald (Indianapolis), Diane S. Henshel\*, G. Roger Jarjoura\* (Indianapolis), Craig L. Johnson\*, David Konisky\*, Kerry Krutilla\*, Deanna Malatesta\*, Ashlyn Nelson\*, Jill Nicholson-Crotty\*, Douglas Noonan (Indianapolis), D. Jeanne Patterson\* (Emerita), Flynn W. Picardal\*, Jonathon Raff, Kenna F. Quinet\* (Indianapolis), Ken R. Richards\*, Justin Ross\*, Todd Royer\*, Dan Simon\*, Anh Tran

**Assistant Professors**

Shahzeen Attari, Julia Carboni (Indianapolis), Deanna Carson (Indianapolis), Jeremy Carter (Indianapolis), Cali

Curley (Indianapolis), Jamie Daniel (Indianapolis), Sameeksha Desai, Jerome Dumortier (Indianapolis), Denvil Duncan, Seth Freedman, Brad Fulton, Eric Grommon (Indianapolis), Jeff Gruenewald (Indianapolis), Catherine Herrold (Indianapolis), Alex Hollingsworth, Antung A. Liu, Cullen C. Merritt (Indianapolis), Kimberly Novick, Seth B. Payton (Indianapolis), Victoria Perez, Bradley R. Ray (Indianapolis), Amanda Rutherford, Abdul-Akeem Sadiq (Indianapolis), Allison Schnable, Joesph Shaw, Marlene Walk (Indianapolis), Adam Ward, Coady Wing, Joanna Woronkowski

**Academic Advisor**

Professor Sean Nicholson-Crotty\*, SPEA 441, (812) 855-2457

**School of Public Health****School of Public Health-Bloomington**

Departmental E-mail: [sph@indiana.edu](mailto:sph@indiana.edu)

Departmental URL: [www.publichealth.indiana.edu](http://www.publichealth.indiana.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff uses only those requirements contained in *The University Graduate School Bulletin*.)

**Curriculum**

Curriculum

Courses

Faculty

**Degrees Offered**

The Doctor of Philosophy (Ph.D.) is a research degree especially designed to prepare graduates for careers devoted to the following fields of study: biostatistics, environmental health, epidemiology, health behavior, leisure behavior, and human performance. There are four emphases under human performance: biomechanics, exercise physiology, motor learning/control, and sport management.

In addition, the School of Public Health offers the following graduate degrees: Master of Public Health, Online Master of Public Health, Master of Science in Applied Health Science, Master of Science in Biostatistics, Master of Science in Environmental and Occupational Health, Master of Science in Kinesiology, Master of Science in Athletic Training, and Master of Science in Recreation. Dual degrees include, (1) Master of Public Health and Juris Doctorate, (2) Master of Public Health and Master of Arts in Russian and East European Studies (3) Master of Public Health and Master of Arts in African Studies, and (4) Master of Public Health and Master of Arts in Caribbean, and Latin American Studies. For dual degrees, students must be admitted by both units. For full information on degrees, see this Bulletin and the

**Special School Requirements**

(See also general Graduate School requirements.)

**Doctor of Philosophy****Admission Requirements**

Applicants for the Ph.D. in biostatistics, environmental health, epidemiology, health behavior, human



performance, or leisure behavior must possess an appropriate academic background in the physical, biological, social, and behavioral sciences. Prescribed deficiency work ordinarily cannot be counted among credits required for the degree. Other admission criteria are grade point averages earned in all undergraduate and graduate work, scores on the Graduate Record Examination General Test, and letters of recommendation from professors or others who are able to evaluate the applicant's potential for success in advanced graduate study. Admission applications can be completed online. For application instructions, please visit: .

### Course Requirements

A minimum of 90 graduate-level semester credits are required beyond the baccalaureate degree, including:

- a major area of emphasis (minimum 30 credits).
- research skills courses in statistics and research methodology (minimum 9 credits).
- at least one minor (minimum 9 credits).
- supportive electives.
- dissertation (20-30 credits).

Deficiencies in course work must be removed during the first year of study.

A minimum of 9 credits, excluding courses taken to complete the research and languages requirement, must be taken to fulfill the student's doctoral minor requirements.

A maximum of 30 credits from another institution may be transferred for application to a doctoral degree. Each student's faculty advisory committee must approve courses before they may be transferred from another institution for use in the doctoral degree.

Frequent involvement in research projects (with or without academic credit) is essential to the program.

### Grades

All doctoral students must maintain a grade point average of at least 3.0 (B). Grades of C- (1.7) and below will be calculated in the student's grade point average, but courses in which such grades are earned cannot be counted toward degree requirements. A minimum grade of 3.0 (B) is required in each course used to satisfy the research skill requirement. A minimum of grade of 3.0 (B) is required in each course which is transferred from another institution for use in the doctoral degree. Courses from another institution, with grades of S (satisfactory) or P (passing) may not be transferred for use in the 90 credits required for the degree.

### Common Prerequisite

All Ph.D. degree students in the School of Public Health-Bloomington must complete a 0-credit Public Health Foundations course no later than the end of their first semester of graduate study. Complete details and registration information for this course can be found at the following Website: : <https://iu.instructure.com/enroll/MNG3L6>.

### Common Requirement for the Ph.D. degrees in Environmental Health, Epidemiology, and Health Behavior

All Ph.D. degree students in Biostatistics, Environmental Health, Epidemiology, and Health Behavior, are required to complete SPH-E 651, Epidemiology (3 cr.), or its equivalent.

Each Ph.D. degree student's advisory committee will determine where the required epidemiology course will count in each student's 90 required credits.

### Ph.D. degree course work components

#### Foreign Language/Research-Skill Requirement

School of Public Health-Bloomington Ph.D. degree students in all majors except for Biostatistics and Epidemiology may complete this requirement in one of the following two ways:

1. completion of an approved combination of research skill course work (9-credit minimum).
2. reading proficiency in one foreign language plus completion of a minimum of 5 credits of approved research skill course work.

Ph.D. degree students in Biostatistics may complete this requirement in the following way:

The following courses must be taken within the School of Public Health-Bloomington. No substitutions and transfer equivalency will be allowed for the following courses.

- completion of a minimum total of thirteen credits (13 cr.), including:

1. SPH-Q 794 Doctoral Seminar in Biostatistics (a minimum 4 cr., 1 cr per semester)
2. SPH-Q 711 Advanced Biostatistical Computing (3 cr.)

The following courses should be taken within the School of Public Health-Bloomington, or transferred from previous graduate work contingent upon approval of advisory committee:

3. Additional coursework prescribed by the doctoral advisory committee (6 cr.)

Ph.D. degree students in Epidemiology may complete this requirement in the following way:

- completion of a minimum total of thirteen credits (13 cr.), including:
  1. Courses providing required skills to conduct research such as E-670 Meta-analysis and Systematic Review, Q-604 Applied Linear Regression, or other advanced biostatistics course. (9 cr.)
  2. SPH-E 794 Doctoral Seminar in Epidemiology (a minimum 4 cr., 1 cr. per semester)

### Ph.D. Majors

#### Ph.D. track in Biostatistics

For each doctoral student in this academic program, 21 of the 30 required major credits are prescribed in this bulletin. The student's faculty advisory committee individually prescribes the remaining 9 major credits.

The PhD program in Biostatistics is designed train independent researchers who will advance the field of biostatistics, including the development of innovative methodologies and the application of new and existing methods to health-related questions. The students will receive fundamental training in probability and statistical theory, regression models, and statistical computing.

They will also gain expertise in modern topics such as statistical learning, statistical genetics and genomics, high-dimensional models, clinical trials, and research rigor and reproducibility. Our program also emphasizes research in interdisciplinary areas, effective collaboration and communication with scientists and practitioners, and ability to teach biostatistics. The training and experience of our students will prepare them to be application savvy and leadership-ready for careers in academia, government and industry.

The requirements for the biostatistics major are as follows:

- SPH-Q 703 Generalized Linear Models (3 cr.)
- SPH-Q 752 Advanced Biostatistical Inference (3 cr.)
- SPH-Q 651 Applied Probability and Distribution Theory (3 cr.)
- SPH-Q 652 Biostatistical Inference (3 cr.)
- SPH-Q 604 Applied Linear Regression (3 cr.)
- SPH-Q 605 Analysis of Multi-level and Longitudinal Data (3 cr.)
- SPH-Q 612 Survival Analysis (3 cr.)

#### **Ph.D. track in Environmental Health**

For each doctoral student in this academic program, a faculty advisory committee individually prescribes a minimum of 30 credits of courses which the student must complete in the environmental health major. The prescribed course work focuses on influences and effects of environmental factors on human health and disease. The prescribed research skill courses, along with those courses prescribed in the major, minor, and elective portions of each student's course prescription, are selected to provide students with the scientific, technological, policy, and management skills needed to address environmental, toxicological, and occupational health concerns. This program exists to prepare health scientists to conduct lab-based research and share the results in an effort to advance the discipline of environmental health.

#### **Ph.D. track in Epidemiology**

For each doctoral student in this academic program, 24 of the 30 required major credits are prescribed in this bulletin. The student's faculty advisory committee individually prescribes the remaining 6 major credits. When appropriate, the student's faculty advisory committee may approve the substitution of other course work for required major courses listed below. The prescribed major course work focuses on distribution and patterns of health-events and provides statistical methodology on topics in human health. The prescribed research skill courses, along with those courses prescribed in the major, minor and elective portions of each student's course prescription, are selected to prepare the student to design and conduct research yielding advancements in the field of epidemiology.

The requirements for the epidemiology major are as follows:

- SPH-E 658 Intermediate Epidemiology (3 cr.)
- SPH-E 659 Intermediate Epidemiological Methods (3 cr.)
- SPH-Q 612 Survival Analysis (3 cr.)
- SPH-Q 603 Categorical Data Analysis (3 cr.)

- SPH-Q 605 Statistical Analysis of Multi-level and Longitudinal Data (3 cr.)
- SPH-E 758 Advanced Epidemiology (3 cr.)
- SPH-E 759 Advanced Epidemiological Methods (3 cr.)
- SPH-E 790 The Logic and Rationale of Epidemiologic Research: Advanced Research Methodology (3 cr.)
- Epidemiology major coursework to be prescribed by the doctoral advisory committee (6 cr.)

#### **Ph.D. track in Health Behavior**

For each doctoral student in this academic program, a faculty advisory committee individually prescribes a minimum of 30 credits of courses which the student must complete in the health behavior major. Research and creative activities include both basic and applied work in program planning, development, evaluation of the program effectiveness; health policy and management; and examination of lifestyle and health behavior in relation to nutrition, exercise, stress, alcohol, tobacco and other drug abuse, individual development and family health, health and aging, communicable disease, human sexuality, and related areas. The recommended research skill courses, along with those courses included in the major, minor, and elective portions of each student's customized course prescription, prepare the student to conduct scholarly inquiry in a topic that is selected from a broad spectrum of issues and problems related to disease prevention, health promotion and quality of life.

#### **Ph.D. track in Leisure Behavior**

For each doctoral student in this academic program, a faculty advisory committee individually prescribes a minimum of 30 credits of courses which the student must complete in the leisure behavior major. For students with an emphasis in leisure behavior, this prescribed course work is focused on the study of recreation, leisure, and tourism with the goal of improving health and quality of life. The prescribed research skill courses, along with courses in the major, minor, and elective portions of each student's course prescription, are selected to prepare the student to design and conduct research yielding advancements in the field of leisure behavior.

#### **Ph.D. track in Human Performance with and emphasis in biomechanics**

For each doctoral student in this academic program, a faculty advisory committee individually prescribes a minimum of 30 credits of courses which the student must complete in the human performance major. For students with an emphasis in biomechanics, the major coursework involves an application of the laws of mechanics to human structure and function in an effort to maximize athletic performance. The prescribed research skill courses, along with those courses prescribed in the major, minor, and elective portions of each student's course prescription, are selected to prepare the student to design and conduct research yielding achievements in the field of biomechanics.

#### **Ph.D. track in Human Performance with and emphasis in exercise physiology**

For each doctoral student in this academic program, a faculty advisory committee individually prescribes a

minimum of 30 credits of courses which the student must complete in the human performance major. For students with an emphasis in exercise physiology, the major coursework serves to build the student's understanding of how the various cells, tissues, organs, and organ systems respond to challenges posed by exercise and physical training, with the primary goal of achievement of optimal performance. The prescribed research skill courses, along with those courses prescribed in the major, minor, and elective portions of each student's course prescription, are selected to prepare the student to design and conduct research yielding achievements in the field of exercise physiology.

#### **Ph.D. track in Human Performance with and emphasis in motor learning/control**

For each doctoral student in this academic program, a faculty advisory committee individually prescribes a minimum of 30 credits of courses which the student must complete in the human performance major. For students with an emphasis in motor learning/control, this coursework focuses on the neuromuscular aspects related to the control of human movement and learning. A variety of neuroscience courses related to the control of human movement are prescribed. The prescribed research skill courses, along with those courses prescribed in the major, minor, and elective portions of each student's course prescription, are selected to prepare the student to design and conduct research yielding advancements in the field of motor learning and motor control. General research topics include strength acquisition, goal-directed movement control, and the effects of human aging on movement execution with emphasis given to postural control and balance.

#### **Ph.D. track in Human Performance with and emphasis in sport management**

For each doctoral student in this academic program, a faculty advisory committee individually prescribes a minimum of 30 credits of courses which the student must complete in the human performance major. For students with an emphasis in sport management, the prescribed course work provides the student with a thorough foundation in sport, with a focus on a student's primary interest, such as business, or communication, or history. The prescribed research skill courses, along with courses in the major, minor, and elective portions of each student's course prescription, are selected to prepare the student to design and conduct research yielding advancements in the field of sport management.

#### **Minor(s)**

At least one minor in a supporting area outside the major area of study is required. The minor must be in a discipline related to, but distinct from, the major field(s) of study. Minor course work must support the development of research competency in the major field. The number of required credits is determined by the unit in which the minor is taken (minimum 9 credits). The requirements for all officially recognized doctoral minors are disclosed in this bulletin. Any desired deviation from official minor requirements, which are disclosed in this bulletin, requires University Graduate School approval of a proposal for an individualized minor.

#### **Electives**

Students with a single minor will take supportive electives which support development of research competency in the field.

#### **Dissertation**

20-30 credits.

#### **Milestones**

##### **Course Prescription**

The courses required for a doctoral degree are individually prescribed for each student following approval of the members of the student's advisory committee. The student and the advisory committee work together to prescribe the required research skill courses, major courses, minor courses, elective courses, and the appropriate number of dissertation credits.

##### **Qualifying Examination**

The qualifying examination may not be taken until the student has completed the foreign language/research-skill requirement, and is within one course of completing all prescribed course work.

The exam consists of two portions, a written portion and an oral portion. The oral portion of the qualifying examination must be held within 60 days of the student's submission of the written component to the faculty advisory committee.

##### **Research Proposal**

The proposal meeting will be open to faculty and students in the university community. During the first portion the student will formally present her/his dissertation proposal in an open forum. Committee members and visitors will have the opportunity to ask questions. Visitors will leave after the formal presentation. The remaining time will be determined by the student's research committee.

##### **Final Examination**

Oral defense of the dissertation.

#### **Ph.D. Minors Offered by the School of Public Health-Bloomington**

Doctoral students in other departments can complete a minor in a specific emphasis by satisfactorily completing a minimum number of credits of graduate-level course work which has been approved by the minor field representative on the doctoral advisory committee. A qualifying examination is required.

#### **Options for an Outside Doctoral Minor in the Department of Applied Health Science**

##### **Addictive Behaviors** Complete 9 credits as follows:

*Complete each of the following courses:*

- SPH-B 518 The Nature of Addictive Disorders (3 cr.)
- SPH-H 518 Alcohol and Drug Education (3 cr.)

*Complete 3 credits from the following elective courses in consultation with the minor advisor to include a selective topic directly related to addictive behaviors:*

- SPH-B 701 Advanced Health Behavior Theory for Research (3 cr.)

- SPH-B 702 Advanced Evaluation and Research in Public Health (3 cr.)
- SPH-B 703 Acquiring External Funds for Research (3 cr.)
- SPH-H 791 Readings in Health Behavior (1-10 cr.)
- SPH-H 792 Research in Health Behavior (1-10 cr.)

**Health Behavior** Complete 12 health behavior graduate-level credits in consultation with the minor advisor.

**Health Promotion** Complete 15 credits as follows:

*Complete the following course:*

- SPH-B 589 Social and Behavioral Determinants of Health (3 cr.)

*Complete one of the following courses:*

- SPH-H 500 Philosophy and Principles of Health Education (3 cr.)
- SPH-H 635 Health Promotion in the 21st Century (3 cr.)

*Complete 9 additional graduate-level credits, selected in consultation with the minor advisor.*

**Human Development and Family Studies** Complete 9 credits as follows:

*Complete the following courses:*

- SPH-F 654 Conceptual Frameworks in Human Development and Family Studies (3 cr.)
- SPH-F 656 Families and Health (3 cr.)

*Complete 3 additional graduate-level SPH-F credits to be selected in consultation with the minor advisor.*

**Human Sexuality Education** Complete 15 credits as follows:

*Complete the following courses:*

- SPH-B 589 Social and Behavioral Determinants of Health (3 cr.)
- SPH-H 515 Human Sexuality Education in Schools (3 cr.)
- SPH-H 540 Practicum in College Sex Education (3 cr.)
- SPH-H 555 Issues in Sexuality and Health (3 cr.)

*Complete 3 additional graduate-level credits to be selected in consultation with the minor advisor.*

**Nutrition Science** Complete 12 credits as follows:

*Complete the following courses:*

- SPH-N 530 Advanced Human Nutrition (3 cr.)
- SPH-N 532 Advanced Human Nutrition II (3 cr.)
- BIOT-T 540 Structure, Function, and Regulation of Biomolecules (3 cr.)

*Complete one course selected, in consultation with the minor advisor, from the following:*

- SPH-N 520 Food Chemistry (3 cr.)
- SPH-N 531 Medical Nutrition Therapy (3 cr.)
- SPH-N 536 Applied Public Health Nutrition (3 cr.)
- SPH-N 600 Nutrigenomics (3 cr.)
- SPH-N 601 Phytonutrients (3 cr.)

- SPH-N 620 Nutrition in Sports (3 cr.)
- SPH-N 691 Readings in Nutrition Science (1-5 cr.)
- SPH-N 692 Research in Nutrition Science (1-5 cr.)

**Public Health** Complete 12 credits with a minimum cumulative doctoral minor GPA of 3.0 in the following courses:

- SPH-B 589 Social Determinants of Health (3 cr.)
- SPH-E 651 Epidemiology (3 cr.)
- SPH-V 541 Environmental Health (3 cr.)
- SPH-X 685 Public Health Policy and Politics (3 cr.)

**Public Health and Aging** Complete 9 credits including 3 courses from the following list of options to be selected in consultation with the minor advisor:

- SPH-B 535 Contemporary Issues in Aging and Health (3 cr.)
- SPH-B 589 Social and Behavioral Determinants of Health (3 cr.) **-or-** SPH-X 660 Population Health Determinants (3 cr.)
- SPH-B 615 Health, Longevity, and Integrative Therapies for the Later Years (3 cr.)
- SPH-H 520 Death Education (3 cr.)
- SPH-H 524 Gerontology: Multidisciplinary Perspective (3 cr.)
- SPH-X 685 Public Health Policy and Politics (3 cr.)

**Safety Management** Complete 9 credits of graduate-level safety management credits in consultation with the minor advisor.

**School and College Health Education** Complete 15 credits as follows:

*Complete each of the following courses:*

- SPH-B 589 Social and Behavioral Determinants of Health (3 cr.)
- SPH-H 510 Organization of School Health Programs (3 cr.)
- SPH-H 623 School Health Program Management (3 cr.)
- SPH-H 635 Health Promotion in the 21st Century (3 cr.)

*Complete one course from:*

- SPH-H 500 Philosophy and Principles of Health Education (3 cr.)
- SPH-H 502 Instructional Strategies for School and College Health (3 cr.)

**Sexual and Reproductive Health** Complete 12 from the following list of courses:

*A minimum cumulative GPA of 3.0 is required in courses taken to complete this minor.*

- SPH-B 630 Sexual and Reproductive Health Surveillance (3 cr.)
- SPH-B 632 Sexual Health: Contemporary Discoveries and Controversies (3 cr.)
- SPH-B 634 Sexual Health Research and Evaluation (3 cr.)
- SPH-H 526 AIDS and Other Sexually Transmitted Diseases (3 cr.)
- SPH-H 555 Issues in Sexuality and Health (3 cr.)

- SPH-H 633 Advanced Instructional Methods in Sexual and Reproductive Health (3 cr.)

### Option for an Outside Minor in the Department of Environmental Health

**Environmental Health** Complete 9 credits as follows:

*Complete the following course:*

- SPH-V 541 Environmental Health (3 cr.)

*Complete 6 credits from the following courses:*

- SPH-V 510 Human Health and the Natural Environment (3 cr.)
- SPH-V 542 Principles of Toxicology (3 cr.)
- SPH-V 545 Exposure, Assessment, and Control (3 cr.)
- SPH-V 546 Risk Assessment Policy and Toxic Regulations (3 cr.)
- SPH-V 548 Environmental and Occupational Epidemiology (3 cr.)
- SPH-V 741 Molecular Toxicology (3 cr.)
- SPH-V 743 Environmental Health Sampling (3 cr.)
- SPH-V 745 Advanced Toxicology (3 cr.)
- SPH-V 747 Carcinogenesis (3 cr.)

### Options for an Outside Minor in the Department of Epidemiology and Biostatistics

**Biostatistics** Complete 9 credits as follows:

*Complete the following two required courses:*

- SPH-Q 603 Categorical Data Analysis (3 cr.)
- SPH-Q 604 Applied Linear Regression (3 cr.)

*Complete a third 3-credit course, to be selected in consultation with the minor advisor. Options any any SPH-Q course at the 600-level or above, excluding independent study courses, field experiences, or culminating experiences. Recommended 600-level choices include:*

- SPH-Q 601 Experimental Analysis and Design (3 cr.)
- SPH-Q 602 Multivariate Statistical Analysis (3 cr.)
- SPH-Q 605 Analysis of Multilevel and Longitudinal Data (3 cr.)
- SPH-Q 611 Statistical Packages in Research (3 cr.)
- SPH-Q 612 Survival Analysis (3 cr.)

**Epidemiology** Complete 9 credits as follows:

*Complete the following courses:*

- SPH-E 651 Epidemiology (3 cr.)
- SPH-Q 501 Introduction to Statistics in Public Health (3 cr.) or an equivalent course contingent upon approval from the minor advisor.

*Complete 3 credits from the following courses, selected in consultation with the minor advisor:*

- SPH-E 653 Chronic Disease Epidemiology (3 cr.)
- SPH-E 654 Psychiatric and Drug Use Disorder Epidemiology (3 cr.)
- SPH-E 655 Infectious Disease Epidemiology (3 cr.)
- SPH-E 656 Genetic Epidemiology (3 cr.)
- SPH-E 657 Social Epidemiology (3 cr.)
- SPH-E 658 Intermediate Epidemiology (3 cr.)

- SPH-E 659 Intermediate Epidemiological Methods (3 cr.)
- SPH-E 670 Meta-analysis and Systematic Review (3 cr.)
- SPH-E 680 Nutritional Epidemiology (3 cr.)

### Option for an Outside Minor in the Department of Kinesiology

**Human Performance** Complete 12 credits of graduate-level human performance courses to be selected in consultation with the minor advisor.

### Option for an Outside Minor in the Department of Health and Wellness Design

**Leisure Behavior** Complete 10 credits as follows:

*Complete the following courses for a total of 7 credits:*

- SPH-R 510 Philosophy of Leisure and Recreation (3 cr.)
- SPH-R 794 Seminar in Leisure Behavior (2 cr.)
- SPH-R 782 Advanced Research Inquiry in Recreation, Park, and Tourism Studies (2 cr.)

*Complete 3 additional graduate-level, credits from the Department of Recreation, Park, and Tourism Studies courses, to be selected in consultation with the minor advisor.*

### Faculty

#### Curriculum

Courses

Faculty

#### Dean

David B. Allison

#### Executive Associate Dean

Carrie Docherty

#### Assistant Dean of Operations

Brandon Howell

#### Interim Assistant Dean of Academic Affairs

JoAnna Shimek

#### Assistant Dean of Diversity, Inclusion and Organizational Climate

Maresa Murray

#### Assistant Dean for Student Academic Affairs

James D. Gibson

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Professors

David B. Allison, David Austin\* (Emeritus), Herbert Brantley\* (Emeritus), S. Kay Burrus (Emerita), Joseph Chen\*, David Compton\* (Emeritus), Donetta J. Cothran\*, Jesus Dapena\* (Emeritus), Ruth Engs\* (Emerita),



Alan Ewert\*, Lawrence Fielding\* (Emeritus), David L. Gallahue\* (Emeritus), Leroy Getchell\* (Emeritus), Shawn Gibbs\*, Kathleen R. Gilbert\* (Emerita), Robert M. Goodman\* (Emeritus), Barbara Ames Hawkins\* (Emerita), Ka He\*, Michael Hendryx\*, Debra Herbenick\*, Bruce B. Hronek (Emeritus), Lynn Marie Jamieson\* (Emerita), James E. Klaunig\*, David Kocejka\*, Lloyd J. Kolbe\* (Emeritus), Nianjun Liu, David K. Lohrmann\*, Laura McCloskey\*, Joel Francis Meier\* (Emeritus), Timothy Mickleborough\*, Susan Middlestadt\*, Tony Mobley\* (Emeritus), Paul Pedersen\*, James Peterson (Emeritus), John S. Raglin\*, Michael Reece\*, James Ridenour (Emeritus), Craig M. Ross\*, Ruth Virginia Russell\* (Emerita), Dong Chul Seo\*, John B. Shea\*, James Skinner (Emeritus), Joel Stager\* (Emeritus), Paul Surburg\* (Emeritus), Mohammad R. Torabi\*, Janet Patricia Wallace\* (Emerita), Margaret Weigel, Jerry Diana Wilkerson (Emeritus), William Lee Yarber\*

### Associate Professors

Rodrigo Armijos\*, James Belisle (Emeritus), Aurelian Bidulescu\*, Robert Billingham\* (Emeritus), Hobert Billingsley (Emeritus), James R. Brown (Emeritus), Ben Bruce Jr. (Emeritus), Donald Burns (Emeritus), Kunwung Byon\*, Robert F. Chapman\*, Zhongxue Chen\*, Shu Cole\*, Carrie Docherty\*, Brian Dodge\*, Nancy Theresa Ellis\*, Alyce D. Fly\* (Emeritus), Georgia C. Frey\*, Jaroslaw Harezlak\*, Barbara Hocevar\*, Lisa Kamendulis\*, Doug H. Knapp\*, Hsien-Chang Lin\*, Alice K. Lindeman\*, Juhua Luo\*, Jonathan T. Macy\*, Beth E. Meyerson\*, Rasul Mowatt\*, Cecilia Obeng\*, Jennifer A. Piatt\*, Gary A. Sailes\*, Nathan W. Shier\* (Emeritus), Antonio S. Williams\*, Sarah J. Young\*

### Assistant Professors

Priscilla A. Barnes\*, Jonathon J. Beckmeyer\*, Hannah J. Block\*, Andrew W. Brown\*, Stephen Carter, Andrea K. Chomistek\*, Angela (Yin) Chow, Brandon Crawford, James Robert Farmer\*, Alison R. Greene, Allison H. Gruber\*, Lucia Guerra-Reyes\*, Keisuke Kawata\*, Khalid Khan, Ming Li\*, Christina Ludema\*, Arthur Mindheim (Emeritus), Erik J. Nelson\*, Oghenekaro Omodior, William D. Ramos\*, Molly Rosenberg\*, Kan Shao, Hilda Sherwin (Emerita), Todd D. Smith\*, Jerad Yeagley (Emeritus)

### Clinical Professors

Noy S. Kay, Catherine Sherwood-Laughlin

### Clinical Associate Professors

Keith Chapin, Betty Haven (Emerita), Lesa Huber, Jeanne Deborah Johnston\*, Jackie Kingma, Maresa Murray\*, Kevin J. Slates

### Clinical Assistant Professors

Cassandra J. Coble\*, Julia S. Knapp, Michael Aaron Sayegh\*, Jo Anna M. Shimek

### Lecturers

Trent E. Applegate, Carol Kennedy Armbruster, Charles E. Pearce, David M. Skirvin, Krisha Thiagarajah

### Associate Scientist

Ruth Gassman\*

### Assistant Scientists

Jonathan D. Agley, Wasantha Jayawardene, Pengcheng Xun

### Courses

Curriculum

Courses

Faculty

Complete course listings for the Ph.D. in environmental health, epidemiology, health behavior, human performance, and leisure behavior can be found in the School of Public Health-Bloomington Bulletin.

## Public Policy

**College of Arts and Sciences and School of Public and Environmental Affairs  
Combined Degree Program**

**Departmental E-mail:** [speainfo@indiana.edu](mailto:speainfo@indiana.edu)

Note: Be sure to specify the program in which you are interested in when sending mail.

**Departmental URL:** <https://oneill.indiana.edu/doctoral/degrees/public-policy.html>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degree Offered

Doctor of Philosophy

#### Special Departmental and School Requirements

(See also general University Graduate School requirements.)

#### Doctor of Philosophy Degree

The joint Ph.D. Program in Public Policy is a collaborative endeavor of the Department of Political Science and the School of Public and Environmental Affairs (SPEA).

Its emphasis is on the broad field of public policy, concerning the environment of public policy; the processes of policy formation, management, and implementation; and the analysis and evaluation of policy outputs and results. The institutional setting and design of the program offer a unique educational opportunity. Students in the program receive rigorous social science training and gain knowledge of government decision making processes, problem-solving capabilities, and an understanding of the substantive aspects of public problems and their effects on public institutions.

#### Admission

All applicants to the public policy program are subject to approval by a SPEA-Department of Political Science joint admissions committee. Application materials can be found at [www.gradapp.indiana.edu/](http://www.gradapp.indiana.edu/). Applicants for admission and for financial assistance are required to submit a statement of career goals, official results of the Graduate Record Examination (GRE), official transcripts of all undergraduate and graduate work, and a minimum of three letters of recommendation. Students whose native language is not English must also submit results of the

Test of English as a Foreign Language (TOEFL). The Joint Program Committee in Admissions and Financial Aid examines each application closely to determine suitability for the program. The committee looks beyond the formal academic record at the applicant's demonstrated ability to pursue independent study, language and research-skill training, and maturity and experience.

### Progress Review Committee

The progress review committee must include at least two faculty members from SPEA and two from the Department of Political Science. Members of the committee who hold joint appointments are considered representatives of their primary unit. The chairperson of the committee serves as the student's principal advisor. Early in the student's program term—generally during the third semester—the committee provides the student with a formal review of the progress made toward the degree.

### Degree Requirements

The University Graduate School requires doctoral students to complete 90 hours of graduate credit. Typically, two-thirds of the 90 credit hours are taken in formal course work and one-third in thesis credit. Students holding a Master's in Public Affairs at the School of Public and Environmental Affairs may be allowed to transfer some of their graduate course work (36 hours maximum) or similar degree may be allowed to transfer some of their graduate course work (30 credit hours maximum) if approved by their Progress Review Committee.

### Core Requirements

Public Policy students are required to complete the following courses:

- SPEA-V 680 Research Design and Methods in Public Affairs (3 cr.) or
- POLS-Y 570 Introduction to the Study of Politics (3 cr.)
- SPEA-V 690 Seminar in Public Policy Process (3 cr.) or
- POLS-Y 565 Public Administration, Law, and Policy: Approaches and Issues (3 cr.) This course is offered alternately each fall semester by SPEA (V690) and the Department of Political Science (Y565).
- SPEA-V 691 Workshop in Public Policy (1 cr.) Each student is required to take this 1-credit-hour course for three semesters. The workshop features research presentations by faculty, visiting scholars, and advanced students. It prepares students to critique research in the field, to prepare manuscripts for presentation and publication, and to defend new ideas and theories. There are two sections offered: one by SPEA and the other by the Workshop in Political Theory and Policy Analysis.
- SPEA-V 621 Seminar in Teaching Public and Environmental Affairs (2 cr.) or
- POLS-Y 550 Political Science and Professional Development (1-3 cr.)

These courses prepare students for college teaching and their professional responsibilities toward current and future students. They are taken in a student's first year in the program.

### Research Tool Skills

Required course work for research skills includes a basic two-semester statistics sequence and two additional elective courses or proficiency in a foreign language.

### Basic Tool Skills

The two-semester quantitative analysis sequence requirement is generally fulfilled through one of the course sequences listed below.

- SPEA-V 606 Statistics for Research in Public Affairs I (3 cr.) and
- SPEA-V 607 Statistics for Research in Public Affairs II (3 cr.)
- POLS-Y 575 Political Data Analysis I (3 cr.) and
- POLS-Y 576 Political Data Analysis II (3 cr.)
- SOC-S 554 Statistical Techniques in Sociology I (3 cr.) and
- SOC-S 650 Statistical Techniques in Sociology II (3 cr.)

### Advanced Tool Skills

In addition, students must demonstrate either (1) advanced proficiency in quantitative analysis or specialized research skills by completing two additional courses approved by the student's Progress Review Committee, or (2) proficiency in a language appropriate to his/her field of study approved by the Progress Review Committee. To qualify as language-proficient, a student must take a language proficiency exam from the appropriate language department at Indiana University.

### Fields of Concentration

The School of Public and Environmental Affairs and the Department of Political Science share equally in delivering public policy as the major field of preparation and specialization. Students in the Public Policy Program select two concentration areas—one from SPEA and one from Political Science—in addition to the required concentration in public policy.

The fields of concentration include the following:

SPEA	Political Science
Environmental Policy	American Politics
Policy Analysis	Comparative Politics
Public Management	International Relations
Public Finance	Political Philosophy
	Political Theory and Methodology

Course offerings in SPEA and Political Science help the student prepare for examinations in these fields, and students supplement their coursework with directed readings and research. There is no predetermined set of courses required of all students. Course selection is the responsibility of the student working with his or her Progress Review Committee.

### Major Junctures

#### Progress Review Committee

The Progress Review Committee consists of from four to six faculty members. Two SPEA faculty must be selected for the SPEA concentration and two Political Science faculty for the Political Science concentration. For the

shared public policy concentration there must be one SPEA and one Political Science faculty member. One faculty member is chosen by the student to act as the chair of the committee. The chairperson serves as the student's mentor and guides the student through the Progress Review and qualifying examination process.

Before the meeting of the Progressive Review Committee, the student develops a Progress Review Statement. The statement needs to include background professional and educational information, course work completed and planned in each concentration and for basic and advanced tool skills, and tentative dates for taking qualifying exams and a discussion of a proposed dissertation topic. Once approved by the committee, the statement serves as a contract for the completion of degree requirements.

### Qualifying Examinations

The Political Science Department gives field exams on a regular basis. SPEA also offers qualifying exams on a regular basis. Typically, exams are offered twice per year. At their discretion, examiners for all fields may also require an oral examination.

### Dissertation

After filing for candidacy status, the doctoral candidate forms a Research Committee consisting of at least four faculty members. Two of the members must be School of Public and Environmental Affairs faculty and two must be from Political Science. This committee may, but will not necessarily, be identical to the Progress Review Committee. The selection of Research Committee members should reflect the dissertation topic and expertise of the faculty chosen.

The candidate prepares a dissertation proposal to present and defend in a meeting of the Research Committee. The Research Committee reviews the research proposal and requires changes as needed.

Once the dissertation research is completed, the candidate defends the thesis in an open oral examination meeting. The Research Committee is ultimately responsible for determining whether the dissertation is acceptable.

### Placement

The Ph.D. Office, the director of the program, and individual faculty work hard to ensure that graduates of the program are placed in academic or research organizations. Graduates of the Joint Program in Public Policy have been very successful in obtaining such positions. Recent placements include George Washington University, Emory University, Ohio State University, the University of Arizona, Ulsan University (South Korea), the University of Massachusetts, the U.S. Agency for International Development, and the University of Washington.

### Qualifying Exams

After completing the course work for a field, the student is eligible to take the qualifying exam for that field. Joint Ph.D. Program students are required to take the field exam for their Political Science field at the time scheduled by the Department. Field exams in Political Science are usually offered twice a year, and are announced well

in advance. SPEA field exams are also standardized and offered at set times, usually twice per year, and are coordinated by an exam coordinator for each field.

Students will receive a high pass, pass, qualified pass, or a fail for each of the three exams. Students receiving a qualified pass will either be asked to re-take portions of the exam, or complete an oral examination. Upon completion of the exam, signatures of the Committee members and the Program Director are required on the Report of Preliminary Examination Committee form.

### Faculty

#### Director

Professor Sean Nicholson-Crotty \*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### University President Emeritus

Adam Herbert, John W. Ryan\*

#### Arthur F. Bentley Professor

Elinor S. Ostrom\*

#### Chancellor's Professors

John L. Mikesell\*, James L. Perry\* (Emeritus), William M. Plater\* (Indianapolis)

#### Distinguished Professors

David B. Audretsch\*, Ronald A. Hites\*

#### Professors

Robert Agranoff\* (Emeritus), A. James Barnes\*, Wolfgang Bielefeld\* (Emeritus) (Indianapolis), Lisa Blomgren Amsler\*, William R. Black\* (Emeritus), Charles Bonser\* (Emeritus), Christopher B. Craft\*, Sergio Fernandez\*, Beth Gazley\*, Kirsten A. Grønberg\*, Hendrick M. Haitjema\* (Emeritus), Shiela Suess Kennedy\* (Indianapolis), Robert Kravchuk\*, Leslie Lenkowsky\* (Emeritus), Eugene B. McGregor\* (Emeritus), Michael McGuire\*, Debra J. Mesch\* (Indianapolis), Theodore K. Miller\* (Emeritus), Samuel Nunn\* (Indianapolis), Patrick O. O'Meara\*, Clinton V. Oster\* (Emeritus), John R. Ottensman\* (Indianapolis), Roger B. Parks\* (Emeritus), James Perry\* (Emeritus), Maureen Pirog\*, J. C. Randolph\* (Emeritus), Rafael Reuveny\*, Edwardo L. Rhodes\* (Emeritus), Barry M. Rubin\*, (Emeritus) Richard S. Rubin\* (Emeritus), Adrian Sargeant\* (Indianapolis), Roy Shin\* (Emeritus), Philip S. Stevens\*, Tim A. Tilton\* (Emeritus), Jeffrey R. White\*, Lois Recascino Wise\* (Emerita), Charles Kurt Zorn\*

#### Associate Professors

Claudia Avellaneda\*, Matthew Baggetta, Jennifer Brass, Terry L. Baumer\* (Emeritus) (Indianapolis), Lehn Benjamin\* (Indianapolis), Sanya Carley\*, Beth Cate\*, Crystal A. Garcia\* (Indianapolis), Beth A. Gazley, Michael Gleeson\* (Emeritus) (Indianapolis), Brad Heim\*, David Henning Good\*, Diane S. Henshel\*, G. Roger Jarjoura\* (Indianapolis), Craig L. Johnson\*, David Konisky\*, Kerry Krutilla\*, Yan Yun Zhang (Joyce) Man\*, Vicki J. Meretsky\*, Ashlyn Nelson\*, Jill Nicholson-Crotty\*, Sean Nicholson-Crotty\*, Douglas Noonan (Indianapolis),

D. Jeanne Patterson\* (Emerita), Flynn W. Picardal\*, Kenna F. Quinet\* (Indianapolis), Jonathon Raff, Ken R. Richards\*, Justin Ross\*, Todd Royer\*, Dan Simon\*, Thomas Stucky\* (Indianapolis), Anh Tran

### Assistant Professors

Shahzeen Attari, Julia Carboni (Indianapolis), Deanna Carson (Indianapolis), Jeremy Carter (Indianapolis), Cali Curley (Indianapolis), Jamie Daniel (Indianapolis), Sameeksha Desai, Jerome Dumortier (Indianapolis), Denvil Duncan, Seth Freedman, Brad Fulton, Jeff Gruenewald (Indianapolis), Catherine Herrold (Indianapolis), Alex Hollingsworth, Antung A. Liu, Cullen C. Merritt (Indianapolis), Kimberly Novick, Seth B. Payton (Indianapolis), Victoria Perez, , Bradley R. Ray (Indianapolis), Amanda Rutherford, Abdul-Akeem Sadiq (Indianapolis), Allison Schnable, Joesph Shaw, Marlene Walk (Indianapolis), Wen Wang (Indianapolis), Adam Ward, Coody Wing

### Academic Advisor

Professor Sean Nicholson-Crotty\*, SPEA 441, (812) 855-2457

## Religious Studies

### College of Arts and Sciences

Departmental E-mail: [religion@iu.edu](mailto:religion@iu.edu)

Departmental URL: <https://religiousstudies.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Arts and Doctor of Philosophy

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

Graduate Record Examination General Test. In addition, Ph.D. applicants must submit a writing sample. Specific deadlines and expectations are on the department's Web site.

### Master of Arts Degree

#### Grades

B (3.0) average; B or higher for each course.

#### Course Requirements

A total of 30 credit hours, including R665, at least 2 other 600- or 700-level seminars. No credit hours older than five years can count.

M.A. students must also complete an approved revision of a research paper, between 20-30 pages in length (not counting endnotes). The original paper will normally develop out of one of your 600-level (or 700-level) seminars but may grow out of another research project.

#### Language Work

All M.A. students must demonstrate reading proficiency in one of the two modern languages of scholarship required for the Ph.D. (French or German). Another language may be substituted with the approval of the Director of Graduate Studies and the student's advisors. Students may demonstrate proficiency in French, German, or Spanish by any of the three methods normally sanctioned by the University Graduate School. They may demonstrate proficiency in other languages by successful completion of course work through the intermediate level or by departmental examination.

### Doctor of Philosophy Degree

#### Admission Requirements

(1) Completion of an M.A. degree in the study of religion at Indiana University or another recognized institution, (exceptional students with a BA may be admitted to a combined MA/PhD) (2) a superior record in religious studies, (3) proficiency in one of the required languages, and (4) review and approval by a field committee consisting of faculty in the student's major area of interest.

#### Grades

No grades below B (3.0) will be counted toward this degree.

#### Fields of Specialization

Doctoral students in Religious Studies follow individualized programs of study. Beyond completing the courses required of all PhD students, each student's program of study is determined in close consultation with faculty advisors in their subfields of specialization. These programs of study will include specific courses, relevant language training, and qualifying exam structures and bibliographies. The department website lists programs of study frequently undertaken, and reflects current departmental strengths. The fields of study listed are intended to provide general guidance; in practice, each PhD student will follow a program of study tailored to his/her research interests.

#### Course and Research Requirements

Doctoral students must earn 90 hours of graduate credit, no more than 30 of which may be transferred from other institutions. The department allows up to 30 hours of M.A. credit toward the doctorate, which means that doctoral students must earn 60 hours of credit beyond the M.A. Up to 30 of the total 90 credit hours may be designated as thesis hours (R799).

All doctoral students, regardless of field of specialization, are required to take R665 if they did not do so during an M.A. at Indiana University. In addition to R665, all students must take at least one additional thematic, methodological, or cross-cultural seminar in the department; the director of graduate studies will identify in advance courses that satisfy this requirement. Additional course requirements beyond the M.A. degree include three courses at the 700 level (each course must be at least 3 credit hours); R790 (devoted to the development of teaching skills); and an outside minor (normally 12 credit hours).

Doctoral students are required to produce two revised research papers prior to taking the qualifying examination. These papers will normally develop out of 700-level seminars, although they may grow out of other research



projects as well. Papers should be modeled on a submission to a refereed journal in the student's field of study and should follow that journal's requirements for length and documentation (e.g., Chicago Manual of Style, Turabian, MLA, SBL Handbook of Style). A faculty member must approve each research paper for the student's file, but a student may not secure approval for both papers from the same faculty member. Length is normally 20–30 pages, exclusive of endnotes. An approved research paper may not be a language translation, a bibliographical essay, a text edition, or a set of field notes. Annotated translations may be accepted with the approval of the graduate studies committee.

### Language Work

All candidates will be required to show proficiency in two modern languages of scholarship (French and German) and any necessary primary source languages required by their field. Other modern languages may be substituted for French or German with the approval of the director of graduate studies and the student's advisors. Proficiency in primary source languages is demonstrated through methods determined by the faculty in the student's field.

### Qualifying Examinations

The faculty advisory committee in the student's field sets and supervises the qualifying examination after the student has completed all residency requirements. The exam consists of a total of 12 hours of written exams, which are divided into 3 or more parts, followed by an oral exam, all taken within a 3-week period. The exam is initially taken in its entirety, but it may be retaken once as a whole or in part at the discretion of the faculty committee.

### Termination of Enrollment in the Doctoral Program

If a doctoral student falls below a 3.0 (B) grade point average, fails either the written or oral parts of the qualifying examination two times, or otherwise fails to make satisfactory progress toward the degree, the director of graduate studies, in consultation with the student's advisory committee, can initiate steps to place the student on academic probation or terminate the student's enrollment in the program.

### Final Examination

Oral defense of dissertation.

### Ph.D. Minor in Religious Studies

Students electing the study of religion as an outside minor in a doctoral program will be required to complete 12 credit hours of course work. A maximum of 6 credit hours may be transferred from other institutions or taken from cross-listed courses. At least 6 credit hours are to be taken in the department.

### Faculty

#### Chairperson

Professor Constance Furey\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Candy Gunther Brown\*  
J. Cameron Carter\*  
Constance Furey\*  
David Haberman\*  
Rebecca Manring\*  
Jeremy Schott\*  
Aaron Stalnaker\*  
Lisa Sideris\*  
Winnifred Fallers Sullivan (Provost)\*

### Associate Professors

Heather Blair\*  
Cooper Harriss\*  
Nur Amali Ibrahim\*  
Sarah Imhoff\*  
Michael Ing\*  
R. Kevin Jaques\*  
Patrick Michelson\*  
Richard Nance\*  
Stephen Selka\*

### Assistant Professors

Laura Carlson Hasler\*  
Sonia Velázquez\*

### Professors Emeriti

James Ackerman  
James Hart  
David Smith  
Stephen J. Stein (Chancellor's Professor)  
Mary Jo Weaver

### Director of Graduate Studies

Stephen Selka, Sycamore Hall 205

### Adjunct Faculty

Asma Afsaruddin\* (Near Eastern Languages and Cultures)  
Jamsheed Choksy\* (Central Eurasian Studies)  
Daniel Conkle\* (School of Law)  
Devin DeWeese\* (Central Eurasian Studies)  
Shannon Gayk\* (English)  
Guadalupe González Diéguez (Jewish Studies and Near Eastern Languages & Cultures)  
Paul Gutjahr\* (English)  
Patricia Ingham\* (English)  
Alisha Lola Jones\* (Folklore and Ethnomusicology)  
Edward Linenthal\* (History)  
Herbert Marks\* (Comparative Literature)

### Courses

#### Methodological Seminars

- REL-R 661 Religion and Social Criticism (4 cr.) Religion and social practices, with emphasis on normativity, culture, and the self.
- REL-R 662 Cross-Cultural Study of Religion (4 cr.) The comparative study of religion.
- REL-R 663 Textual Interpretation (4 cr.) Reading religion.
- REL-R 664 Religion and History (4 cr.) Thinking historically about religion.



- REL-R 665 Interpretations of Religion (4 cr.) Major theories and current problems. Required of all departmental graduate students.
- REL-R 761 Religion and Social Criticism (3 cr.) Meets concurrently with R661, with additional reading and research assignments.
- REL-R 762 Cross-Cultural Study of Religion (4 cr.) Meets concurrently with R662, with additional reading and research assignments.
- REL-R 763 Textual Interpretation (4 cr.) Meets concurrently with R663, with additional reading and research assignments.
- REL-R 764 Religion and History (4 cr.) Meets concurrently with R664, with additional reading and research assignments.

### Religious Traditions West

- REL-R 511 Religion of Ancient Israel (3 cr.) Survey of scholarship related to specific subfield of ancient Israelite religion. May be repeated for credit when topics vary.
- REL-R 521 Studies in Early Christianity (3 cr.) Study of the New Testament, early Christian history and thought, or the religious milieu of late antiquity, with special attention to issues of methodology and critical scholarship. May be repeated for credit when topics vary.
- REL-R 531 Studies in Christian History (3 cr.) Study of primary and secondary sources in select eras of Western Christian history, such as the medieval, Renaissance, Reformation, and early modern periods. May be repeated for credit when topics vary.
- REL-R 532 Studies of Religion in American Culture (3 cr.) Study of selected topics in the history of religious life and thought in America. May be repeated for credit when topics vary.
- REL-R 533 Selected Topics in Modern Christian Thought (3 cr.) Topics on figures and movements: Barth, Berdyaev, Newman, Teilhard de Chardin, Niebuhr, and Tillich; Catholic modernism; Protestant liberalism and neo-orthodoxy; Vatican Council II and its aftermath; developments in Eastern Orthodoxy. May be repeated for credit when topics vary.
- REL-R 535 Studies in Greco-Roman Religion (3 cr.) Study of Greek and Roman religious history and thought, with special attention to issues of methodology and source material. Topics may vary.
- REL-R 541 Studies in the Jewish Tradition (3 cr.) Study of various aspects of medieval and modern Jewish literature, religion, and thought. May be repeated for credit when topics vary.
- REL-R 553 Studies in Islam (3 cr.) Selected topics in the history of Muslim society and institutions, sectarian developments, law, theology, mysticism, popular piety, and reform movements in medieval and modern contexts. May be repeated when topics vary.
- REL-R 610 Studies in Biblical Literature and Religion (4 cr.) Issues in the literature, history, and religion of ancient Israel from its origins to the rise of rabbinic Judaism and Christianity. May be repeated when topics vary.
- REL-R 615 The Bible in Literature Courses (4 cr.) The historical-cultural background of the biblical period, literary analysis of the Bible, and analysis of modern literature dependent on the Bible.
- REL-R 620 Ancient and Medieval Christianity (4 cr.) Issues in the history and literature of early Christianity, from its origins through the early medieval period. May be repeated for credit when topics vary.
- REL-R 630 Historical Studies (4 cr.) Development of Western religions in their cultural settings. May be repeated once for credit when topics vary.
- REL-R 633 Colloquium in Ancient Religions (4 cr.) Themes and issues in the study of the religions of the ancient Mediterranean and Near East. May be repeated for credit when topics vary.
- REL-R 635 Colloquium on North American Religious History (4 cr.) Examination and discussion of selected historiography in the field of North American religious history. May be repeated once for credit when topics vary.
- REL-R 636 Christianity in the Americas (4 cr.) Critical readings in the historical emergence and dramatic recent growth of evangelical and charismatic Christianity in the United States, with comparative attention to Canada and Latin America.
- REL-R 644 History and Culture in Islam (4 cr.) Selected topics focusing on critical approaches to Islamic historiography, canon formation, modes of religious authority, scriptural and other forms of textual interpretation, epistemology, and theological discourse. May be repeated once for credit when topics vary.
- REL-R 652 Colloquium on Religion in the West (4 cr.) P: Consent of instructor. Readings and research on patterns of religious life and thought in the West: continuities, changes, and contemporary issues. May be repeated for credit when topics vary.
- REL-R 714 Studies in Jewish Thought and Culture (4 cr.) An examination of various dimensions of Jewish thought and culture from the Middle Ages to the present. The course will focus on the development of philosophical and theological response to the medieval and/or modern period, paying attention to comparative and cross-cultural questions.
- REL-R 733 Advanced Study in Ancient Religions (4 cr.) Meets concurrently with R633, with additional readings in primary languages.
- REL-R 736 Advanced Readings in Early Christian Religious Texts (1-4 cr.) Readings in primary language-Greek, Syriac, or other texts from early Christianity. May take the form of a seminar or of individually directed readings. May be repeated for

credit when different texts are read and with consent of instructor.

### Religious Traditions East

- REL-R 547 Meditation Traditions of India (3 cr.) Survey and analysis of the practice of meditation in Hindu, Buddhist, and Jain traditions of India. Focus on the philosophical and structural basis of meditation and the relation of meditation to the monastic traditions of India. The role of the holy person and importance of the guru-student relationship.
- REL-R 551 Religions of South Asia (3 cr.) Study of the major religious traditions of India: Hinduism, Buddhism, Jainism. May be repeated for credit when topics vary.
- REL-R 552 Studies in Buddhism (3 cr.) Topics include the history of Buddhist thought, practice, literature, and institutions. Areas covered regularly include the Prajnaparamita and Ratnakuta literature, lay and monastic roles in Mahayana Buddhism, images of women in Buddhist literature, and aspects of early Buddhist thought. May be repeated for credit when topics vary.
- REL-R 554 Religions of East Asia (3 cr.) Study of historical, interpretive, or philosophical issues in one period, genre, or aspect of an East Asian religion. May be repeated for credit when topics vary.
- REL-R 649 Issues in Chinese Religions (3 cr.) Introduction to bibliographic materials, research problems, history of the field, and current issues. Includes a condensed overview of Chinese religious history from the earliest records to the present.
- REL-R 650 The Hindu Tradition (4 cr.) Selected topics in Hindu religious history: sects, institutions, texts, doctrines, periods. May be repeated for credit when topics vary.
- REL-R 651 South Asian Buddhism (4 cr.) Selected topics in South and Southeast Asian Buddhism from the earliest to the modern period. May be repeated for credit when topics vary.
- REL-R 653 The Confucian Tradition (4 cr.) Selected topics in Confucianism: history, philosophy, literature, authors. May be repeated for credit when topics vary.
- REL-R 654 The Daoist Tradition (4 cr.) Selected topics in the Daoist tradition. May be repeated for credit when topics vary.
- REL-R 655 East Asian Buddhism (4 cr.) Selected topics in the Buddhist traditions of East Asian countries. May be repeated for credit when topics vary.
- REL-R 656 Buddhism in Central Asia (4 cr.) Issues in the history of Buddhism in Central Asia (Afghanistan, Uzbekistan, Xinjiang) from King Ashoka (third century B.C.E.) to the coming of the Mongols (thirteenth century C.E.). May be repeated for credit when topics vary.
- REL-R 657 Religion in Japan (4 cr.) Selected topics in Japanese religious history. May be repeated for credit when topics vary.
- REL-R 658 Materials and Methods in Buddhist Studies (4 cr.) Introduction to bibliographic materials, research methods, and current issues in the field of Buddhist studies. Includes a condensed overview of the history of Buddhism from its origins to the present.
- REL-R 659 Religion and Society in Asia (4 cr.) Selected topics in the interaction between religion and society in Asian countries. May be repeated for credit when topics vary.
- REL-R 749 Issues in the Study of Chinese Religions (4 cr.) Meets concurrently with R649. In addition, students will carry out research on appropriate Chinese materials in consultation with instructor.
- REL-R 750 Advanced Readings in Asian Religious Texts (1-4 cr.) Readings in primary-language Chinese, Japanese, Mongolian, Pali, Sanskrit, Tibetan, or other texts. May take the form of a seminar or of individually directed readings. May be repeated for credit when different texts are read and with consent of instructor.

### Critical Issues in Religious Studies

- REL-R 561 Social-Scientific Approaches to Religion (3 cr.) Study of various social-scientific disciplines (psychology, sociology, anthropology) as their methods and theories inform our understanding of religious phenomena. May be repeated for credit when topics vary.
- REL-R 563 Religion in Literature (3 cr.) Study of religious issues raised in literary works. May be repeated for credit when topics vary.
- REL-R 571 Studies in Religious Ethics (3 cr.) Selected readings in religious thought and morality. May be repeated for credit when topics vary.
- REL-R 574 From Christian Ethics to Social Criticism I (3 cr.) Christian ethics from the early modern period through the twentieth century, followed by the emergence of comparative religious ethics. Readings include biblical sources and early Christian teachings, the patristic period, Augustine, Bernard of Clairvaux, Aquinas, Luther, Calvin, radical reformers, and Enlightenment Christianity.
- REL-R 575 From Christian Ethics to Social Criticism II (3 cr.) Christian ethics from the early modern period through the twentieth century, followed by the emergence of comparative religious ethics. Readings include Edwards, Schleiermacher, Kierkegaard, Barth, modern Catholics and Protestants, and various contributors to the rise of religious ethics and social criticism.
- REL-R 581 Philosophical Approaches to Religion (3 cr.) Study of selected philosophers, philosophical movements, or philosophical themes as they relate to religious studies or theology. May be repeated for credit when topics vary.

- REL-R 604 Seminar in Cross-Cultural Philosophy of Religion (3 cr.) Critical analysis of issues in the philosophy of religion in comparative perspective. The manner in which philosophical issues are framed in Indian, European, Chinese-Japanese, and Middle Eastern thought. Attention to the critique of Orientalism and critical theory in recent comparative philosophy. May be repeated for credit when topics vary.
- REL-R 670 History of Religious Ethics (3 cr.) Readings of major ethical texts in key periods. Topics vary according to major religious traditions. May be repeated for credit when topics vary.
- REL-R 672 Religious Thought and Ethics (3 cr.) Key figures, issues, and movements. May be repeated for credit when topics vary.
- REL-R 673 Religion and Violence (4 cr.) Topics course on the relation between religious belief and practice and violence. Readings draw from ethics, history, and social theory. Topics include peace traditions; just-war tradition; religious sacrifice; and cultural order. May be repeated with consent of instructor.
- REL-R 674 Ethics and Ethos (4 cr.) Exploration of the relation between ethics and ethos; that is, between human agency and the social, political, and religious conditions in which that agency is exercised. Introduction to currents in moral theory presupposed in subsequent ethics courses.
- REL-R 675 Feminist Perspectives on Religious Traditions (4 cr.) Topics course that includes a focus on one or more of the following: goddess traditions; Western or Eastern feminist theology; comparative feminist theology; feminist encounters with American religions; recovering women's contributions to Eastern or Western religions. May be repeated for credit with permission of instructor.
- REL-R 680 Religion and the Problems of Modernity (4 cr.) Topics course on problems posed to religion by recent developments; e.g., disbelief, pluralism, secularization, technology, rapid socioeconomic and political change, class conflict, historical consciousness. May be repeated for credit when topics vary.

### Other

- REL-R 590 Directed Readings in Religious Studies (1-6 cr.)
- REL-R 600 Methods in Religious Studies (4 cr.) Seminar in methodology; e.g., historiography, interpretation theory, ethnography in the study of religion. May be repeated when topics vary.
- REL-R 601 Historical Interactions of Religion (4 cr.) Study of secondary and primary literature (in translation) on interaction between two or more religious cultures. May be repeated for credit when topics vary.
- REL-R 602 Cross-Cultural Topics (4 cr.) Study of selected myths, rituals, institutions, or doctrines, in

different cultural settings. May be repeated for credit when topics vary.

- REL-R 603 Seminar in Comparative Mysticism (4 cr.) Critical and comparative analysis of selected mystical traditions from India, Europe, China-Japan, and the Middle East. Typologies of mysticism will be studied together with an attempt to formulate a critical definition of "mysticism." May be repeated for credit when topics vary.
- REL-R 638 Religious Dissent (4 cr.) Selected topics in the study of dissenting religious traditions. May be repeated once for credit when topics vary.
- REL-R 660 Religion and Culture (4 cr.) Religious dimensions of cultural phenomena. May be repeated for credit when topics vary.
- REL-R 698 Master's Research Project (3-6 cr.) \*\*These courses are eligible for a deferred grade. Study of religious texts.
- REL-R 699 Thesis (M.A.) (1-6 cr.) \*\*These courses are eligible for a deferred grade.

### Doctoral

- REL-R 711 Religion and Scripture (3 cr.) Selected topics on the nature, function, and interpretation of scripture, both oral and written, within specific religious traditions or in cross-cultural perspective. May be repeated for credit when topics vary.
- REL-R 713 Historical Studies in Western Religions (4 cr.) Selected topics in the histories of Judaism, Christianity, or Islam in the ancient and medieval periods, with study of primary sources in the original language(s). May be repeated for credit when topics vary.
- REL-R 735 North American Religions (4 cr.) Research on selected topics. May be repeated once for credit when topic changes.
- REL-R 738 Modern Religious History (4 cr.) An investigation of developments in religion in the modern period (mid-seventeenth century to the present) in a variety of religious and cultural settings. Topics include Catholicism and modernity; modern Protestant Christianity; religious development in China, India, or Japan in the postcolonial period. May be repeated for credit when topics vary.
- REL-R 744 Women and Religion (4 cr.) Research seminar on selected topics from ancient, medieval, or modern period in any religious traditions, or in comparative religious traditions. May be repeated once for credit when topic changes.
- REL-R 770 Social Ethics (4 cr.) Research seminar on selected topics, including subtraditions in religion, historical developments in a religious tradition, comparative religious ethics, medical ethics. May be repeated with consent of instructor.
- REL-R 780 Topics in Religious Philosophy (4 cr.) A focus on selected authors (e.g., Plotinus, Augustine, Husserl, Patanjali, Shankara, Chu Hsi) and/or philosophical movements (e.g., German idealism, existentialism, phenomenology, yoga, Madhyamika Buddhism, Vedanta) that are formative for religious

or theological thought. May be repeated for credit when topics vary.

- REL-R 790 Departmental Teaching Practicum (1 cr.) Preparation of syllabus, bibliography, assignments, and exams for undergraduate religion courses.
- REL-R 791 Advanced Critical and Ethical Study (1-4 cr.) Individually directed reading and research for doctoral students in critical and ethical problems in religion. May be repeated for credit when topics vary.
- REL-R 792 Advanced Cross-Cultural Study (1-4 cr.) Individually directed reading and research for doctoral students in cross-cultural study of religions. May be repeated for credit when topics vary.
- REL-R 793 Advanced Biblical Study (1-4 cr.) Individually directed reading and research for doctoral students in biblical interpretation. May be repeated for credit when topics vary.
- REL-R 794 Advanced Historical Study (1-4 cr.) Individually directed reading and research for doctoral students in historical study of religious traditions. May be repeated for credit when topics vary.
- REL-R 799 Ph.D. Thesis (1-30 cr.)

#### Cross Listed

- INST-I 580 Women in South Asian Religious Traditions (3 cr.) An historical view of the officially sanctioned roles for women in several religious traditions in South Asia, and women's efforts to become agents and participants in the religious expressions of their own lives.

## Renaissance Studies

### College of Arts and Sciences

**Departmental E-mail:** hallbjor@indiana.edu

**Departmental URL:** <http://renaissance.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Graduate Area Certificate in Renaissance Studies

Renaissance Studies offers an area certificate, which enables doctoral students to investigate Renaissance civilization more extensively than in the Ph.D minor program.

#### Course Requirements

Nine courses in the Renaissance period: R501, R502, two courses outside the home department, and five courses in any department. The selection of courses not in the student's major department should be made in consultation with the Director of Renaissance Studies. A minimum of a B (3.0) in all courses that count toward the certificate.

#### Examination

None

### Ph.D. Minor in Renaissance Studies

#### Course Requirements

Four courses in the Renaissance period: R501, R502, and two additional courses in any department. The selection of courses should be made in consultation with the Director of Renaissance Studies. Students should also seek approval for the minor from their respective departments. A minimum of a B (3.0) in all courses that count toward the minor.

#### Examination

None

### Faculty

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

Penelope Anderson\* (English); Marco Arnaudo\* (French and Italian); Domenico Bertoloni Meli\* (History and Philosophy of Science); Hall Bjornstad\* (French and Italian); J. Peter Burkholder\* (Musicology); Alison Calhoun\* (French and Italian); Linda Charnes\* (English); Andrea Ciccarelli\* (French and Italian); Stephen Conrad\* (Law); Robert Fulk\* (English); Constance Furey\* (Religious Studies); Shannon Gayk\* (English); Adelheid Gealt\* (History of Art); Ryan Giles\* (Spanish and Portuguese); Patricia Ingham\* (English); Hildegard Keller\* (Germanic Studies); Giles Knox\* (History of Art); Joan Pong Linton\* (English); Karma Lochrie\* (English); Ellen MacKay\* (English); Eric MacPhail\* (French and Italian); Kathleen Myers\* (Spanish and Portuguese); William Newman\* (History and Philosophy of Science); Timothy W. O'Connor\* (Philosophy); Massimo Ossi\* (Musicology); Olimpia Rosenthal (Spanish and Portuguese); Bret Rothstein\* (History of Art); Kathleen Rowold\* (Apparel Merchandising and Interior Design); Kaya Sahin (History); Massimo Scalabrini\* (French and Italian); Robert Schneider\* (History); Ayana Smith\* (Musicology); Rebecca Spang\* (History); H. Wayne Storey\* (French and Italian); Sarah Van der Laan\* (Comparative Literature); Sonia Velázquez (Religious Studies / Comparative Literature); Steven Wagschal\* (Spanish and Portuguese); Giovanni Zanovello\* (Musicology); David Zaret\* (Sociology)

### Courses

- **REN-R 501 The Culture of the Renaissance (4 cr.)** A cross-cultural course that examines the European Renaissance as a whole.
- **REN-R 502 Topics in Renaissance Civilization (4 cr.)** A cross-cultural course in which specific topics, problems, and themes are analyzed in the context of the European Renaissance as a whole. May be repeated.
- **REN-R 503 Independent Projects in Renaissance (3-4 cr.)** Independent projects on Renaissance topics for advanced research to be chosen in consultation with the Director of Renaissance Studies.



## Russian and East European Institute

Hamilton Lugar School of Global and International Studies

College of Arts and Sciences

Departmental E-mail: [reei@indiana.edu](mailto:reei@indiana.edu)

Departmental URL: <http://www.indiana.edu/~reeiweb/>

The Russian and East European Institute is affiliated with the Hamilton Lugar School of Global and International Studies (HLS) in the College of Arts and Sciences, dedicated to providing Indiana University graduate students with the intellectual tools they will need to live, work, and thrive in the globalized world of the twenty-first century. Degree programs associated with HLS emphasize language proficiency, cultural competency, and in-depth training in qualitative and quantitative methodologies. HLS students enjoy unparalleled access to a stellar faculty and professional development opportunities. For further information regarding the mission, structure and resources of the Hamilton Lugar School of Global and International Studies see <http://hls.indiana.edu/>.

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degree Programs

The Russian and East European Institute (REEI) offers two Master of Arts programs in Russian and East European studies tracks, seven dual degree programs, and one joint degree program.

- Master of Arts and Master of Business Administration with the Kelley School of Business
- Master of Arts and Master of Library Science with the Department of Information and Library Science in the Luddy School of Informatics and Computing
- Master of Arts and Master of Information Science with the Department of Information and Library Science in the Luddy School of Informatics and Computing
- Master of Arts and Master of Science in Security Informatics with the Luddy School of Informatics and Computing
- Master of Arts and Master of Public Affairs with the O'Neill School of Public and Environmental Affairs
- Master of Arts and Master of Public Health with the School of Public Health
- Master of Arts and Master of Science (Journalism Concentration) with the Media School
- Master of Arts and Juris Doctorate with Maurer School of Law

The Russian and East European Institute master's program gives students a broad understanding of the geographical area and its peoples while providing the opportunity to examine in depth the aspect of Russian and East European studies that most interests them. The dual degrees add high-level professional training. Students may focus on the study of Russia, another

country or region of the former Soviet Union, or East Central Europe, or Southeastern Europe. Within their chosen geographic area, students may concentrate on the study of a particular discipline (business, history, library science, information science, media science, political science, literature, public affairs, or some other) while also taking courses outside of that discipline. REEI also offers a Graduate Certificate Program and a Ph.D. Minor Program. For information on the History M.A. in Russian and East European History, see the History Department.

#### Master of Arts Degree

The REEI master's degree program is intended to prepare area specialists for nonacademic careers in government and private-sector fields such as research and foreign aid, or in exchange organizations, journalism, and business. Students may also choose to follow the REEI degree with advanced graduate studies. The program normally takes two years to complete. Its aim is to provide a broad interdisciplinary introduction to the Russian and East European area, with language competency appropriate for professional research. REEI also offers a Mid-Career Professional Track M.A. degree in Russian and East European area studies, which aims to add to and refine the area expertise professional and commissioned officers have acquired through their career.

#### Admission Requirements

Bachelor's degree with evidence of superior ability and completion of the Graduate Record Examination. Students who intend to specialize in East Central European, Southeast European, or Central Asian studies do not need previous study in languages of those areas for admission. For work in Russian area studies, proficiency in Russian language equivalent to two years of college study is required.

#### Course Requirements

Thirty (30) credit hours of graduate course work to be distributed as follows: (1) R600 Proseminar in Russian and East European Area Studies [3 credits] to be taken the first fall semester of enrollment; (2) four courses [3 credits each] from area studies offerings, one each from the social science group, historical/geographical group, sociocultural group, and literature group; (3) four courses [3 credits each] in the area of concentration. The concentration can be disciplinary (e.g., comparative politics, or business and economics); or it can be geographic (e.g., East Central Europe or Russia); and (4) R601 Interdisciplinary Colloquium in Russian and East European Studies [3 credits]. All course requirements must be completed with an average grade of B or above.

#### M.A. Essay and Interdisciplinary Oral Examination

The paper by a student in the Interdisciplinary Colloquium in Russian and East European Studies (R601) usually becomes the M.A. essay. The essay must be interdisciplinary in focus and use research in the language of concentration as a defining element. In other words, the foreign language sources must form part of the foundation on which the argument of the essay rests. Three REEI affiliated faculty members evaluate the essay and administer an oral examination that explores the interdisciplinary implications of the essay within the context of the student's graduate course work. The essay



should not exceed 13,000 words in length (not counting footnotes/endnotes, bibliography, or tabular material).

### Language Requirement

Students are expected to demonstrate at least intermediate oral competency in an approved area language through oral examination. Proficiency is measured through a conversational exam on a variety of topics, including but not limited to home, school, history, current events, and a student's research. Assessment of proficiency is demonstrated by the ability to handle successfully uncomplicated tasks and social situations requiring an exchange of basic information related to their work, school, recreation, particular interests, and areas of competence. Reading proficiency is demonstrated by the required use of area language source materials for students' MA Essay. To achieve this, students ordinarily continue their language training while at IU. For more information on the exam, please contact the REEI Academic Advisor.

An approved area language is any language that is used with regularity in the geographic region covered by REEI. These include, but are not limited to: Bosnian, Croatian, Czech, Estonian, Finnish, Greek (Modern), Hungarian, Polish, Romanian, Russian, Serbian, Ukrainian, and Yiddish. For more information, please contact the REEI Academic Advisor.

Language hours do not count towards the necessary credit hours for an REEI MA degree unless otherwise stated in the degree plan information. Up to 6 hours of languages coursework is approved for use towards the Mid-Career Professional Track degree plan.

### Mid-Career Professional M.A. track (M.A.)

Thirty (30) credit hours of graduate course work to be distributed as follows: (1) R600 Proseminar in Russian and East European Area Studies [3 credits]; (2) four courses from area studies offerings, one each from the social science group, historical/geographical group, sociocultural group, and literature group; (3) three courses [3 credits each] in the area of concentration (these courses should be selected in consultation with the REEI Academic Advisor). One of these courses will be R601 Colloquium in Russian and East European Area Studies; and (4) two language courses, relevant to the student's concentration, taken at the graduate level [up to 6 credits].

All course requirements must be completed with an average grade of B or above.

### M.A. Culminating Presentation

For the Mid-Career Professional Track, a Master's Essay is not required, but students will submit two pieces of work, totaling 25-30 pages in length, to a committee of REEI affiliated faculty members to review. They will also make a presentation on their research to an appropriate venue, including but not limited to R600, R601, etc.

### Language Requirements

Successful completion of REEI Oral Proficiency Examination in one area language (same as for the Master of Arts degree—please see previous description).

### Dual Degree Programs

#### Dual Master of Arts in Russian and East European Studies and Master of Business Administration (M.A./M.B.A.)

The Russian and East European Institute and the Kelley School of Business jointly offer a three-year program that qualifies students for a dual master's degree. Study for the dual degree (M.A./M.B.A.) can be combined for a total of 66 credit hours rather than the 84 credit hours required for the two degrees taken separately. All dual-degree students should expect to pay University Graduate School tuition rates for approximately half of their enrolled semesters at IU and professional school tuition rates for the other half. Both degrees must be awarded simultaneously.

### Admission Requirements

Same as for the Master of Arts degree except that application must also be made to the Kelley School of Business for study toward the Master of Business Administration degree. Students must be accepted by both units to be admitted to the program.

### REEI Course Requirements

Twenty-four (24) credit hours of graduate course work to be distributed as follows: (1) R600 Proseminar in Russian and East European Area Studies [3 credits] to be taken the first fall semester of enrollment; (2) four courses [3 credits each] from area studies offerings, one each from the social science group, historical/geographical group, sociocultural group, and literature group; (3) two courses [3 credits each] in the concentration area of international business management. These courses should be selected in consultation with the REEI Academic Advisor; (4) R601 Interdisciplinary Colloquium in Russian and East European Studies [3 credits].

### Business Course Requirements

Forty-two (42) credit hours of graduate courses. Full information on the M.B.A. curriculum is contained in the Kelley School of Business Bulletin.

### M.A./M.B.A. Essay and Interdisciplinary Oral Examination

Same as for the Master of Arts degree, except the M.A. essay committee should consist of REEI and Kelley School of Business affiliated faculty.

### Language Requirements

Successful completion of REEI Oral Proficiency Examination in one area language (same as for the Master of Arts degree—please see previous description).

#### Dual Master of Arts in Russian and East European Studies and Master of Information Science (M.A./M.I.S.)

The Russian and East European Institute and the Department of Information and Library Science jointly offer a three-year program that qualifies students for a dual master's degree. Study for the dual degree (M.A./M.I.S.) can be combined for a total of 60 credit hours rather than the 72 credit hours required for the two degrees taken separately. All dual-degree students should expect to pay University Graduate School tuition rates for approximately half of their enrolled semesters at IU and professional

school tuition rates for the other half. Both degrees must be awarded simultaneously.

### Admissions Requirements

Same as for the Master of Arts degree, except that application must also be made to the Department of Information and Library Science for study toward the Master of Information Science degree. Students must be accepted by both units to be admitted to the program.

### REEI Course Requirements

Twenty-four credit hours of graduate course work to be distributed as follows: (1) R600 Proseminar in Russian and East European Area Studies [3 credits] to be taken the first fall of enrollment; (2) four courses [3 credits each] from area studies offerings, one each from the social science group, historical/geographical group, sociocultural group, and literature group; (3) Z629 Topics in Information Sources and Services: Slavic Bibliography or Z542 International Information Issues [either Z629 or Z542 or R610 should include a web-based bibliography project.]; (4) Z605 Internship in Information and Library Science, [research must be conducted in an area pertinent to REEI]; and (5) R601 Interdisciplinary Colloquium in Russian and East European Studies [3 credits].

### Information and Library Science Course Requirements

Thirty-six (36) credit hours of graduate course work. Full information on the M.I.S. curriculum is contained in the Department of Information and Library Science Bulletin.

### M.A./M.I.S. Essay and Interdisciplinary Oral Examination

Same as for the Master of Arts degree, except M.A. essay committee should consist of REEI and Department of Information and Library Science affiliated faculty.

### Language Requirement

Successful completion of the REEI Oral Proficiency Examination in one area language (same as for the Master of Arts degree—please see previous description).

### Dual Master of Arts in Russian and East European Studies and Master of Library Science Degree (M.A./M.L.S.)

The Russian and East European Institute and the Department of Information and Library Science jointly offer a three-year program that qualifies students for a dual master's degree. Study for the dual degree (M.A./M.L.S.) can be combined for a total of 54 credit hours rather than the 66 credit hours required for the two degrees taken separately. All dual degree students should expect to pay University Graduate School tuition rates for approximately half of their enrolled semesters at IU and professional school tuition rates for the other half. Both degrees must be awarded simultaneously.

### Admissions Requirements

Same as for the Master of Arts degree, except that application must also be made to the Department of Information and Library Science for study toward the Master of Library Science degree. Students must be accepted by both units to be admitted to the program.

### REEI Course Requirements

Twenty-four (24) credit hours of graduate course work to be distributed as follows: (1) R600 Proseminar in Russian and East European Area Studies [3 credits] to be taken the first fall semester of enrollment; (2) four courses [3 credits each] from area studies offerings, one each from the social science group, historical/geographical group, sociocultural group, and literature group; (3) Z605 Internship in Information and Library Science; research must be conducted in an area pertinent to REEI; (4) Z629 Topics in Information Sources and Services: Slavic Bibliography; and (5) R601 Interdisciplinary Colloquium in Russian and East European Studies [3 credits].

### Information and Library Science Course Requirements

Thirty (30) credit hours of graduate course work. Full information on the M.L.S. curriculum is contained in the Department of Information and Library Science Bulletin.

### M.A./M.L.S. Essay and Interdisciplinary Oral Examination

Same as for the Master of Arts degree, except M.A. essay committee should consist of REEI and Department of Information and Library Science professors.

### Language Requirement

Successful completion of the Russian and East European Institute Oral Proficiency Examination in one area language (same as for the Master of Arts degree—please see previous description).

### Dual Master of Arts in Russian and East European Studies and Master of Science in Security Informatics (M.A./M.S.)

The Russian and East European Institute and the Luddy School of Informatics and Computing jointly offer a three-year program that qualifies students for a dual master's degree. Study for the dual degree (M.A./M.S.) can be combined for a total of 54 credit hours rather than the 66 credit hours required for the two degrees taken separately. All dual-degree students should expect to pay University Graduate School tuition rates for approximately half of their enrolled semesters at IU and professional school tuition rates for the other half. Both degrees must be awarded simultaneously.

### Admissions Requirements

Same as for the Master of Arts degree, except that application must also be made to the Luddy School of Informatics and Computing for study toward the Master of Science in Security Informatics degree. Students must be accepted by both units to be admitted to the program.

### REEI Course Requirements

Twenty-four credit hours of graduate course work to be distributed as follows: (1) R600 Proseminar in Russian and East European Area Studies [3 credits] to be taken the first fall of enrollment; (2) four courses [3 credits each] from area studies offerings, one each from the social science group, historical/geographical group, sociocultural group, and literature group; (3) two courses [3 credits each] in the concentration area of Security Studies (these courses should be selected in consultation with the REEI Academic Advisor and they may not count towards the credit hours required for the Master of Science in Security

Informatics; (4) R601 Interdisciplinary Colloquium in Russian and East European Studies [3 credits].

### **Security Informatics Course Requirements**

Thirty (30) credit hours of graduate course work. Full information on the M.S. curriculum is contained in the Luddy School of Informatics and Computing Bulletin.

### **M.A./M.S. Essay and Interdisciplinary Oral Examination**

Same as for the Master of Arts degree, except M.A. essay committee should consist of REEI and Luddy School of Informatics and Computing affiliated faculty.

### **Language Requirement**

Successful completion of the REEI Oral Proficiency Examination in one area language (same as for the Master of Arts degree—please see previous description).

### **Dual Master of Arts in Russian and East European Studies and Master of Public Affairs (M.A./M.P.A.)**

The Russian and East European Institute and the O'Neill School of Public and Environmental Affairs jointly offer a three-year program that qualifies students for a dual master's degree. Study for the dual degree (M.A./M.P.A.) can be combined for a total of 60 credit hours rather than the 78 credit hours required for the two degrees taken separately. The first semester of course work toward the dual degree should be completed in the O'Neill School of Public and Environmental Affairs to complete prerequisite courses that are offered only in the fall. All dual-degree students should expect to pay University Graduate School tuition rates for approximately half of their enrolled semesters at IU and professional school tuition rates for the other half. Both degrees must be awarded simultaneously.

### **Admissions Requirements**

Same as for the Master of Arts degree, except that application must also be made to the O'Neill School of Public and Environmental Affairs for study toward the Master of Public Affairs degree. Students must be accepted by both units to be admitted to the program.

### **REEI Course Requirements**

Twenty-four (24) credit hours of graduate course work to be distributed as follows: (1) R600 Proseminar in Russian and East European Area Studies [3 credits]; (2) four courses [3 credits each] from area studies offerings, one each from the social science group, historical/geographical group, sociocultural group, and literature group; (3) two courses [3 credits each] in the concentration area of public and environmental affairs (these courses should be selected in consultation with the REEI Academic Advisor and they may not count toward the credit hours required for the Master of Public Affairs); and (4) R601 Interdisciplinary Colloquium in Russian and East European Studies [3 credits].

### **Public and Environmental Affairs Course Requirements**

Thirty-six (36) credit hours of graduate course work. Full information on the M.P.A. curriculum is contained in the O'Neill School of Public and Environmental Affairs Bulletin.

### **M.A./M.P.A. Essay and Interdisciplinary Oral Examination**

Same as for the Master of Arts degree, except M.A. essay committee should consist of REEI and School of Public and Environmental Affairs professors.

### **Language Requirements**

Successful completion of REEI Oral Proficiency Examination in one area language (same as for the Master of Arts degree—please see previous description).

### **Dual Master of Arts in Russian and East European Studies and Master of Public Health (M.A./M.P.H.)**

The Russian and East European Institute and the School of Public Health (SPH) jointly offer a three-year program that qualifies students for a dual master's degree. Study for the dual degree (M.A./M.P.H.) can be combined for a total of 56 credit hours instead of the 70 credit hours required for the two degrees taken separately. All dual-degree students should expect to pay graduate tuition rates for approximately half of their enrolled semester at IU and professional school tuition rates for the other half. Both degrees must be awarded simultaneously.

### **Admissions Requirements**

Requirements are the same as for the Master of Arts degree except that students must also apply to the Master's program of the School of Public Health (SPH) and meet its established M.P.H. admissions criteria. Students must be accepted for admissions to both units to be admitted to the program.

### **REEI Course Requirements**

Required are twenty-seven (27) credit hours of graduate course work to be distributed as follows: (1) R600 Proseminar in Russian and East European Area Studies [3 credits]; (2) four courses [3 credits each] from area studies offerings, one each from the social science group, historical/geographical group, sociocultural group, and literature group; (3) at least 10 credits in the area of concentration, as described below; and (4) R601 Interdisciplinary Colloquium in Russian and East European Studies [3 credits].

All course requirements must be completed with an average grade of B or above.

### **SPH/REEI Concentration**

The Concentration consists of ten (10) credit hours, at least 2 credits of which must be taken in the College of Arts and Sciences. Suggested courses include: (1) SPH-B 589 Social and Behavioral Determinants of Health; (2) SPH-B 602 Intervention Design in Public Health; (3) SPH-B 698 M.P.H. Culminating Experience in Behavioral, Social, and Community Health; or (4) SPH-B 696 M.P.H. Field Experience in Behavioral, Social, and Community Health. The student is expected to have a Russian and East European focus in these courses. These courses will count towards both the REEI and the SPH portion of the degree.

### **Public Health Course Requirements**

Thirty-eight (38) credit hours of graduate course work are required, including 9 of the credits in the SPH/REE area of concentration, referenced above. Full information on

the M.P.H. curriculum is contained in the School of Public Health Bulletin.

### **M.A./M.P.H. Essay and Interdisciplinary Oral Exam**

Requirements are the same as for the Master of Arts degree, except the M.A. essay committee should consist of REEI and School of Public Health affiliated faculty.

### **Language Requirements**

Successful completion of REEI Oral Proficiency Examination in one area language (same as for the Master of Arts degree—please see previous description).

### **Dual Master of Arts in Russian and East European Studies and Master of Science in Media Studies (Journalism Concentration (M.A./M.S.))**

The Russian and East European Institute and the Media School offer a three-year program that qualifies students for a dual master's degree. Study for the dual degree (M.A./M.S.) can be combined for a total of 51-52 credit hours rather than the 60 credit hours required for the two degrees taken separately. All dual-degree students should expect to pay University Graduate School tuition rates for approximately half of their enrolled semesters at IU and professional school tuition rates for the other half. Both degrees must be awarded simultaneously.

### **Admissions Requirements**

Same as for the Master of Arts degree, except that application must also be made to the Media School for study toward the Master of Science in Media Studies degree. Students must be accepted by both units to be admitted to the program.

### **REEI Course Requirements**

Twenty-four credit hours of graduate course work to be distributed as follows: (1) R600 Proseminar in Russian and East European Area Studies [3 credits] to be taken the first fall of enrollment; (2) four courses [3 credits each] from area studies offerings, one each from the social science group, historical/geographical group, sociocultural group, and literature group; (3) two courses [3 credits each] in the concentration area of International Reporting (these courses should be selected in consultation with the REEI Academic Advisor and they may not count towards the credit hours required for the Master of Science in Media Studies; (4) R601 Interdisciplinary Colloquium in Russian and East European Studies [3 credits].

### **Media Studies Course Requirements**

Twenty-seven (27) to twenty-eight (28) credit hours of graduate course work. Full information on the M.A. curriculum is contained in the Media School Bulletin.

### **M.A./M.S. Essay and Interdisciplinary Oral Examination**

Same as for the Master of Arts degree, except M.A. essay committee should consist of REEI and Media School affiliated faculty.

### **Language Requirement**

Successful completion of the REEI Oral Proficiency Examination in one area language (same as for the Master of Arts degree—please see previous description).

### **Joint Master of Arts in Russian and East European Area Studies and Juris Doctorate (M.A./J.D.)**

The Russian and East European Institute and Maurer Law School jointly offer a four-year program that qualifies students for a joint degree plan, awarding the student an M.A. and J.D. Study for the joint degree (M.A./J.D.) can be combined for a total of 106 credit hours rather than the 118 credit hours required for the two degrees taken separately.

The first year of course work toward the joint degree should be completed in Maurer Law School to complete prerequisite courses. All joint-degree students should expect to pay University Graduate School tuition rates for approximately half of their enrolled semesters at IU and professional school tuition rates for the other half. Both degrees must be awarded simultaneously.

### **Admissions Requirements**

Requirements are the same as for the Master of Arts degree, except that application must also be made to Maurer Law School for study toward the Juris Doctorate degree. Students must be accepted by both units to be admitted to the program.

### **REEI Course Requirements**

Twenty-seven (27) credit hours of graduate course work to be distributed as follows: (1) R600 Proseminar in Russian and East European Area Studies [3 credits] (2) four courses [3 credits each] from area studies offerings, one each from the social science group, historical/geographical group, sociocultural group, and literature group; (3) three courses [3 credits each] in the concentration area of international law [these courses should be selected in consultation with the REEI Academic Advisor and they may not count toward the credit hours required for the Juris Doctorate]; and (4) R601 Interdisciplinary Colloquium in Russian and East European Studies [3 credits]. At least 20 credit hours must be taken in the College of Arts and Sciences. All course requirements must be completed with an average grade of B or above.

### **Maurer Law School Course Requirements**

Seventy-nine (79) credit hours of graduate course work. Full information on the J.D. curriculum is contained in the Maurer Law School Bulletin.

### **M.A./J.D. Essay and Interdisciplinary Oral Examination**

Same as for the Master of Arts degree, except the M.A. essay committee should consist of REEI and Maurer Law School affiliated faculty.

### **Language Requirements**

Successful completion of REEI Oral Proficiency Examination in one area Language (same as for the Master of Arts degree—please see previous description).

### **Graduate Certificate in Russian and East European Area Studies**

#### **Admissions Requirements**

Bachelor's degree with evidence of superior ability and a graduate degree (Masters level or higher). Applicants will also provide a personal statement that outlines their academic and career path. Applicants will provide



evidence of at least 2 years of study of an appropriate area language at the college level, or equivalent.

### Course Requirements

(1) Fifteen [15] credit hours with at least one course [3 credit hours] from all of the four following groups: social science group, historical/geographical group, sociocultural group, and literature group. All four distribution groups must be met, unless scheduling conflicts do not permit it as determined by the REEI Academic Advisor. In this case, at least three distribution groups must be met. Courses must be passed with a grade of at least a B. The courses must be planned in consultation with the academic advisor or director of REEI.

### Portfolio Presentation

(1) Portfolio of work produced for class while at REEI, totaling 25-30 pages. See advisor for more information on portfolio approval and composition.

(2) Presentation of work. This presentation will be reflective of academic work while at REEI, bring the two portfolio papers together, and show how the student anticipates their work at REEI will impact their future career.

### Ph.D. Minor Program

#### Admissions Requirement

Bachelor's degree with evidence of superior ability. Students admitted to the institute must be admitted first by a department in which they will work simultaneously for a Ph.D.; the minor is awarded only upon completion of this degree, except in the case of students who have already earned an advanced degree at Indiana University and who wish to add area specialization to competence in their discipline.

### Course Requirements

Three to five courses (3 credits each) from area studies courses, with at least one course from three of the four following groups: social science group, historical/geographical group, sociocultural group, and literature group. The courses must be planned in consultation with the academic advisor or director of REEI.

### Courses

#### Institute Colloquiums

**R500 Russian and East European Issues (1-4 cr.)** Selected issues in Russian and East European history, politics, culture, economics, and society.

**R575 Graduate Readings in Russian and East European Studies (1-3 cr.)** Consent of instructor and the director of the Russian and East European Institute required.

**R600 Proseminar in Russian and East European Area Studies (3 cr.)** Introduction to the disciplines and methodologies of Russian and East European area studies.

**R601 Interdisciplinary Colloquium in Russian and East European Studies (1.5-3 cr.)** Capstone course for the Russian and East European Institute master's degree, emphasizing completion of a major research paper, usually the basis of the master's essay.

### Courses Satisfying Distribution Requirements for the REEI M.A., M.A./M.B.A., M.A./M.I.S., M.A./M.L.S., M.A./M.P.A., M.A./M.P.H., M.A./M.S., J.D./M.A. Graduate Certificate, and Ph.D. Minor

To receive graduate credit for 300- and 400-level courses, the course must be taught by a faculty member (not an Associate Instructor), may require additional assignments, and must receive prior departmental approval. Courses listed in more than one section have varying topics.

#### Group I (Social Science)

**Business** D503 International Business Environment (1.5 cr.)

D504 Operations of International Business (1.5 cr.)

D594 International Competitive Strategy (1.5 cr.)

D595 International Management (1.5 cr.)

F570 International Financial Markets (1.5 cr.)

L571 International Corporate Finance (1.5 cr.)

F579 Cybersecurity Law and Policy (1.5 cr.)

M594 Global Marketing Management (3 cr.)

X575 Kelley International Finance Perspectives Field Study

X576 Emerging Market Experience (EME) Field Study Course (REE topics) (1.5 cr.)

X699 International Business and Culture (3 cr.)

**Central Eurasian Studies** R502 Finland in the Twentieth Century (3 cr.)

R509 Topics in Baltic-Finnish Studies (3 cr.)

R515 Politics and Society in Central Asian (3 cr.)

R527 Post-Soviet Central Asia (3 cr.)

R528 Post-Soviet Central Asia (3 cr.)

R529 Topics in Central Asian Studies (3 cr.)

R549 Topics in Hungarian Studies (3 cr.)

R569 Topics in Mongolian Studies (3 cr.)

R589 Topics in Turkish Studies: Social Science Topics (3 cr.)

R594 Environmental Problems & Social Constraints in N and Central Eurasia (3 cr.)

R595 Politics of Identity (3 cr.)

R599 Central Eurasian Studies (3 cr.)

R693 Problems of Nationalism (3 cr.)

R697 Soviet and Post-Soviet Nationality Policies and Problems (3 cr.)

R790 Seminar in Central Eurasian Studies: Social Science Topics (3 cr.)

#### Economics

E501 Russian Economy (3 cr.)

E501 Seminar in Economics: Soviet-Type Economies in Transition (3 cr.)

E698 Comparative Economics and Economics of Transition (3 cr.)

**Education** H551 Comparative Education I (3 cr.)

H552 Comparative Education II (3 cr.)

**European Studies** W501 The Economics of European Integration (3 cr.)

W504 Model European Union (REE area topics) (3 cr.)

W605 Topics in West European Studies (REE area topic) (3 cr.)

#### Gender Studies

G701 Marxism and Gender (1-4 c.)

#### International Studies

I500 Topics in Global Studies (3 cr.)



I506 Seminar in Identity and Conflict (3 cr.)  
 I510 Seminar in Diplomacy, Security and Governance (3 cr.)  
 I545 Practicum in Human Rights Law and International Law (3 cr.)  
 I702 Independent Study in Global Studies (1-4 cr.)  
 I705 Multidisciplinary Graduate Seminar in Human Rights (3 cr.)

**Law** B523 War Crimes (previously approved topics include: The Milosevic Trial and Trying Slobodan Milosevic) (3 cr.)  
 B565 International Criminal Law (REE area topics) (3 cr.)  
 B575 Constitutional Design in Multiethnic Countries (REE area topics) (3 cr.)  
 B755 European Union Law (REE area topics) (3 cr.)  
 L675 Lessons of the Yugoslav Crisis (3 cr.)  
 L793 Seminar in Human Rights (REE area topics) (3 cr.)

**Political Science** Y368 Russian and Soviet Foreign Policy (3 cr.)  
 Y382 Modern Political Thought (REE area topics) (3 cr.)  
 Y385 Russian Political Ideas (3 cr.)  
 Y557 Comparative Politics: Approaches and Issues (REE area topics) (3 cr.)  
 Y657 Comparative Politics (REE area topics) (3 cr.)  
 Y669 International Relations (REE area topics) (3 cr.)  
 Y673 Empirical Theory & Method. (REE area topics) (3 cr.)  
 Y675 Political Philosophy (REE area topics) (3 cr.)  
 Y681 Readings in Comparative Politics (REE area topics) (1-4 cr.)

Y687 Readings in International Relations (REE area topics) (1-4 cr.)

#### **Public and Environmental Affairs**

E503 Natural Gas: Technical and Policy Challenges (3 cr.)  
 E590 Energy Policy from a Nation State Perspective (3 cr.) V524 Civil Society in a Comparative Perspective (REE area topics) (3 cr.)  
 V550 Topics in Public Affairs (REE area topics) (3 cr.)  
 V573 Comparative Public Management (3 cr.)  
 V575 Comparative Public Management and Administration (3 cr.)  
 V576 Approaches to Development (REE area topics) (3 cr.)  
 V577 Intro Comparative and Int'l Affairs (REE area topics) (3 cr.)  
 V578 Int'l Economics, Strategy, and Trade Policy (REE area topics) (3 cr.)  
 V589 Topics in Public Policy: Democratization and Transformation in Eastern Europe and the Newly Independent States (3 cr.)  
 V710 International Public Policy (REE area topics) (3 cr.)

#### **Russian and East European Institute**

R500 Russian and East European Issues (3 cr.)

#### **Slavic and East European Languages and Cultures**

R572 Business Russian (3 cr.)  
 R592 Methodology of Russian Language Instruction (3 cr.)  
 S540 Graduate Readings on Slavic Studies: Social Science Topics (Approved topics include: Russian for Social Sciences) (3 cr.)

#### **Group II (Historical/Geographical)**

**Central Eurasian Studies** R501 The Baltic States since 1918 (3 cr.)

R502 Finland in the Twentieth Century (3 cr.)  
 R509 Topics in Baltic-Finnish Studies (3 cr.)  
 R510 Intro to Central Asian History (REE area topic) (3 cr.)  
 R513 Islam in the Former Soviet Union (REE area topics) (3 cr.)  
 R515 Politics and Society in Central Asia (REE area topic) (3 cr.)  
 R529 Topics in Central Asian Studies (REE area topic) (3 cr.)  
 R547 East Central European Cities in Comparative Perspectives (3 cr.)  
 R549 Topics (REE area topics) (3 cr.)  
 R549 Topics in Hungarian Studies (REE area topic) (3 cr.)  
 R560 Modern Mongolia (3 cr.)  
 R569 Topics in Mongolian Studies (REE area topic) (3 cr.)  
 R583 Ottoman Classical Age 1300-1600: Ten Sultans, One Empire (REE area topic) (3 cr.)  
 R593 The Mongol Conquest (3 cr.)  
 R596 Rus, Khazar, and Bulgars (3 cr.)  
 R599 Selected Topics in Central Eurasian Studies: Historical Topics (3 cr.)  
 R611 Ethnic History of Central Asia (3 cr.)  
 R612 Central Asia under Russian Rule (3 cr.)  
 R613 Central Asia in the 16th-19th Centuries (3 cr.)  
 R616 Religion and Power in Islamic Central Asia (3 cr.)  
 R627 Islam and Modernity in Central Asia (REE area topic) (3 cr.)  
 R628 Russia's Orient (REE area topic) (3 cr.)  
 R629 Islamic Hagiography of Central Asia (3 cr.)  
 R698 Empire and Ethnicity in Modern Russian History (3 cr.)  
 R713 Sources for the Central Asian History (REE area topic) (3 cr.)  
 R790 Seminar in Central Eurasian Studies: History topics (REE area topic) (3 cr.)

#### **Geography**

G427 Russia and Its Neighbors (3 cr.)  
 G428 Geography of Europe (3 cr.) G603 Topical Seminar in Globalization, Development and Justice (3 cr.)  
 G830 Readings in Geography (3 cr.)

#### **History**

H620 Colloquium in Modern West European History (REE area topics) (4 cr.)  
 H645 Colloquium in East European History (4 cr.)  
 H699 Colloquium in Comparative History (4 cr.)  
 H720 Seminar in European History (REE area topics) (4 cr.)  
 H740 Seminar in Russian History (4 cr.)  
 H745 Seminar in East European History (4 cr.)  
 Recent Topics in REE History offered through REEI  
 R500 E. Europe in the Twentieth Century (3 cr.)  
 R500 Eastern Europe 1945-present (3 cr.)  
 R500 Empire of the Tsars (3 cr.)  
 R500 History of the Cold War (3 cr.)  
 R500 Modern Ukraine (3 cr.)  
 R500 Russian Revolution and the Soviet Regime (3 cr.)  
 R500 The People vs. the Emperor (3 cr.)  
 R640 Colloquium in Russian History (4 cr.)  
 T500 Topics in History (REE area topics) (3 cr.)

#### **Group III (Sociocultural)**

##### **Anthropology**

E600 Seminar in Cultural and Social Anthropology (REE area topics) (3 cr.)

E612 Anthropology of Russia and Eastern Europe (3 cr.)  
 E614 Post Socialist Gender Formations (REE area topics) (3 cr.)  
 E645 Seminar in Medical Anthropology (3 cr.)  
 E677 Performing Nationalism (REE area topic) (3 cr.)  
 E682 Memory and Culture (REE area topic) (3 cr.)  
 E687 Ethnography of Europe (3 cr.)  
 L500 Proseminar in Language and Culture (REE area topics) (3 cr.)  
 L600 Seminar in Ethnography of Communication (REE area topics) (3 cr.)  
 L610 Language and Society in Central Asia (3 cr.)

### **Central Eurasian Studies**

R508 Estonian Culture and Civilization (3 cr.)  
 R509 Topics in Baltic-Finnish Studies (REE area topic) (3 cr.)  
 R513 Islam in the Soviet Union and Successor States (3 cr.)  
 R515 Politics and Society in Central Asia (3 cr.)  
 R516 Peoples and Cultures of Central Asia (3 cr.)  
 R518 Labor and Migration in Central Asia (3 cr.)

R520 Central Asia in Soviet Times (3 cr.)  
 R528 Post-Soviet Transition Central Asia (3 cr.)  
 R529 Topics in Central Asian Studies (REE area topic) (3 cr.)  
 R542 Roma History and Culture (REE area topic) (3 cr.)  
 R549 Topics in Hungarian Studies (3 cr.)  
 Recent topics: Politics, Society, and Culture in Present-Day Hungary (3 cr.)  
 R560 Modern Mongolia (3 cr.)

R564 Shamanism (3 cr.)  
 R569 Topics in Mongolian Studies (REE area topic) (3 cr.)  
 R584 Topics in Turkish Studies: Sociocultural Topics (3 cr.)  
 R592 Uralic Peoples and Cultures (3 cr.)  
 R599 Central Eurasian Studies (REE area topics) (3 cr.)  
 R616 Religion and Power in Islamic Central Asia (3 cr.)  
 R627 Islam and Modernity in Central Asia (REE area topic) (3 cr.)  
 R641 Art and Music of 19th and 20th Century Hungary (REE area topic) (3 cr.)  
 R642 Bela Bartok: Composer in Context (3 cr.)  
 R649 Roma through History, Music, and Film (REE area topic) (3 cr.)  
 R711 Seminar on Comparative Study of Central Asia and Middle East (3 cr.)  
 R780 Seminar in Turkish Studies, Sociocultural Topics (3 cr.)  
 R790 Seminar in Central Eurasian Studies: Sociocultural Topics (3 cr.)

**Comparative Literature** C641 Literature in its Intellectual and Cultural Contexts (REE area topics) (4 cr.)

**Criminal Justice** P680 Seminar: Issues in Criminal Justice: (REE area topics) (3 cr.)

### **East Asian Languages and Cultures**

E 505 Topics in East Asian Studies (REE area topics) (3 cr.)

**Fine Arts** A425 Byzantine Art (4 cr.)  
 A442 Twentieth Century Art 1900-1924 (4 cr.)  
 A480 Russian Art (4 cr.)  
 A521 Early Christian Arts (REE area topics) (4 cr.)

A525 Heaven on Earth: Art and the Church in Byzantium (REE area topics) (4 cr.)  
 A621 Problems in Early Christian Art (REE area topics) (4 cr.)  
 A626 Problems in Byzantine Art (4 cr.)

**Folklore** F635 European Folklore/Folk Music (REE area topic) (3 cr.)  
 F755 Folklore, Culture, and Society (REE area topics) (3 cr.)

**Germanic Studies** Y506 Topics in Yiddish Culture (3 cr.)  
 Y815 Individual Readings in Yiddish Studies: Language, Literature, Culture (1-4 cr.)

### **Information and Library Science**

Z542 International Information Issues (3 cr.)  
 Z604 Topics in Library and Info Science – Area and Intl Studies Librarian (3 cr.)  
 Z605 Internship in Information and Library Science (2-6 cr.)

### **Media School**

J514 International Communication (3 cr.)  
 J560 Topics Colloquium: Reporting Foreign Affairs (3 cr.)

**Music** M502 Composers (REE area topics) (3 cr.)  
 M510 Topics in Music Literature (REE area topics) (3 cr.)  
 M527 Symphonic Literature Z542 (REE area topics) (3 cr.)  
 M537 Topics in Russian Music (3 cr.)  
 M601 Topics in Music Research (REE area topics) (3 cr.)  
 M602 Seminar in Musicology: Music and Politics in Eastern Europe (3 cr.)  
 M695 Seminar in Romantic Music (REE area topics) (3 cr.)

**Religious Studies** R531 Orthodox Christianity (3 cr.)

**Russian and East European Institute** R500 Russian and East European Issues (3 cr.)

### **Slavic and East European Languages and Cultures**

L601 Sociolinguistic Issues in Post-Yugoslavia (3 cr.)  
 P566 Polish Film (3 cr.)  
 R407 Readings in Russian Culture, History, and Society I (3 cr.)  
 R408 Readings in Russian Culture, History, and Society II (3 cr.)  
 R552 Russian and Soviet Film (3 cr.)  
 R553 Central European Cinema (3 cr.)  
 S540 Graduate Readings in Slavic Studies: Sociocultural Topics (Approved topics include: The Language of Russian Modernism: Literature, Music, and Arts; Post-Communist Nostalgia) (3 cr.)

### **Group IV (Literature)**

#### **Central Eurasian Studies**

R503 Classical Finnish Literature (3 cr.)  
 R504 Modern Finnish Literature (3 cr.)  
 R509 Topics in Baltic-Finnish Studies (REE area topics) (3 cr.)  
 R529 Topics in Central Asian Studies (REE area topics) (3 cr.)  
 R549 Topics in Hungarian Studies (REE area topics) (3 cr.)  
 R569 Topics in Mongolian Studies (REE area topics) (3 cr.)  
 R599 Topics in Central Eurasian Studies: Literature Topics (3 cr.)

R699 Seminar in Central Eurasian Studies: Literature Topics (3 cr.)

R790 Seminar in Central Eurasian Studies: Literature Topics (3 cr.)

**Comparative Literature** C535 The Later Nineteenth and Early Twentieth Centuries (REE area topics) (4 cr.)  
C581 Workshop in Literary Translation (REE area topics) (4 cr.)  
C603 Topics in Comparative Literature (REE area topics) (4 cr.)  
C641 Literature in Its Intellectual and Cultural Contexts (REE area topics) (4 cr.)

**Germanic Studies** Y505 Modernity and Tradition in Yiddish Literature and Culture (3 cr.)  
Y815 Individual Readings in Yiddish Language, Literature, or Culture (1-4 cr.)

**Slavic and East European Languages and Cultures**  
C563 Literatures and Cultures of the Czechs and Slovaks I (3 cr.)  
C564 Literatures and Cultures of the Czechs and Slovaks II (3 cr.)  
C565 Seminar in Czech Literature and Culture (3 cr.)  
L599 Prague School Linguistics and Poetics (3 cr.)  
M565 Individual Readings in Romanian Language and Literature (cr. arr.)  
P563 Survey of Polish Literature and Culture I (3 cr.)  
P564 Survey of Polish Literature and Culture II (3 cr.)  
P565 Seminar in Polish Literature and Culture II (3 cr.)  
R405 Readings in Russian Literature I (3 cr.) (in Russian)  
R406 Readings in Russian Literature II (3 cr.) (in Russian)  
R500 Proseminar in Russian Literature (3 cr.)  
R503 Old Russian Literature (3 cr.) (in Russian)  
R504 Eighteenth Century Russian Literature (3 cr.)  
R505 Nineteenth Century Russian Literature I (3 cr.)  
R506 Nineteenth Century Russian Literature II (3 cr.)  
R507 Twentieth Century Russian Literature I (3 cr.)  
R508 Twentieth Century Russian Literature II (3 cr.)  
R520 Twentieth Century Russian Author (3 cr.)  
R530 Pushkin (3 cr.)  
R531 Gogol (3 cr.)  
R532 Dostoevsky (3 cr.)  
R533 Tolstoy (3 cr.)  
R534 Tolstoy and Dostoevsky (3 cr.)  
R535 Chekhov (3 cr.)  
R545 Jewish Characters in Russian Literature (3 cr.)  
R549 Myth and Reality: Women in Russian Literature and in Life (3 cr.)  
R550 Russian Drama (3 cr.)  
R551 Russian Poetry (3 cr.)  
R563 Pushkin to Dostoevsky (3 cr.)  
R564 Tolstoy to Solzhenitsyn (3 cr.)  
R601 Seminar in Russian Literature (1-6 cr.)  
S540 Graduate Readings in Slavic Studies (1-6 cr.)  
S563 Literature and Culture of the Southern Slavs I (3 cr.)  
S564 Literature and Culture of the Southern Slavs II (3 cr.)  
S565 Seminar in South Slavic Literature (3 cr.)

## Faculty

### Director

Professor Sarah Phillips\*

## Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Distinguished Professors

For a list of emeriti REEL faculty affiliates see the University Graduate School list of emeritus graduate faculty on the following website: <https://graduate.indiana.edu/faculty-staff/membership.html>.

### Professors

Michael Alexeev\* (Economics), David Audretsch\* (O'Neill School of Public and Environmental Affairs), , Jacob Bielasiak\* (Political Science), Maria Bucur\* (History), Judah Cohen\* (Jewish Studies, Musicology), Daniel Cole\* (Maurer Law School), , Aurelian Craiutu\* (Political Science), Devin DeWeese\* (Central Eurasian Studies), Elizabeth Dunn\* (Geography), Andrew Durkin\* (Emeritus, Slavic and East European Languages and Cultures), , Michelle Facos\* (Art History), Lee Feinstein\* (International Studies), Ronald Feldstein\* (Emeritus, Slavic and East European Languages and Cultures), William Fierman\* (Emeritus, Central Eurasian Studies), Steven L. Franks\* (Linguistics, Slavic and East European Languages and Cultures), Halina Goldberg\* (Jacobs School of Music), Jeffrey Hart\* (Emeritus, Political Science), Jeffrey Isaac\* (Political Science), Bruce Jaffee\* (Emeritus, Kelley School of Business), Bill Johnston\* (Comparative Literature), Michael Kaganovich\* (Economics), Stephanie Kane (International Studies), György Kara\* (Central Eurasian Studies), Janet Kennedy\* (Emeritus, Fine Arts), Padraic Kenney\* (History), Dov-Ber Kerler\* (Jewish Studies, Germanic), Robert Kravchuk\* (O'Neill School of Public and Environmental Affairs), Hiroaki Kuromiya\* (History), Vincent Liotta\* (Emeritus, Jacobs School of Music), Terrence Mason\* (School of Education), Vicky Meretsky\* (O'Neill School of Public and Environmental Affairs), John Mikesell\* (Emeritus, O'Neill School of Public and Environmental Affairs), Oana Panaïté (French and Italian), Sarah Phillips\* (Anthropology), Maureen Pirog (O'Neill School of Public and Environmental Affairs), Alexander Rabinowitch\* (Emeritus, History), David L. Ransel\* (Emeritus, History), Toivo Raun\* (Central Eurasian Studies, History), Steven Raymer\* (Emeritus, Journalism), Jean C. Robinson\* (Emeritus, Political Science), Mark Roseman\* (History, Jewish Studies), Alvin Rosenfeld\* (English, Jewish Studies), Anya Peterson Royce\* (Anthropology), M. Nazif Shahrani\* (Anthropology, Central Eurasian Studies, Near Eastern Languages and Cultures), Regina Smyth\* (Political Science) Beverly Stoeltje\* (Emeritus, Anthropology), Frances Trix\* (Emeritus, Anthropology), Russell Valentino\* (Slavic and East European Languages and Cultures), Bronislava Volkova\* (Emeritus, Slavic and East European Languages and Cultures), Timothy Waters\* (Maurer School of Law)

### Professors of Practice

Lee Hamilton (Hamilton Lugar School of Global and International Studies), Elaine Monaghan (Media School)

### Associate Professors

Sarah Bassett\* (Art History), László Borhi\* (Central Eurasian Studies), Gardner Bovingdon\* (Central Eurasian Studies, International Studies), Daniel Caner\* (Near

Eastern Languages and Cultures), Damir Cavar\* (Linguistics), Denvil Duncan\* (O'Neill School of Public and Environmental Affairs), Jacob Emery\* (Slavic and East European Languages and Cultures, Comparative Literature), George Fowler\* (Slavic and East European Languages and Cultures), Emma Gilligan (International Studies), Owen V. Johnson\* (Emeritus, Journalism), Frederika Kaestle\* (Anthropology), Marianne Kamp (Central Eurasian Studies), Joshua Malitsky\* (Media School), Patrick Michelson\* (Religious Studies), Joanna Ni#y#ska\* (Slavic and East European Languages and Cultures), Martha Nyikos\* (School of Education), Kaya Sahin\* (History), Ron Sela\* (Central Eurasian Studies, International Studies), Scott Shackelford\* (Kelley School of Business), Maria Shardakova\* (Slavic and East European Languages and Cultures), Dina Spechler\* (Political Science), Andréa Stanislav (School of Art, Architecture and Design), Herbert Terry\* (Emeritus, Telecommunications),

### Assistant Professors

Marina Antic\* (Slavic and East European Languages and Cultures), Andrew Bell\* (International Studies), Malgorzata Cavar\* (Linguistics, Slavic and East European Languages and Cultures), Michael De Groot (International Studies), Debra Friedman\* (Second Language Studies), Elizabeth Geballe (Slavic and East European Languages and Cultures), Kathryn Graber\* (Central Eurasian Studies, Anthropology), Frank Nierzwicki (O'Neill School of Public and Environmental Affairs), Daniel Preston (O'Neill School of Public and Environmental Affairs), Frances Tyers\* (Linguistics), William Winecoff\* (Political Science)

### Associate Scientist/Scholar

Vesna Dimitrieska (School of Education), Kathleen Evans (Language Workshop), Olga Kalentzidou (Geography), Justin Otten (School of Public Health, Russian and East European Institute), Jayne-Leigh Thomas (Anthropology), Justyna Zajac (International Studies)

### Lecturer/Senior Lecturer

Sofiya Asher (Slavic and East European Languages and Cultures), Craig Cravens (Slavic and East European Languages and Cultures), Frank Hess (Institute for European Studies), Jeffrey Holdeman (Slavic and East European Languages and Cultures), Ke-Chin Hsia (History), Aida Huseynova (Jacobs School of Music), Piibi-Kai Kivik (Central Eurasian Studies), Svitlana Melnyk (Slavic and East European Languages and Cultures), Teuta Özçelik (Slavic and East European Languages and Cultures), Tatiana Saburova (History), Miriam Shrager (Slavic and East European Languages and Cultures), Lukasz Sicinski (Slavic and East European Languages and Cultures), Valéria Varga (Central Eurasian Studies), Roman Zlotin (Russian and East European Institute)

### Librarians

Andrew Asher, Wookjin Cheun, Akram Habibulla, Theresa Marguerite Quill

### Academic Advisor

Elliott Nowacky, Global and International Studies Building 4020, (812) 855-3087.

### Courses

### Institute Colloquiums

- **REEI-R 500 Russian and East European Issues (1-4 cr.)** Selected issues in Russian and East European history, politics, culture, economics, and society.
- **REEI-R 575 Graduate Readings in Russian and East European Studies (1-3 cr.)** Consent of instructor and the director of the Russian and East European Institute required.
- **REEI-R 600 Proseminar in Russian and East European Area Studies (3 cr.)** Introduction to the disciplines and methodologies of Russian and East European area studies.
- **REEI-R 601 Interdisciplinary Colloquium in Russian and East European Studies (1.5-3 cr.)** Capstone course for the Russian and East European Institute master's degree, emphasizing readings in current problems and completion of a major research paper.

### Group One Business

- BUS-D 503 International Business Environment (1.5 cr.)
- BUS-D 504 Operations of International Business (1.5 cr.)
- BUS-D 594 International Competitive Strategy (1.5 cr.)
- BUS-D 595 International Management (1.5 cr.)
- BUS-F 570 International Financial Markets (1.5 cr.)
- BUS-F 571 International Corporate Finance (1.5 cr.)
- BUS-L 579 Cybersecurity Law and Policy (1.5 cr.)
- BUS-M 594 Global Marketing Management (3 cr.)
- BUS-X 575 Kelley International Finance Perspectives Field Study (arr. cr.)
- BUS-X 699 International Business and Culture (3 cr.)

### Central Eurasian

- CEUS-R 502 Finland in the Twentieth Century (3 cr.)
- CEUS-R 509 Topics in Baltic-Finnish Studies (3 cr.)
- CEUS-R 515 Politics and Society in Central Asian (3 cr.)
- CEUS-R 527 Post-Soviet Central Asia (3 cr.)
- CEUS-R 528 Post-Soviet Central Asia (3 cr.)
- CEUS-R 529 Topics in Central Asian Studies (3 cr.)
- CEUS-R 549 Topics in Hungarian Studies (3 cr.)
- CEUS-R 569 Topics in Mongolian Studies (3 cr.)
- CEUS-R 589 Topics in Turkish Studies: Social Science Topics (3 cr.)
- CEUS-R 594 Environmental Problems and Social Constraints in Northern and Central Eurasia (3 cr.)
- CEUS-R 595 Politics of Identity (3 cr.)
- CUES-R 599 Central Eurasian Studies (REE area topics) (3 cr.)
- CEUS-R 693 Theorizing Central Eurasia: The Problems of Nationalism (3 cr.)
- CEUS-R 697 Soviet and Post-Soviet Nationality Policies and Problems (3 cr.)
- CEUS-R 790 Seminar in Central Eurasian Studies: Social Science Topics (3 cr.)

### Economics



- ECON-E 501 Russian Economy (3 cr.)
- ECON-E 501 Seminar in Economics: Soviet-Type Economies in Transition (3 cr.)
- ECON-E 698 Comparative Economics and Economics of Transition (3 cr.)

### Education

- EDUC-H 551 Comparative Education I (3 cr.)
- EDUC-H 552 Comparative Education II (3 cr.)

### European Studies

- EURO-W 501 The Economics of European Integration (3 cr.)
- EURO-W 504 Model European Union (REE area topics) (3 cr.)
- EURO-W 605 Topics in West European Studies (REE area topics) (3 cr.)

### Gender Studies

- GNDR-G 701 Marxism and Gender

### International Studies

- INTL-I 500 Topics in Global Studies (3 cr.)
- INTL-I 506 Seminar in Identity and Conflict (3 cr.)
- INTL-I 510 Seminar in Diplomacy, Security and Governance (3 cr.)
- INTL-I 545 Practicum in Human Rights Law and International Law (3 cr.)
- INTL-I 702 Independent Study in Global Studies (1-4 cr.)
- INTL-I 705 Multidisciplinary Graduate Seminar in Human Rights (3 cr.)

### Law

- LAW-B 523 War Crimes (previously approved topics include: The Milosevic Trial and Trying Slobodan Milosevic) (3 cr.)
- LAW-B 565 International Criminal Law (REE area topics) (3 cr.)
- LAW-B 575 Constitutional Design in Multiethnic Countries (REE area topics) (3 cr.)
- LAW-B 755 European Union Law (REE area topics) (3 cr.)
- LAW-L 675 Lessons of the Yugoslav Crisis (3 cr.)
- LAW-L 793 Seminar in Human Rights (REE area topics) (3 cr.)

### Political Science

- POLS-Y 368 Russian & Soviet Foreign Pol (3 cr.)
- POLS-Y 382 Modern Political Thought (3 cr.)
- POLS-Y 385 Russian Political Ideas (3 cr.)
- POLS-Y 557 Comparative Politics: Approaches and Issues (REE area topics) (3 cr.)
- POLS-Y 657 Comparative Politics (3 cr.)
- POLS-Y 669 International Relations (REE area topics) (3 cr.)
- POLS-Y 673 Empirical Theory and Method (REE area topics) (3 cr.)
- POLS-Y 675 Political Philosophy (REE area topics) (3 cr.)
- POLS-Y 681 Readings in Comparative Politics (REE area topics) (1-4 cr.)

- POLYS-Y 687 Readings in International Relations (REE area topics) (1-4 cr.)

### Public and Environmental Affairs

- SPEA-E 503 Natural Gas: Technical and Policy Challenges (3 cr.)
- SPEA-E 590 Energy Policy from a Nation State Perspective (3cr.)
- SPEA-V 524 Civil Society in a Comparative Perspective (REE area topics) (3 cr.)
- SPEA-V 550 Topics in Public Affairs (REE area topics) (3 cr.)
- SPEA-V 573 Comparative Public Management (3 cr.)
- SPEA-V 575 Comparative Public Management and Administration (3 cr.)
- SPEA-V 576 Approaches to Development (REE area topics) (3 cr.)
- SPEA-V 577 Intro Comparative and International Affairs (REE area topics) (3 cr.)
- SPEA-V 578 International Economics, Strategy, and Trade Policy (REE area topics) (3 cr.)
- SPEA-V 589 Topics in Public Policy: Democratization and Transformation in Eastern Europe and the Newly Independent States (3 cr.)
- SPEA-V 710 International Public Policy (REE area topics) (3 cr.)

### Russian and East European Institute

- REEI-R 500 Russian and East European Issues (3 cr.)

### Slavic and East European Languages and Cultures

- SLAV-R 572 Business Russian (3 cr.)
- SLAV-R 592 Methodology of Russian Language Instruction (3 cr.)
- SLAV-S 540 Graduate Readings in Slavic Studies: Social Science topics (3 cr.)

### Group Two

#### Central Eurasian

- CEUS-R 508 Estonian Culture and Civilization (3 cr.)
- CEUS-R 509 Topics in Baltic-Finnish Studies (3 cr.)
- CEUS-R 513 Islam in the Soviet Union and Successor States (3 cr.)
- CEUS-R 515 Politics and Society in Central Asia (3 cr.)
- CEUS-R 518 Labor and Migration in Central Asia (3 cr.)
- CEUS-R 516 Peoples and Cultures of Central Asia (3 cr.)
- CEUS-R 520 Central Asia in Soviet Times (3 cr.)
- CEUS-R 528 Post-Soviet Transition Central Asia (3 cr.)
- CEUS-R 529 Topics in Central Asian Studies (REE area topic) (3 cr.)
- CEUS-R 542 Roma History and Culture (REE area topics) (3 cr.)
- CEUS-R 549 Topics in Hungarian Studies (1-4 cr.)
- CEUS-R 560 Modern Mongolia (3 cr.)
- CEUS-R 564 Shamanism and Folk Religion of the Mongols (3 cr.)



- CEUS-R 569 Topics in Mongolian Studies (REE area topics) (3 cr.)
- CEUS-R 584 Topics in Turkish Studies: Sociocultural Topics (3 cr.)
- CEUS-R 592 Uralic Peoples and Cultures (3 cr.)
- CEUS-R 599 Central Eurasian Studies (REE area topics) (3 cr.)
- CEUS-R 616 Religion and Power in Islamic Central Asia (3 cr.)
- CEUS-R 627 Islam and Modernity in Central Asia (REE area topics) (3 cr.)
- CEUS-R 641 Art and Music of 19th and 20th Century Hungary (REE area topics) (3 cr.)
- CEUS-R 642 Bela Bartok: Composer in Context (3 cr.)
- CEUS-R 649 Roma through History, Music and Film (REE area topics) (3 cr.)
- CEUS-R 711 Seminar on Comparative Study of Central Asia and Middle East (3 cr.)
- CEUS-R 780 Seminar in Turkish Studies: Sociocultural Topics (3 cr.)
- CEUS-R 790 Seminar in Central Eurasian Studies: Sociocultural Topics (3 cr.)

### Geography

- GEOG-G 427 Russia and Its Neighbors (3 cr.)
- GEOG-G 428 Geography of Europe (3 cr.)
- GEOG-G 603 Forced Migration
- GEOG-G 830 Readings in Geography

### History

- HIST-H 640 Colloquium in Russian History (4 cr.)
- HIST-H 645 Colloquium in East European History (4 cr.)
- HIST-H 720 Seminar in European History (REE area topics) (4 cr.)
- HIST-H 740 Seminar in Russian History (4 cr.)
- HIST-H 745 Seminar in East European History (4 cr.)
- HIST-H 620 Colloquium in Modern West European History (REE area topics) (4 cr.)
- HIST-H 699 Colloquium in Comparative History (4 cr.)
- HIST-R 500 Topics in Russian and East European History (3 cr.)
- HIST-T 500 Topics in History (REE area topics) (3 cr.)

### Group Three

#### Anthropology

- ANTH-E 600 Seminar in Cultural and Social Anthropology (REE area topics) (3 cr.)
- ANTH-E 612 Anthropology of Russia and Eastern Europe (3 cr.)
- ANTH-E 614 Post Socialist Gender Formations (REE area topics) (3 cr.)
- ANTH-E 645 Seminar in Medical Anthropology (3 cr.)
- ANTH-E 677 Performing Nationalism (REE area topics) (3 cr.)
- ANTH-E 682 Memory and Culture (REE area topics) (3 cr.)
- ANTH-E 687 Ethnography of Europe (3 cr.)

- ANTH-L 500 Proseminar in Language and Culture (REE area topics) (3 cr.)
- ANTH-L 600 Seminar in Ethnography of Comm. (REE area topics) (3 cr.)
- ANTH-L 610 Language and Society in Central Asia (3 cr.)

#### Central Eurasian

- CEUS-R 508 Estonian Culture and Civilization (3 cr.)
- CEUS-R 509 Topics in Baltic-Finnish Studies (3 cr.)
- CEUS-R 513 Islam in the Soviet Union and Successor States (3 cr.)
- CEUS-R 515 Politics and Society in Central Asia (3 cr.)
- CEUS-R 518 Labor and Migration in Central Asia (3 cr.)
- CEUS-R 516 Peoples and Cultures of Central Asia (3 cr.)
- CEUS-R 528 Post-Soviet Transition Central Asia (3 cr.)
- CEUS-R 529 Topics in Central Asian Studies (REE area topic) (3 cr.)
- CEUS-R 542 Roma History and Culture (REE area topics) (3 cr.)
- CEUS-R 549 Topics in Hungarian Studies (1-4 cr.)
- CEUS-R 560 Modern Mongolia (3 cr.)
- CEUS-R 564 Shamanism and Folk Religion of the Mongols (3 cr.)
- CEUS-R 569 Topics in Mongolian Studies (REE area topics) (3 cr.)
- CEUS-R 584 Topics in Turkish Studies: Sociocultural Topics (3 cr.)
- CEUS-R 592 Uralic Peoples and Cultures (3 cr.)
- CEUS-R 599 Central Eurasian Studies (REE area topics) (3 cr.)
- CEUS-R 616 Religion and Power in Islamic Central Asia (3 cr.)
- CEUS-R 627 Islam and Modernity in Central Asia (REE area topics) (3 cr.)
- CEUS-R 641 Art and Music of 19th and 20th Century Hungary (REE area topics) (3 cr.)
- CEUS-R 642 Bela Bartok: Composer in Context (3 cr.)
- CEUS-R 649 Roma through History, Music and Film (REE area topics) (3 cr.)
- CEUS-R 711 Seminar on Comparative Study of Central Asia and Middle East (3 cr.)
- CEUS-R 780 Seminar in Turkish Studies: Sociocultural Topics (3 cr.)
- CEUS-R 790 Seminar in Central Eurasian Studies: Sociocultural Topics (3 cr.)

#### Comparative Literature

- CMLT-C 641 Literature in its Intellectual and Cultural Contexts (REE area topics) (4 cr.)

#### Criminal Justice

- CJUS-P 680 Seminar: Issues in Criminal Justice: (REE area topics) (3 cr.)

#### East Asian Languages and Cultures

- EALC-E 505 Topics in East Asian Studies (REEI Area Topics) (3 cr.)

### Fine Arts

- FINA-A 425 Byzantine Art (3 cr.)
- FINA-A 442 Twentieth Century Art 1900-1924 (3 cr.)
- FINA-A 480 Russian Art (3 cr.)
- FINA-A 521 Early Christian Arts (REE area topics) (4 cr.)
- FINA-A 525 Heaven on Earth: Art and the Church in Byzantium (REE area topics) (4 cr.)
- FINA-A 621 Problems in Early Christian Art (REE area topics) (4 cr.)
- FINA-A 626 Problems in Byzantine Art (3 cr.)

### Folklore

- FOLK-F 635 European Folklore/Folk music (REE area topic) (3 cr.)
- FOLK-F 755 Folklore, Culture, and Society (REE area topics) (3 cr.)

### Germanic Studies

- GER-Y 506 Topics in Yiddish Culture (3 cr.)
- GER-Y 815 Individual Readings in Yiddish Studies: Language, Literature, Culture (1-4 cr.)

### Information and Library Science

- ILS-Z 542 International Information Issues (3 cr.)
- ILS-Z 604 Topics in Library and Info Science – Area and Intl Studies Lib (3 cr.)
- ILS-Z 605 Internship in Library and Information Science (2-6 cr.)
- ILS-Z 629 Topics in Information Sources and Services: Slavic Bibliography (3 cr.)

### Media School

- MSCH-J 514 International Communication (3 cr.)
- MSCH-J 560 Topics Colloquium: Reporting Foreign Affairs (3 cr.)

### Music

- MUS-M 502 Composers (REE area topics) (3 cr.)
- MUS-M 510 Topics in Music Literature (REE area topics) (3 cr.)
- MUS-M 527 Symphonic Literature (3 cr.) (REE area topics)
- MUS-M 537 Topics in Russian Music (3 cr.)
- MUS-M 601 Topics in Music Research (REE area topics) (3 cr.)
- MUS-M 602 Seminar in Musicology: Music and Politics in Eastern Europe (3 cr.)
- MUS-M 695 Seminar in Romantic Music (REE area topics) (3 cr.)

### Religious Studies

- REL-R 531 Orthodox Christianity (3 cr.)

### Russian East European

- REEI-R 500 Russian and East European Issues (3 cr.)
- REEI-R 610 Seminar in International Librarianship: International Information Issues (3 cr.)

- REEI-R 620 Topics in Information, Literature, and Bibliography: Slavic Library Materials (3 cr.)

### Slavic Languages

- SLAV-L 601 Sociolinguistic Issues in Post-Yugoslavia (3 cr.)
- SLAV-P 566 Polish Film (3 cr.)
- SLAV-R 407 Readings in Russian Culture, History, and Society I (3 cr.)
- SLAV-R 408 Readings in Russian Culture, History, and Society II (3 cr.)
- SLAV-R 552 Russian and Soviet Film (3 cr.)
- SLAV-R 553 Central European Cinema (3 cr.)
- SLAV-S 540 Graduate Readings in Slavic Studies: Sociocultural Topics (3 cr.)

### Group Four Central Eurasian

- CEUS-R 503 Classical Finnish Literature (3 cr.)
- CEUS-R 504 Modern Finnish Literature (3 cr.)
- CEUS-R 509 Topics in Baltic-Finnish Studies (3 cr.)
- CEUS-R 529 Topics in Central Asian Studies (REE area topic) (3 cr.)
- CEUS-R 549 Topics in Hungarian Studies (REE area topic) (3 cr.)
- CEUS-R 569 Topics in Mongolian Studies (REE area topics) (3 cr.)
- CEUS-R 599 Topics in Central Eurasian Studies: Literature Topics (3 cr.)
- CEUS-R 699 Seminar in Central Eurasian Studies: Literature Topics (3 cr.)
- CEUS-R 790 Seminar in Central Eurasian Studies: Literature Topics (REE area topics) (3 cr.)

### Comparative Literature

- CMLT-C 535 The Later Nineteenth and Early Twentieth Centuries (REE area topics) (4 cr.)
- CMLT-C 641 Literature in Its Intellectual and Cultural Contexts (REE area topics) (4 cr.)
- CMLT-C 581 Workshop in Literary Translation (REE area topic) (4 cr.)
- CMLT-C 603 Topics in Comparative Literature (REE area topic) (4 cr.)

### Germanic Studies

- GER-Y 505 Modernity and Tradition in Yiddish Literature and Culture (3 cr.)
- GER-Y 815 Individual Readings in Yiddish Language, Literature, or Culture (1-4 cr.)

### Slavic and East European Languages and Cultures

- SLAV-C 563 Literatures and Cultures of the Czechs and Slovaks I (3 cr.)
- SLAV-C 564 Literatures and Cultures of the Czechs and Slovaks II (3 cr.)
- SLAV-C 565 Seminar in Czech Literature and Culture (3 cr.)
- SLAV-L 599 Prague School Linguistics and Poetics (3 cr.)
- SLAV-M 565 Individual Readings in Romanian Language and Literature (3 cr.)
- SLAV-P 563 Survey of Polish Literature and Culture I (3 cr.)

- SLAV-P 564 Survey of Polish Literature and Culture I (3 cr.)
- SLAV-P 565 Seminar in Polish Literature and Culture II (3 cr.)
- SLAV-R 405 Readings in Russian Literature I (3 cr.) (in Russian)
- SLAV-R 406 Readings in Russian Literature II (3 cr.) (in Russian)
- SLAV-R 500 Proseminar in Russian Literature (3 cr.)
- SLAV-R 503 Old Russian Literature (3 cr.) (in Russian)
- SLAV-R 504 Eighteenth Century Russian Literature (3 cr.)
- SLAV-R 505 Nineteenth Century Russian Literature I (3 cr.)
- SLAV-R 506 Nineteenth Century Russian Literature II (3 cr.)
- SLAV-R 507 Twentieth Century Russian Literature I (3 cr.)
- SLAV-R 508 Twentieth Century Russian Literature II (3 cr.)
- SLAV-R 520 Twentieth Century Russian Author (3 cr.)
- SLAV-R 530 Pushkin (3 cr.)
- SLAV-R 531 Gogol (3 cr.)
- SLAV-R 532 Dostoevsky (3 cr.)
- SLAV-R 533 Tolstoy (3 cr.)
- SLAV-R 534 Tolstoy and Dostoevsky (3 cr.)
- SLAV-R 535 Chekhov (3 cr.)
- SLAV-R 545 Jewish Characters in Russian Literature (3 cr.)
- SLAV-R 549 Myth and Reality: Women in Russian Literature and in Life (3 cr.)
- SLAV-R 550 Russian Drama (3 cr.)
- SLAV-R 551 Russian Poetry (3 cr.)
- SLAV-R 563 Pushkin to Dostoevsky (3 cr.)
- SLAV-R 564 Tolstoy to Solzhenitsyn (3 cr.)
- SLAV-R 601 Seminar in Russian Literature (1-6 cr.)
- SLAV-S 540 Graduate Readings in Slavic Studies (3 cr.)
- SLAV-S 563 Literature and Culture of the Southern Slavs I (1-6 cr.)
- SLAV-S 564 Literature and Culture of the Southern Slavs II (3 cr.)
- SLAV-S 565 Seminar in South Slavic Literature (3 cr.)

## Scientific Computing

**College of Arts and Sciences**

**Departmental URL:** <http://www.indiana.edu/~scicomp/>

**Departmental E-mail:**

[scicomp@denali.physics.indiana.edu](mailto:scicomp@denali.physics.indiana.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

## Ph.D. Minor in Scientific Computing

Scientific computing is an interdisciplinary, interdepartmental graduate minor recognizing important changes that have introduced a powerful and essential mode of scientific research. The increasing availability of high-performance computers has led to a method of scientific inquiry based on mathematical models solved by means of numerical computations, analyzed and viewed by means of advanced computer graphics. Carrying out research by these means is necessarily multidisciplinary, calling on advanced skills in areas that span many classical divisions of academia. The Ph.D. minor in scientific computing provides the interdepartmental education necessary to equip students for research within this paradigm. Scientific computing courses are generally organized into four categories: numerical analysis, scientific applications, scientific visualization, and high-performance computing. Students are encouraged to develop expertise in more than one of those areas.

### Course Requirements

Twelve (12) credit hours in approved courses, 6 credit hours of which must be outside the student's major department. However, at the discretion of the minor advisors, students whose major curriculum includes one or more courses with a substantial scientific computing component may reduce the required credit hours for the minor by as much as six (6) credit hours; at minimum, six (6) credit hours in approved courses outside the student's major department are still required.

The course P573 Introduction to Scientific Computing I has been created as an introductory course for students in the program. Students entering with a background in computational science or engineering, in consultation with their advisor on the Scientific Computing Committee, may omit this course from their curriculum. Students develop their course of study with two faculty: one from the student's home department (presumably the thesis advisor) and the other a member of the Graduate Committee on Scientific Computing from outside the student's home department. The proposed course of study will be submitted for approval by the home department or thesis advisor to the director of the scientific computing program. If approved, a letter detailing the course of study will be signed by the director with copy sent electronically to the student's home department. Significant changes to the course of study need to undergo the same process of development and approval. Certification of completion of the minor requirements will be by the director or the appointed scientific computing minor representative.

### Faculty

#### Director

Associate Professor Srinivasan S. Iyengar\*

#### Interdepartmental Graduate Committee on Scientific Computing

##### College Professor

Roger Temam\* (Mathematics)

##### Distinguished Professors

Steven Gottlieb\* (Physics), Peter Ortoleva\* (Chemistry), Krishnan Raghavachari\* (Chemistry), Roger Temam\* (Mathematics)

### Professors

Randall Bramley\* (Informatics), Haldan Cohn\* (Astronomy), Charles Horowitz\* (Physics), Michael Jolly\* (Mathematics), Phyllis Lugger\* (Astronomy), Gary Pavlis\* (Geological Sciences), Beth A. Plale\* (Computer Science), Thomas Sterling\* (Computer Science), Liese van Zee\* (Astronomy)

### Associate Professors

Srinivasan S. Iyengar\* (Chemistry), Kaj Johnson\* (Geological Sciences), Ryan R. Newton\* (Computer Science), Judy Qiu\* (Intelligent Systems Engineering), Sima Setayeshgar\* (Physics), Martin Swany\* (Intelligent Systems Engineering)

### Assistant Professors

Yong-Yeol Ahn\* (Informatics and Computing), Enrico Vesperini\* (Astronomy)

### Courses

Courses that can be used to satisfy the Scientific Computing minor requirement include, but are not limited to, the following list:

A550 (Astronomy), A570 (Astronomy), A575 (Astronomy)—provided that the course project involves numerical computation), P573 (CSCI), B582 (CSCI), B649 (CSCI), B673 (CSCI), C668 (Chemistry), P410 (Physics), P609 (Physics), P610 (Physics), P700 (Physics), M441 (Mathematics), M442 (Mathematics), M471 (Mathematics), M472 (Mathematics), M571 (Mathematics), M572 (Mathematics), G514 (Geological Sciences), G612 (Geological Sciences), and G614 (Geological Sciences).

## Second Language Studies

### College of Arts and Sciences

Departmental E-mail: [dsls@indiana.edu](mailto:dsls@indiana.edu)

Departmental URL: <http://www.indiana.edu/~dsls/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Arts in TESOL/Applied Linguistics, Master of Arts in Second Language Studies, Doctor of Philosophy in Second Language Studies, Doctoral Minor in Second Language Studies, Graduate Certificate in TESOL and Applied Linguistics.

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

### Master of Arts in TESOL and Applied Linguistics Admission Requirements

Admission to the M.A. program will be based on evaluations of

1. undergraduate grade record,
2. level of achievement on the Graduate Record Examination General Test,
3. three letters of recommendation, and
4. undergraduate exposure to linguistics and related course work,
5. statement of purpose,
6. curriculum vitae.

Students not satisfying requirement (4) may be admitted, but may be required to do course work prerequisite to introductory graduate courses.

### Requirements

A total of thirty (30) credit hours is required, including the core courses: T510 Modern English Grammar, S511 Second Language Syntax, T514 English Phonology for Language Learning and Teaching, S532 Foundations of Second Language Acquisition, T534 Methods in Teaching ESL/EFL to Adults (TESOL), T535 TESOL Practicum, and T550 Language Testing. Additional electives are required as approved by the department. A grade point average of 3.0 (B) must be maintained in 500-level courses in Second Language Studies; any student who falls below a GPA of 3.0 will be put on probation and unless the student brings this record up to a 3.0 grade point average in the following semester may be dismissed from the program.

### Foreign Language Requirements

Reading knowledge of one foreign language approved by the department.

### Thesis

Optional; maximum of 4 credit hours.

### Final Examination

None.

### Master of Arts in Second Language Studies Admission Requirements

Admission to the M.A. program will be based on evaluations of

1. undergraduate grade record,
2. level of achievement on the Graduate Record Examination General Test,
3. three letters of recommendation,
4. undergraduate exposure to linguistics and related course work,
5. statement of purpose,
6. curriculum vitae.

Students not satisfying requirement (4) may be admitted, but may be required to do course work prerequisite to introductory graduate courses.

### Requirements

A total of thirty (30) credit hours is required, including the core courses: S511 Second Language Syntax, S512 Second Language Phonology, S532 Foundations of Second Language Acquisition, S533 Second Language Acquisition Research Design, and S536 Research in



Second Language Pedagogical Contexts. Additional electives are required as approved by the department. A grade point average of 3.0 (B) must be maintained in 500-level courses in Second Language Studies; any student who falls below a GPA of 3.0 will be put on probation and unless the student brings this record up to a 3.0 grade point average in the following semester may be dismissed from the program.

### Foreign Language Requirements

Reading knowledge of one foreign language approved by the department.

### Thesis

Optional; maximum of 4 credit hours.

### Final Examination

None.

### Doctor of Philosophy in Second Language Studies Admission Requirements

Admission to the Ph.D. program will be based upon evaluation of

1. previous academic record,
2. level of achievement on the Graduate Record Examination General Test,
3. three letters of recommendation,
4. previous exposure to TESOL/Applied Linguistics and related course work,
5. statement of purpose,
6. statement of research interests,
7. curriculum vitae.

### Degree Requirements

A total of ninety (90) credit hours are required, with at least 66 credit hours of course work plus up to 24 credit hours of dissertation research. A grade point average of 3.0 (B) must be maintained in Second Language Studies coursework; any student who falls below a GPA of 3.0 will be put on probation and unless the student brings this record up to a 3.0 grade point average in the following semester may be dismissed from the program.

### Required Core Courses

Every student in the program will take six core courses (18 cr. total):

- S511 Second Language Syntax (3 cr.)
- S512 Second Language Phonology (3 cr.)
- S532 Foundations of Second Language Acquisition (3 cr.)
- S533 Second Language Acquisition Research Design (3 cr.)
- S536 Research in Second Language Pedagogical Contexts (3 cr.)
- S670 Language Typology (3 cr.)

### Seminars (3 cr. each)

All students will complete at least 6 credits in two seminars in Second Language Studies. These courses may be applied to other requirements as well.

### Breadth requirements

All students will complete at least 3 credits each in four of the following five areas for a total of 12 credits. There is no restriction on the department in which these courses may be completed. Courses in the Second Language Studies core cannot be used to complete this requirement.

- Historical Linguistics/Language Contact/Language Revitalization
- Sociolinguistics/Pragmatics/Discourse Analysis
- Morphology/Syntax/Semantics
- Pedagogy
- Phonetics/Phonology

### Research Concentration

Students will demonstrate proficiency in a Research Concentration in consultation with their Advisory Committees. Proficiency in the Research Concentration may be demonstrated by completion of two courses in the area of specialty AND

- by completing three additional courses in the area of specialty, OR
- by working in an appropriate research laboratory or research group, OR
- by undertaking appropriate field work or training, OR
- by conducting approved independent research and publication, OR
- by a combination of these.

It is ultimately the responsibility of each student's Advisory Committee to define the student's Research Concentration and to approve the courses or other components. SLST-T505, SLST-T510, and SLST-T514, as well as the six (6) Required Core courses cannot be used to fulfill this requirement. However, as long as the content is appropriate, all other graduate courses, whether taken in the Department of Second Language Studies or in another department, including courses taken to fulfill the breadth requirements, the year-long seminar requirement, or the Ph.D. minor may appear on the list of courses for the Research Concentration, at the discretion of the student's Advisory Committee. Students may, but need not, register for SLST-S690 (Independent Readings in Second Language Studies) credit for work in a research laboratory or research group, field work or training, and/or independent research and publication. The Research Concentration is represented in the Research Qualifying Examination.

### Minor and Language Concentrations

All students will be required to have a minor. The selected minor should be appropriate to the student's choice of subdiscipline within Second Language Studies. Appropriate minors include Anthropology, Cognitive Science, Communication and Culture, foreign languages, Language Education, Linguistics, Psycholinguistics, and Sociology. In all cases the number of hours to be included in the minor will be consistent with the requirements of the unit granting the minor.

Some students may wish to pursue a significant concentration in a particular language area or in English as a Second Language. Students pursuing a language concentration in French, German, or Spanish will ordinarily take at least 21 hours in the Department of French and Italian, the Department of Germanic Studies, or the Department of Spanish and Portuguese, as appropriate.



(Additional language concentrations may be added in the future.) Providing a student has completed all the requirements for the minor in the language department, there is no need to complete both a minor and a language concentration. The language concentration will be the student's minor of record.

### Language Requirements

The language requirement for the Ph.D. is two research languages, which will ordinarily be languages of scholarship in the student's specialty. In addition, students will take 1-2 courses in a language outside of the language family of the student's native language (for example, a native English speaker would take courses in a non-Indo-European language; in contrast, a native speaker of Chinese might take courses in Russian). To satisfy this requirement, a student could complete a one-year language class, take the Field Methods sequence in Linguistics (L653-L654), or take a course on the structure of an appropriate language.

### Qualifying Examinations

All students must pass a set of examinations, consisting of a General Qualifying Examination (GQE) and a Research Qualifying Examination (RQE). These examinations are intended to provide an institutional structure for students as they move from taking courses to writing a dissertation.

#### General Qualifying Examination (GQE)

The GQE is meant to demonstrate the ability to synthesize material explored in courses and in independent reading. The GQE will consist of two cloistered examinations, each three hours in duration. Students will elect two of the following five areas, corresponding to the breadth requirements.

Historical Linguistics/Language Contact/Language Revitalization  
Second Language Morphology/Syntax/Semantics  
Second/Foreign Language Pedagogy  
Second Language Phonetics/Phonology  
Second Language Sociolinguistics/Pragmatics/Discourse Analysis

Most students will take the GQE the semester after coursework is completed. In general, the two cloistered exams will be offered on two consecutive days in October and in February. The GQE schedule will be posted by the end of each semester by the committee, each student will inform the Director of Graduate Studies of his or her two areas no later than one month in advance of the scheduled exam. Appropriate faculty members will submit potential questions to the Director of Graduate Studies, who in turn will select and edit questions and coordinate grading.

On any given cloistered exam, the student will have the opportunity to de-select at least one question; the student will be required to answer two of three questions. All students selecting a given area in a given semester will receive the same questions. All responses to any given exam question will be graded by the same two faculty members. The grades are Pass and Fail. To pass any given cloistered exam, at least three of the four grades assigned must be Pass. If a student fails to pass one or both sections, s/he may take it a second time when the GQE is offered in the next semester. After consultation

with his or her advisory committee, such a student may also select a different exam area.

#### Research Qualifying Examination (RQE)

The RQE is designed to demonstrate that students have developed sufficient depth in their understanding of a particular constellation of research questions and that their academic writing skills are sufficiently well honed that they are able to begin meaningful work on their dissertations. In contrast to the GQE, the research exams will be scheduled individually. We recommend that the research exam be completed in the semester following the successful completion of the GQE. Nevertheless, students are required to have demonstrated preparation in a research focus to the satisfaction of their advisory committees before they will be permitted to proceed with the RQE. In contrast to the GQE, the advisory committee administers the RQE and reports successful completion of the examination to the Director of Graduate Studies.

The RQE may take one of two forms:

Option 1: a publishable research paper which pilots the student's dissertation research, or

Option 2: a research essay which will be completed by the student over the course of one full week.

For Option 1, the student must complete, to the advisory committee's satisfaction, an original sole-authored research paper in the student's intended area of dissertation research, which in the committee's judgment, is ready for submission to one of the following journals: *Studies in Second Language Acquisition*, *Second Language Research*, *Language Learning*, *TESOL Quarterly*, or *Applied Linguistics*. Research papers are 8,000-10,000 words in length including text, references, tables, figures, and appendices.

For Option 2, the advisory committee will assign a single question arising from extensive consultation with the student reflecting the individual student's research focus, as defined through a series of courses, approved independent research, participation in research groups or labs, outside publications, or a combination of these. The student is to complete the essay within exactly one week, but is free to employ data collected and analyzed ahead of time.

#### Dissertation Proposal

The proposal for the dissertation must be approved by the student's research committee. Proposals should include pilot studies. The research committee may have the same membership as the advisory committee or the student may choose different members. The advisor for the dissertation will be a faculty member in the Department of Second Language Studies and a member of the Graduate Faculty. One of the three other members of the committee will be based in the minor department or in the department of the student's language concentration. The student will defend the proposal at a public colloquium.

#### Dissertation (up to 24 cr.)

Students are required to complete a dissertation that constitutes an original and significant contribution to the field of Second Language Studies. The dissertation must be successfully presented to the research committee in

an oral defense as described in the University Graduate School Academic Bulletin.

### Ph.D. Minor in Second Language Studies

The minor consists of a minimum of four courses (12 credit hours) in Second Language Studies. Courses should be at the 500 level or above. A grade point average of 3.0 (B) or better must be achieved in these courses. All SLS minors must include S532. The prerequisite for S532 is a graduate level course in morphosyntax; if taken in SLS this prerequisite will count toward the minor. A specific program for satisfying the minor requirement must be developed in consultation with the student's minor advisor.

### Graduate Certificate in TESOL and Applied Linguistics

The Certificate in TESOL and Applied Linguistics is a practical two-semester program designed to enable students to work as successful teachers of the English language to adult speakers of other languages. The Certificate requires twenty (20) credit hours of course work and a level of English language proficiency commensurate with effective teaching of English.

#### In the fall semester, students take:

- SLST-T510, Modern English Grammar (3 cr.)
- SLST-T514, English Phonology for Language Learning and Teaching (3 cr.)
- ONE of the following
  - SLST-T502, Communications Skills for International Associate Instructors (3 cr.)<sup>1</sup>
  - a 3-credit elective in SLST numbered 500 or higher
  - SLST-T5xx, Proseminar in Applied Linguistics (1 cr.)<sup>2</sup>

#### In the spring semester, students take:

- SLST-T550, Language Testing (3 cr.)
- SLST-T534, Methods in Teaching ESL/EFL to Adults (TESOL) (3 cr.)
- SLST-T535, TESOL Practicum (3 cr.)
- SLST-T5xx, TESOL Professionalization Workshop (1 cr.)<sup>2</sup>

<sup>1</sup> Required for non-native speakers of English who score below Level 2 on the TEPAIC.

<sup>2</sup> To be piloted in fall 2016 and spring 2017 under SLST-T500.

### English as a Foreign Language

The Department of Second Language Studies also offers English language instruction, including T501 Academic English for International Graduate Students (2-3 cr.). For more information, please see the English Language Instruction website.

### Faculty

#### Chairperson

Professor Laurent Dekydtspotter\*

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Professors

Kathleen Bardovi-Harlig\*, Rex A. Sprouse\*, Laurent Dekydtspotter\*

#### Associate Professors

Isabelle Darcy\*, Phillip S. LeSourd\*, David Stringer\*

#### Assistant Professors

Sun-Young Shin, Yucel Yilmaz, Debra Friedman

#### Adjunct Professors

Kenneth de Jong\* (Linguistics)

#### Adjunct Associate Professors

César Félix-Brasdefer\* (Spanish and Portuguese), Kimberly L. Geeslin\* (Spanish and Portuguese)

#### Adjunct Assistant Professors

Öner Özçelik (Central Eurasian Studies)

#### Senior Lecturer

Linda Abe

#### Emeriti

Harry L. Gradman\*, Beverly Hartford\*, Dick Bier

#### Director of Graduate Studies

Rex A. Sprouse\*

#### Academic Advising for Second Language Studies

Memorial Hall 315, 855-7951

### Courses

#### SLST-S 511 Second Language Syntax (3 cr.)

Examination of form and acquisition of nonnative syntax. Consideration of whether nonnative grammars are "fundamentally different" than native grammars, role of the learner's native language, initial state of nonnative syntax, and subsequent development. Comparison of child native acquisition and adult native acquisition.

#### SLST-S 512 Second Language Phonology (3 cr.)

Introduces students to second language phonological systems in light of issues in current phonological theory. Examines the acquisition of segments, syllable constraints, and prosody in second languages. We discuss mechanisms that determine the role of the first language in second language development. Students will develop problem-solving skills.

#### SLST-S 531 Child Second Language Development (3 cr.)

Examines issues in child second language (L2) acquisition, including the critical period hypothesis, universal grammar, and role of the native grammar in the initial state of child L2 acquisition. Child L2 acquisition of phonology, morphology, and syntax is contrasted with adult L2 acquisition, child monolingual acquisition, and simultaneous bilingual acquisition.

**SLST-S 532 Foundations of Second Language Acquisition (3 cr.)** P: SLST T510 or S511, LING L543 or equivalent. Introduces students to second language acquisition research. Critically examines major hypotheses about the ways in which second languages develop. Discussions include a range of languages. Models include a variety of approaches: corpora-based, functionalist, generative, processing-based, sociocultural, and universals of language.

**SLST-S 533 Second Language Acquisition Research Design (3 cr.)** P: S532. Foundations of Second Language Acquisition. Examines a variety of research designs, elicitation tasks, and experimental formats in second language acquisition research appropriate to studies of production, processing, perception, structure, and pragmatics. Students will gain experience in designing and carrying out studies.

**SLST-S 536 Research in Second Language Pedagogical Contexts (3 cr.)** Surveys current issues and research areas in adult second language pedagogy. Considers social, cultural, political and linguistic aspects of language teaching and learning; emphasizes the substantive topics that are addressed; the range of institutional, national and educational contexts of research; and the theoretical lenses that frame the research.

**SLST-S 600 Topics in Second Language Studies (3 cr.)** Intensive study and analysis of selected issues and problems in second language studies. May be taken more than once with different topics.

**SLST-S 605 Second Language Processing (3 cr.)** Investigates how second language users assign representations to utterances of the target language input. Surveys research on the human sentence processing mechanism, its relation to acquisition of grammars, and processing issues as they impact L2 acquisition. Students will become familiar with theoretical issues, empirical studies, and various research methodologies.

**SLST-S 622 World Englishes (3 cr.)** Examines standard and non-standard varieties of English in countries where English is spoken as a first language, an official language, or an influential foreign language. Selected studies of sociolinguistic variables, language change, code-switching, and universal grammar inform discussion of variation in Afro-American English, Indian English, British dialects, and English-based creoles.

**SLST-S 632 Current Research in Second-Language Acquisition (3 cr.)** P: S532. Foundations of Second Language Acquisition. This course addresses issues in recent research in second-language acquisition. Examines selected cases illustrating the relation of second-language acquisition studies to linguistic theory. Emphasis on the collection and analysis of acquisition data.

**SLST-S 640 Discourse Analysis (3 cr.)** Surveys theories of discourse analysis including speech acts, conversational maxims, conversation analysis, ethnomethodology, text analysis, and critical discourse analysis. Applications of those theories to areas of special interest to applied linguistics, including native speaker-nonnative speaker interaction, nonnative speaker conversation, classroom discourse, and analysis of language in professional settings.

**SLST-S 650 Design and Development of Language Assessment (3 cr.)** P: SLST T550 or equivalent. Provides students with advanced conceptual structures such as the assessment-use-argument (AUA) framework to guide design, development, and use of particular language assessment instruments. Development and design of assessment instruments will serve as demonstrations of students' control of course material and as preparation for on-the-job development of assessments.

**SLST-S 660 Contrastive Discourse (3 cr.)** P: T532 or consent of the instructor. Considers cross-cultural text organization from the native and nonnative reader's and writer's viewpoints. Various aspects of text are emphasized, including coherence and cohesion, and formal and cultural schemata in genres such as expository writing, letters, news articles, and narratives.

**SLST-S 670 Language Typology (3 cr.)** Introduction to linguistic typology, the study of how languages differ and how they are alike in terms of formal features. Focuses on a variety of syntactic and morphological features of languages including: lexical classes, word order, case and agreement systems, animacy, definiteness, and gender; valence-changing devices; verbal categories and subordination.

**SLST-S 690 Independent Readings in Second Language Studies (1-4 cr.)** Directed readings in research topics for second language studies.

**SLST-S 700 Seminar in Applied Linguistics (3 cr.)** This seminar will deal with major issues in applied linguistics and second language studies research and theory. The specific title will be announced well in advance of each semester. Course may be retaken for up to 12 credit hours.

**SLST-S 711 Seminar in Second Language Acquisition (3 cr.)** Selected problems and issues in second language acquisition. Completion of SLS core or permission of the instructor is required. May be repeated for credit when topic changes.

**SLST-S 800 Dissertation Research in Second Language Studies (1-12 cr.)** Dissertation research. Arranged. Permission of instructor willing to supervise research is required.

**SLST-T 501 Academic English for International Graduate Students (2-3 cr.)** Designed to improve spoken or written skills for graduate school. Sections on academic writing (research papers, references, reviews, and critical syntheses) and academic speaking (presentations, discussions, and group work) address a range of academic writing and speaking styles. May be taken more than once if topic is different. Credit hours, though counting toward full-time student status, do not accrue toward the total number required for a graduate degree.

**SLST-T 500 Topics in TESOL/Applied Linguistics (3 cr.)** Selected topics, issues, and problems in TESOL and Applied Linguistics. Topics in this course are of particular interest to the second-language practitioner.

**SLST-T 502 Communication Skills for International Associate Instructors (3 cr.)** P: Completion of all SLST T101 courses assigned by the English Language Improvement Program (SLS) and a score of NC4 or C3 on

the TEPAIC. The primary objective of this course is to help international students become effective teachers in the US classroom. This course addresses the communication, teaching, and cultural issues that international students are likely to confront as an associate instructor at Indiana University. This course carries credit as a graduate elective.

#### **SLST-T 510 Modern English Grammar (3 cr.)**

P: Completion of all SLST T101 courses assigned by the English Language Improvement Program (SLS) and a score of NC4 or C3 on the TEPAIC. An examination of the principal features of the grammar of English. The course draws upon traditional, structural, functional, and transformational accounts of the structure of English, with an emphasis on the pedagogical application of these accounts in the teaching of English as a second language.

**SLST-T 514 English Phonology for Language Learning and Teaching (3 cr.)** Introduction to phonology as it applies to the learning and teaching of second languages. Does not satisfy the phonology requirement for the Ph.D. in linguistics.

#### **SLST-T 522 Survey of Applied Linguistics (3 cr.)**

Intensive readings on selected topics relevant to the acquisition of second languages, sociolinguistics, bilingualism, testing, and research directions. Readings will, for the most part, be current and subject to change as the course is offered.

#### **SLST-T 534 Methods in Teaching ESL/EFL to Adults (TESOL) (3 cr.)**

P: S532 Foundations of Second Language Acquisition. Analyzes and critiques approaches and methods in teaching ESL/EFL to adults, including research and experiential perspectives on practice and theory. Surveys traditional and innovative approaches in language teaching, analyzes language classroom interaction, and sets language teaching in cultural and sociopolitical context. To be taken concurrently with T535 TESOL Practicum.

#### **SLST-T 535 TESOL Practicum (3 cr.)**

P: S532 Foundations of Second Language Acquisition. Under supervision, students teach English as a second language to adult learners. The course provides experience in testing, placement, and materials preparation. Classroom lectures focus on issues related to the art and profession of language teaching. To be taken concurrently with SLST T534, Methods in Teaching ESL/EFL to Adults.

**SLST-T 538 Reading and Writing (3 cr.)** Examines the relationship of second-language reading and writing development to second-language acquisition, composition theory, reading and writing research, and second-language teaching. Topics include theories of second-language composition, second-language writing processes, reading as input for writing, academic literacy development, learning environments, and individual differences.

#### **SLST-T 539 Pragmatics and Second-language Learning (3 cr.)**

P: S532 Foundations of Second Language Acquisition. This course familiarizes students with principles and issues in pragmatics and cross-cultural pragmatics. Students will learn appropriate data collection techniques and will collect primary data, learn to analyze spoken and written data, and discuss the application of

pragmatics to language learning and teaching, cross-cultural research, and international communication.

**SLST-T 550 Language Testing (3 cr.)** P: L503 or equivalent. Consideration of theory of assessing competence in second languages. Preparation and administration of various language testing instruments. Primary emphasis on English as a second language.

#### **SLST-T 556 Language Learning Technology (3 cr.)**

Examines the theories of language learning underlying language learning technology. Examines current language learning technology for second and foreign language learning, teaching, testing, and research, and considers its demonstrable efficacy. Identifies and explores specific areas in need of further research and development.

**SLST-T 560 American Culture (3 cr.)** P: For international students only. A survey of issues related to the culture and character of the people of the United States. Topics include the national, social, and linguistic origins of the American people, political and social institutions, and the arts.

**SLST-T 622 World Englishes (3 cr.)** P: For international students only. Investigation of the basic features of varieties of English as formally structured systems. Attitudes toward speech and the relationship of language differences to the attainment of social and educational goals.

#### **SLST-T 690 Advanced Readings in TESOL and Applied Linguistics (1-4 cr.)**

**SLST-G 901 Advanced Research (1-4 cr.)** P: Completed 90 graduate credits. Requires permission of Department, see SLST Graduate Secretary, 855-7951 in Memorial Hall 315 for class authorization to register.

**SLST-S 604 Language Revitalization (3 cr.)** Half of the 6,000 languages spoken today are endangered. This course explores why languages are at risk and investigates how minority and indigenous languages can be revitalized. Case studies highlight practical solutions currently being tried out in diverse communities. Students choose a particular endangered language as their focus of study.

## **Slavic and East European Languages and Cultures**

**College of Arts and Sciences**

**Departmental E-mail:** [iuslavic@indiana.edu](mailto:iuslavic@indiana.edu)

**Departmental URL:** <http://www.slavic.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### **Curriculum**

#### **Degrees Offered**

Master of Arts and Doctor of Philosophy

#### **Program Information**

Attention is called to the program of the Russian and East European Institute which offers students an opportunity to combine work for an advanced degree in the Department

of Slavic and East European Languages and Cultures with interdisciplinary area study of the former Soviet Union or Eastern Europe.

Attention is also called to the Summer Language Workshop, which provides intensive language training in Russian at advanced levels not available during the regular academic year. The workshop also offers first-year and occasionally second-year courses in other Slavic, East European, and Eurasian languages.

### Special Departmental Requirements

(See also general University Graduate School requirements.)

### General Provision

Students wishing the recommendation of the department for teaching positions must present evidence of their ability to teach Russian.

### Master of Arts Degree Admission Requirements

Satisfactory scores on the Graduate Record Examination General Test and satisfactory previous academic record; relevant writing sample and three letters of recommendation. The following are also expected for admission into Tracks 1 and 2: (i) knowledge of the Russian language adequate for graduate study, as determined by a proficiency examination based on the department's fourth-year course and (ii) a general acquaintance with the major works of nineteenth- and twentieth-century Russian literature equivalent to at least the materials covered in a two-semester undergraduate survey course. For admission into Track 3, students should demonstrate a clear interest in their language(s) and area(s) of specialization (e.g., prior language study, overseas experience in the relevant country, employment plans which utilize that language, etc.). Students with a Slavic language deficiency are urged to apply to the Summer Workshop.

### Track Requirements

In addition to the general course requirements, students pursuing the M.A. degree shall complete one of the three programs described as follows. Tracks 1 and 2 are structured primarily for preparing students who wish to continue toward a Ph.D. degree with a specialization in Russian literature or Slavic linguistics; Track 3 is designed mainly for students concentrating in area studies and typically pursuing a departmental language other than Russian.

#### Track 1 Russian Literature M.A. Requirements

1. R500 Proseminar in Russian Literature or CMLT C501 Introduction to Contemporary Literary Studies or equivalent.
2. L571 Old Church Slavonic or L576 History of the Russian Literary Language or L501 Structure of Russian I.
3. R501-R502 Fifth-Year Russian or equivalent; students who place beyond Fifth-Year Russian on the departmental placement exam (this exam will be waived for native speakers of Russian with a college or high school diploma and transcript from any home-country institution with a curriculum conducted

in Russian) will substitute two other graduate level courses with departmental approval.

4. R563-R564 Two-semester survey course of Russian literature or equivalent
5. Four literature, culture, or film courses (at least three from SLAV, unless additional substitutions are approved by the department.)

Total: 30 credits

#### Track 2 Slavic Linguistics M.A. Requirements

1. L501 Structure of Russian I: Phonology and Morphology
2. L502 Structure of Russian II: Syntax and Semantics
3. L571 Old Church Slavonic or L576 History of Russian Literary Language or equivalent
4. One course in Slavic literature, culture or film
5. Two semesters of a West or South Slavic language
6. R501-R502 Fifth-Year Russian or equivalent; students who place beyond Fifth-Year Russian on the departmental placement exam (this exam will be waived for native speakers of Russian with a college or high school diploma and transcript from any home-country institution with a curriculum conducted in Russian) will substitute two other graduate level courses with departmental approval.
7. Two linguistics courses (SLAV or elective from LING, SLS, or other unit, subject to departmental approval)

Total: 30 credits

#### Track 3 Language and Area Studies

Students taking this option are encouraged to fulfill the additional requirements for a certificate in the Russian and East European Institute.

1. Two courses in Slavic literature, culture, or film at the graduate level
2. A departmental language to a minimum level of 4th year proficiency if Russian or 3rd year if some other language
3. An additional 18 credit hours, selected with the approval of the graduate advisor, of which at least 9 must be in the department.

Total: 30 credits, including up to 12 credits from language

### Examination

No examination is required for a terminal M.A. degree, but a doctoral admission examination, based on the M.A. program for Tracks 1, 2, or 3, is required for admission to Ph.D. work and must normally be passed before the student registers for the fifth semester of graduate work. (A student working simultaneously for the M.A. degree and an area certificate in the Russian and East European Institute must pass the doctoral admission examination before registering for the sixth semester of graduate work.)

### Master of Arts for Teachers Degree Admission Requirements

Applicants should have a knowledge of the Russian language adequate for graduate study (a minimum of three years is acceptable, but four is preferred). A broad, solid undergraduate program in the liberal arts is strongly recommended. New students must take a proficiency examination in Russian before registering, and those



whose performance is inadequate will be required to take appropriate courses in Russian until their proficiency reaches the level required of B.A. candidates in the department.

### Major Field Requirements

A minimum of 30 credit hours, to include R501-R502, L501, and R592 or equivalent. Students who have not had a two-semester nineteenth- and twentieth-century Russian literature course must take R563-R564 or replace these with two survey-type Russian literature survey courses at the graduate level. Students interested in pursuing doctoral studies in Russian language pedagogy are encouraged to take electives in other units, such as the Departments of Second Language Studies and Linguistics.

### Language Requirement

Mastery of Russian at minimum fifth-year level, as established through coursework or proficiency testing.

### Examination

No examination is required for a terminal M.A.T. degree.

### Doctor of Philosophy Degree

Three plans of study are offered: Plan A: Russian Literature; Plan B: Slavic Linguistics; Plan C: Slavic Literature and Culture

#### Plan A: Russian Literature

##### Admission Requirements

Students who have completed M.A. requirements may be admitted to the Ph.D program upon approval of a formal request for change of status.

##### Research Requirement

A semester-long independent study with a faculty mentor, culminating in an essay suitable for submission to a scholarly journal. This requirement is to be fulfilled prior to the qualifying examination, typically in the first semester of the Ph.D program.

##### General Requirements

1. 30 credits from M.A.
1. 12 credits from minor (if second Slavic language, cannot include first year and only 6 credits can come from language study).
3. One Slavic linguistics course.
4. Two semesters of a second Slavic language.
5. At least six literature, culture, or film courses (at least four from SLAV, substitutions subject to departmental approval), including at least one seminar.

Total: 69 credits of course work satisfying degree requirements of the department, plus 21 additional graduate credit hours, for a total of 90 credits hours as required by the Graduate School.

### Foreign Language Requirement

Reading knowledge of French or German. Also active knowledge of written and spoken Russian beyond that required for the M.A.

### Qualifying Examination

The qualifying examination will be based on the common departmental list in Russian literature and culture, supplemented by a special field list drawn up in consultation with the research committee and representing preliminary research toward the dissertation. The exam will comprise two written examinations and an oral examination. The first written exam will require students to interpret excerpts of cultural documents from the exam list; the other will prompt two essays, respectively displaying conceptual understanding of major issues in Russian culture 1) from the point of view of historical development and 2) with a focus on cultural forms, modes, and media. Both exams are to be taken within a single semester. When they have both been passed, an oral examination will be given within one month. The oral examination will cover the entire exam list and expect necessary context in Russian and European history and culture. In addition, it will have a portion dedicated to exploration of the special field. The examination provides an opportunity for students to demonstrate the range and depth of their scholarly interests and ability. In the semester following the oral qualifying exam, students are required to establish a research committee and to submit to all members of that committee a dissertation prospectus of approximately 10-15 pages with a short bibliography.

#### Plan B: Slavic Linguistics

##### Admission Requirements

Students who have completed M.A. requirements may be admitted to the Ph.D program upon approval of a formal request for change of status.

##### Research Requirement

A semester-long independent study with a faculty mentor, culminating in an essay suitable for submission to a scholarly journal. This requirement is to be fulfilled prior to the qualifying examination, typically in the first semester of the Ph.D program.

##### General Requirements

1. 30 credits from M.A.
2. One course in Slavic literature, culture or film
3. Two semesters of a third Slavic language.
4. 12 credits from minor.
5. At least six linguistics courses, including at least one seminar.

Total: 69 credits of course work satisfying degree requirements of the department, plus 21 additional graduate credit hours, for a total of 90 credits hours as required by the Graduate School.

### Language Requirement

Reading knowledge of French or German. Also active knowledge of a major Slavic language beyond the minimum required for the M.A. Reading knowledge of one Slavic language from each of the other two branches.

### Qualifying Examination

Three written examinations. One will cover all aspects of Slavic linguistics from the student's coursework. The second and third examinations will be in two different specialized areas of Slavic linguistics, with topics and

deadlines worked out together with the student's faculty advisor. While the specialized exams are ordinarily expected to include one topic from Slavic synchronic linguistics and another from Slavic diachronic linguistics, both may be synchronic or diachronic so long as the general areas are different.

All three examinations are to be taken within two successive semesters. The general examination is a scheduled written exam, while the second and third will typically be research quality papers written within a period of no more than 10 days. An oral examination will be given within one month after all written exams have been passed. This examination will be designed to provide an opportunity for students to demonstrate the range and depth of their scholarly interests and abilities. In the semester following the oral qualifying exam, students are required to establish a research committee and to submit to all members of that committee a dissertation prospectus of approximately 10-15 pages with a short bibliography.

### **Plan C: Slavic Literature and Culture** **Admission Requirements**

Students who have completed M.A. requirements may be admitted to the Ph.D program upon approval of a formal request for change of status.

### **Research Requirement**

A semester-long independent study with a faculty mentor, culminating in an essay suitable for submission to a scholarly journal. This requirement is to be fulfilled prior to the qualifying examination, typically in the first semester of the Ph.D program.

### **General Requirements**

1. 30 credits from M.A.
2. One appropriate linguistics course
3. Two semesters of a second Slavic language
1. 12 credits from minor (if second Slavic language, cannot include first year and only 6 credits can come from language study)
5. At least six literature, culture, or film courses (at least four from SLAV, substitutions subject to departmental approval), including at least one seminar

Total: 69 credits of course work satisfying degree requirements of the department, plus 21 additional graduate credit hours, for a total of 90 credits hours as required by the Graduate School.

### **Foreign Language Requirement**

Reading knowledge of French or German. Also active knowledge of a major Slavic language beyond that required for the M.A.

### **Qualifying Examination**

Three written examinations based on reading lists prepared with the student's adviser and covering specific time periods, genres, and/or areas of specialization. All three of these written examinations are to be taken within two successive semesters. When they have been passed, an oral examination will be given within one month. The oral examination will cover not only the areas covered by

the student's reading lists, but also history and culture of the student's primary Slavic area of specialization, and major literary developments in the rest of Europe, including those in the second Slavic literature. The examination will be designed to provide an opportunity for students to demonstrate the range and depth of their scholarly interests and ability. In the semester following the oral qualifying exam, students are required to establish a research committee and to submit to all members of that committee a dissertation prospectus of approximately 10-15 pages with a short bibliography.

### **Faculty**

#### **Chairperson**

Professor George H. Fowler\*

#### **Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### **Professors**

Henry R. Cooper Jr.\* (Emeritus), Ronald F. Feldstein\* (Emeritus), Steven L. Franks\*, Howard H. Keller (Emeritus), Russell S. Valentino\*, Bronislava Volková\* (Emerita)

#### **Associate Professors**

Andrew R. Durkin\* (Emeritus), Jacob Emery\*, George H. Fowler\*, Christina Z. Ilias (Emerita), Dodona I. Kiziria (Emerita), Jerzy Kolodziej (Emeritus), Vadim Liapunov\* (Emeritus), Joanna Ni#y#ska\*, Maria Shardakova\*

#### **Assistant Professors**

Marina Anti#\*, Ma#gorzata #avar\*, Elizabeth F. Geballe\*

#### **Adjunct Professors**

Halina Goldberg\*, Dov-Ber Kerler\*, Bill Johnston\*

#### **Adjunct Associate Professor**

Damir #avar\*, Joshua S. Malitsky\*, Patrick Michelson\*

#### **Professor of the Practice**

Gene Coyle (Emeritus)

#### **Senior Lecturers**

Sofiya Asher, Craig Cravens, Jeffrey D. Holdeman, Svitlana Melnyk, Miriam Shrager

#### **Lecturers**

#ukasz Sici#ski

#### **Visiting Lecturer**

Teuta Ismaili

#### **Visiting Scholar**

Bogdan Rakic (Affiliate Member)

## Courses

### Graduate Russian

- **SLAV-R 401 Advanced Russian I (3 cr.)**P: Grade of B or higher in R302. Refinement of active and passive language skills, with emphasis on vocabulary building and word usage. Extensive reading, discussion, composition writing. Individualized remedial drill in grammar and pronunciation aimed at preparing students to meet departmental language proficiency standards.
- **SLAV-R 402 Advanced Russian II (3 cr.)**P: Grade of B or higher in R401. Refinement of active and passive language skills, with emphasis on vocabulary building and word usage. Extensive reading, discussion, composition writing. Individualized remedial drill in grammar and pronunciation aimed at preparing students to meet departmental language proficiency standards.
- **SLAV-R 403 Russian Phonetics (3 cr.)**
- **SLAV-R 405 Readings in Russian Literature I (3 cr.)**May not be used for credit toward graduate degree in the department.
- **SLAV-R 406 Readings in Russian Literature II (3 cr.)**May not be used for credit toward graduate degree in the department.
- **SLAV-R 407 Readings in Russian Culture, History, Society I (3 cr.)**P: R302 or equivalent. C: R401 or consent of department. Extensive translation from the original of selected works on Russian history, government, music, folklore, geography, culture. Discussion of both linguistic problems and content.
- **SLAV-R 408 Readings in Russian Culture, History, Society II (3 cr.)**P: R302 or equivalent. C: R402. Extensive translation from the original of selected works on Russian history, government, music, folklore, geography, culture. Discussion of both linguistic problems and content.
- **SLAV-R 491 Russian for Graduate Students I (3 cr.)**Graduate credit not given.
- **SLAV-R 492 Russian for Graduate Students II (3 cr.)**Graduate credit not given.
- **SLAV-R 501 Advanced Russian Syntax and Stylistics I (3 cr.)**
- **SLAV-R 502 Advanced Russian Syntax and Stylistics II (3 cr.)**
- **SLAV-R 570 Political Russian (3 cr.)** The course is planned for advanced Russian students who are oriented toward and involved in research of economics and politics of the former Soviet Union. In particular, this course would target graduate students in the REEI. The course is taught in Russian, therefore students are expected to have advanced linguistic proficiency. During this course students will continue developing advanced skills in Russian.
- **SLAV-R 572 Business Russian (3 cr.)** This course is designed as an introductory survey of basic business topics and concepts as related to the Russian society. We will discuss such topics as business and society, ethics and gender in business, business and politics etc. Particular emphasis will

be placed on language etiquette in written and oral business communication. The course is taught in Russian, therefore students are expected to have advanced linguistic proficiency. During this course students will continue developing advanced skills in Russian.

- **SLAV-R 592 Methods of Russian Language Instruction (3 cr.)** Methods of teaching Russian. The course will deal with all methods currently in use in foreign language pedagogy, with emphasis on proficiency-oriented teaching as applied to Russian. Review of Russian textbooks and video materials. Design and preparation of syllabi and development of lesson plans. Required for Slavic AIs.

### Russian Literature

- **SLAV-R 503 Old Russian Literature (3 cr.)**Lectures and readings in the original of Old Russian literary works from the eleventh to the seventeenth centuries.
- **SLAV-R 504 Eighteenth-Century Russian Literature (3 cr.)**Russian intellectual life during the century of Russia's Europeanization; philosophical, religious, aesthetic, and social problems revealed in the writings of leading Russian authors of the century.
- **SLAV-R 505 Nineteenth-Century Russian Literature I (3 cr.)**Development of Russian prose from Sentimentalism and Romanticism through Realism, with a focus on analysis of primary sources and original texts, to discover narrative and aesthetic principles and practices of major writers of the century.
- **SLAV-R 506 Nineteenth-Century Russian Literature II (3 cr.)**Development of Russian prose from Sentimentalism and Romanticism through Realism, with a focus on analysis of primary sources and original texts, to discover narrative and aesthetic principles and practices of major writers of the century.
- **SLAV-R 507 Twentieth-Century Russian Literature I (3 cr.)**Principal literary movements, major literary works from Symbolism through the Revolution and the Soviet period, culminating in the writing of the Perestroika period.
- **SLAV-R 508 Twentieth-Century Russian Literature II (3 cr.)**Principal literary movements, major literary works from Symbolism through the Revolution and the Soviet period, culminating in the writing of the Perestroika period.
- **SLAV-R 520 Twentieth-Century Russian Author: (name variable) (3 cr.)**Thorough investigation of the oeuvre of one or several twentieth-century Russian author(s).
- **SLAV-R 530 Pushkin (3 cr.)**
- **SLAV-R 531 Gogol (3 cr.)**
- **SLAV-R 532 Dostoevsky (3 cr.)**
- **SLAV-R 533 Tolstoy (3 cr.)**
- **SLAV-R 534 Tolstoy and Dostoevsky (3 cr.)**Introduction to the masterworks of Leo Tolstoy and Feodor Dostoevsky. Discussions focus on four major novels; in addition, students read several important short stories and novellas by each author. Lectures in English; readings may be done in English or Russian.

- **SLAV-R 535 Chekhov (3 cr.)**
- **SLAV-R 545 Jewish Characters in Russian Literature (3 cr.)** Approaches the "Jewish Question," the identity and self-identity of Jewish characters from the standpoints of literary analyses, cultural ethnography, folklore and religious studies, and social and political history. Literary works of major nineteenth- and twentieth-century Russian writers provide the primary sources for the discussions.
- **SLAV-R 563 Pushkin to Dostoevsky (3 cr.)**
- **SLAV-R 564 Tolstoy to Solzhenitsyn (3 cr.)**

### Genre Courses

- **SLAV-R 550 Russian Drama (3 cr.)** Development of Russian drama from the end of the eighteenth century to the present. Knowledge of Russian not required, but students knowing Russian will be expected to read varying amounts in the original.
- **SLAV-R 551 Russian Poetry (3 cr.)** Metrical and thematic developments in Russian poetry against aesthetic and philosophical background. Major works read in the original.
- **SLAV-R 552 Russian and Soviet Film (3 cr.)** Development of Russian cinematography from 1915 to the present. The characteristic features of Soviet films; the theory and practice of filmmaking in the Soviet Union; the Soviet cinema in its relationship to Russian literature, in the larger context of European Cinema Art.
- **SLAV-R 553 Central European Cinema (3 cr.)** Emphasizes broad cultural approach to the subject of Central European cinema. Highlights the major developments of cinema in Poland, Hungary, Bulgaria, and the former Republics of Czechoslovakia and Yugoslavia in the post-Stalin era. The course will be divided into four segments, each dealing with a separate theme.

### Theory

- **SLAV-R 500 Proseminar in Russian Literature (3 cr.)** Designed as an introduction to graduate study in Russian literature, research methods, sources. History of Slavic scholarship. Required of all graduate literature majors, in first or second semester of study.
- **SLAV-R 598 Literary Theory in its Russian and East European Context (3 cr.)** Advanced survey of literary theories originating in the Slavic world (Formalism, Bakhtin, Tartu School, etc.) and their interaction with western literary theories.
- **SLAV-L 599 Prague School Linguistics and Poetics (3 cr.)** P: Interest in theory. An interdisciplinary introduction into linguistics, semiotics, and literary theory based on the methodology of the Prague School. Gives students tools with which to approach analysis in any of these areas. Also included are theories of theater, folklore, and visual arts.

### Seminar

- **SLAV-R 601 Seminar in Russian Literature (1-6 cr.)** Subject to vary. Intensive study of an author, a period, or a literary movement. Research papers required. May be repeated for credit.

### Synchronic

- **SLAV-L 501 Structure of Russian I: Phonology and Morphology (3 cr.)** Introduction to graduate study in Slavic linguistics. Survey of the field. Research sources. Basic concepts of diachronic linguistics. Introduction to synchronic linguistic theory: Bloomfield, Chomsky, Jakobson.
- **SLAV-L 502 Structure of Russian II: Syntax and Semantics (3 cr.)** P: L501 or consent of instructor. Introduction to the syntactic and semantic structure of contemporary standard Russian.
- **SLAV-L 503 Russian Word Formation (3 cr.)** P: L501. Survey of principles of word formation in Russian. Discussion of formal (morphophonemic) rules governing prefixation, suffixation, and compounding; productive vs. non-productive processes; and the semantics of derived words.
- **SLAV-L 504 Comparative Slavic Morphosyntax (3 cr.)** Selected topics in the morphosyntax of Slavic languages will be examined from a comparative perspective. Introduces students both to modern generative grammar and to a range of relevant problems posed by Slavic.
- **SLAV-L 505 Structure and History of a Slavic Language (3 cr.)** Synchronic and diachronic analysis of a single Slavic language (usually of language not regularly taught in department), including developmental trends and dialects. Will attempt to provide rapid facility for reading texts (especially linguistic), by building on student's knowledge of Russian.
- **SLAV-L 599 Prague School Linguistics and Poetics (3 cr.)** P: Interest in theory. An interdisciplinary introduction into linguistics, semiotics, and literary theory based on the methodology of the Prague School. Gives students tools with which to approach analysis in any of these areas. Also included are theory of theater, folklore, and visual arts.

### Diachronic

- **SLAV-L 571 Old Church Slavonic (3 cr.)** History and grammar of Old Church Slavonic; alphabet, sound system, morphology, and elements of syntax. Reading of Old Church Slavonic texts.
- **SLAV-L 572 Comparative Slavic (3 cr.)** A comparative survey of the Slavic languages and their historical development.
- **SLAV-L 573 History of East Slavic (3 cr.)** Survey of East Slavic phonology from Common Slavic to the present. Dialectal divergence in Old Russian and formation of Great Russian, Ukrainian, and Belorussian as literary languages.
- **SLAV-L 574 History of South Slavic (3 cr.)** Since Common Slavic period. Phonemic and morphological divergences within Southern Slavic language group. Formation of Southern Slavic literary languages, with emphasis on history of Serbo-Croatian and Bulgarian.
- **SLAV-L 575 History of West Slavic (3 cr.)** Since Common Slavic period. Formation of Western Slavic literary languages, with emphasis on the history of Polish and Czech. Development of Polish and Czech phonemic systems and their dialectal differentiation.



- **SLAV-L 576 History of the Russian Literary Language (3 cr.)** Since Common Slavic period. Formation of Western Slavic literary languages, with emphasis on the history of Polish and Czech. Development of Polish and Czech phonemic systems and their dialectal differentiation.

### Seminar

- **SLAV-L 600 Proseminar in Slavic Linguistics (3 cr.)** Introduction to the profession of Slavic linguistics. Emphasis on linguistic argumentation, research methods, sources, and critical reasoning. Exposure to a range of approaches to Slavic linguistics and practical training in research methodology and scholarly argumentation. Preparation for doctoral program admissions examination.
- **SLAV-L 601 Seminar in Synchronic Slavic Linguistics (1-6 cr.)** Detailed investigation of one or more specialized areas of synchronic Slavic linguistics. Topic varies; may be repeated for credit.
- **SLAV-L 602 Seminar in Diachronic Slavic Linguistics (1-6 cr.)** Detailed investigation of one or more aspects of Slavic historical linguistics (e.g., historical phonology, morphophonology, morphology, syntax). Examination of general theories and specific issues, complex problems, and controversial or innovative solutions. Topic varies; may be repeated for credit.
- **SLAV-L 603 Topics in Slavic Linguistics (1-6 cr.)**

### Albanian

- **SLAV-A 511 Intensive Elementary Albanian I (5 cr.)** No previous knowledge of Albanian required. Introduction of basic structure of contemporary Albanian language and culture, reading and discussion of basic texts
- **SLAV-A 512 Intensive Elementary Albanian II (5 cr.)** No previous knowledge of Albanian required. Introduction of basic structure of contemporary Albanian language and culture, reading and discussion of basic texts.

### Czech

- **SLAV-C 501 Elementary Czech I (3 cr.)**
- **SLAV-C 502 Elementary Czech II (3 cr.)**
- **SLAV-C 503 Intermediate Czech I (3 cr.)**
- **SLAV-C 504 Intermediate Czech II (3 cr.)**
- **SLAV-C 505 Advanced Intermediate Czech I (3-3 cr.)** Development of oral and written fluency and comprehension in Czech language.
- **SLAV-C 506 Advanced Intermediate Czech II (3 cr.)** Development of oral and written fluency and comprehension in Czech language based on morphological, lexical, and syntactical analysis of contemporary textual materials.
- **SLAV-C 511 Intensive Elementary Czech I (5 cr.)** A history of the Czech lands and their art, literature, and music from the ninth through the late nineteenth centuries. Instruction on Slovak history; literature and language included.
- **SLAV-C 512 Intensive Elementary Czech II (5 cr.)** A history of the Czech lands and their art, literature, and music from the ninth through the late nineteenth centuries. Instruction on Slovak history; literature and language included.

- **SLAV-C 513 Intensive Intermediate Czech I (5 cr.)** A history of the Czech lands and their art, literature, and music from the ninth through the late nineteenth centuries. Instruction on Slovak history; literature and language included.
- **SLAV-C 514 Intensive Intermediate Czech II (5 cr.)** A history of the Czech lands and their art, literature, and music from the ninth through the late nineteenth centuries. Instruction on Slovak history; literature and language included.
- **SLAV-C 563 History of Czech Literature and Culture (3 cr.)** A history of the Czech lands and their art, literature, and music from the ninth through the late nineteenth centuries. Instruction on Slovak history; literature and language included.
- **SLAV-C 564 Modern Czech Literature and Culture (5 cr.)** Survey of literary, cultural, historical, and political developments from the late nineteenth century through the present. Slovak culture and émigré literature is also covered.
- **SLAV-C 565 Seminar in Czech Literature and Culture (3 cr.)** Intensive study of an author, a period, or a literary or cultural development. Research papers required. May be repeated for credit when topic varies. May be repeated for credit when topic varies.
- **SLAV-V 501 Elementary Slovak I (3 cr.)**
- **SLAV-V 502 Elementary Slovak II (3 cr.)**

### Polish

- **SLAV-P 501 Elementary Polish I (3 cr.)**
- **SLAV-P 502 Elementary Polish II (3 cr.)**
- **SLAV-P 503 Intermediate Polish I (3 cr.)**
- **SLAV-P 504 Intermediate Polish II (3 cr.)**
- **SLAV-P 505 Advanced Intermediate Polish I (3 cr.)**
- **SLAV-P 506 Advanced Intermediate Polish II (3 cr.)**
- **SLAV-P 511 Intensive Elementary Polish I (5 cr.)**
- **SLAV-P 512 Intensive Elementary Polish II (5 cr.)**
- **SLAV-P 513 Intensive Intermediate Polish I (5 cr.)**
- **SLAV-P 514 Intensive Intermediate Polish II (5 cr.)**
- **SLAV-P 563 Survey of Polish Literature and Culture I (3 cr.)** Polish literature from its origins to the end of the eighteenth century.
- **SLAV-P 564 Survey of Polish Literature and Culture II (3 cr.)** Polish literature of the nineteenth and twentieth centuries.
- **SLAV-P 565 Seminar in Polish Literature and Culture: (variable title) (3 cr.)** Intensive study of an author, a period, or a literary or cultural development. Research papers required. May be repeated for credit when topic varies.
- **SLAV-P 566 Seminar in Polish Literature and Culture: (variable title) (3 cr.)** Explores the post-war history of Polish cinema, made famous worldwide by directors such as Wajda, Kieslowski, and Polanski. Topics of interest: "the cinema of moral anxiety" (1970), absurd comedies that depicted life under communism, adaptations of literary classics, new topics and genres in Polish film after 1989.

### Romanian

- **SLAV-M 501 Elementary Romanian I (3 cr.)**



- **SLAV-M 502 Elementary Romanian II (3 cr.)**
- **SLAV-M 503 Intermediate Romanian I (3 cr.)**
- **SLAV-M 504 Intermediate Romanian II (3 cr.)**
- **SLAV-M 511 Intensive Elementary Romanian I (5 cr.)**
- **SLAV-M 512 Intensive Elementary Romanian II (5 cr.)**
- **SLAV-M 513 Intensive Intermediate Romanian I (5 cr.)**
- **SLAV-M 514 Intensive Intermediate Romanian II (5 cr.)**
- **SLAV-M 565 Individual Readings in Romanian Language and Literature (arr. cr.)**

### South Slavic

- **SLAV-B 501 Elementary Bulgarian I (3 cr.)**
- **SLAV-B 502 Elementary Bulgarian II (3 cr.)**
- **SLAV-B 601 Introduction to Bulgarian (3 cr.)**P: Knowledge of another Slavic language or consent of instructor. Introduction to basic morphology and syntax of Bulgarian.
- **SLAV-G 501 Elementary Georgian I (3 cr.)**
- **SLAV-G 502 Elementary Georgian II (3 cr.)**
- **SLAV-G 511 Intensive Elementary Georgian I (5 cr.)**
- **SLAV-G 512 Intensive Elementary Georgian II (5 cr.)**P: Consent of instructor. Phonology, morphology, and syntax of the Slovene language. For reading knowledge.
- **SLAV-K 501 Elementary Slovene I (3 cr.)**
- **SLAV-K 502 Elementary Slovene II (3 cr.)**
- **SLAV-K 601 Introduction to Slovene (3 cr.)**P: Consent of instructor. Phonology, morphology, and syntax of the Slovene language. For reading knowledge.
- **SLAV-Q 501 Elementary Macedonian I (3 cr.)**No previous knowledge of Macedonian language required. Introduction to basic structure of contemporary Macedonian and the culture of Macedonia. Reading and discussion of basic texts. Credit given for only one of the following: Q101, Q311, Q511, Q501.
- **SLAV-Q 502 Elementary Macedonian II (3 cr.)**No previous knowledge of Macedonian required. Introduction to basic structure of contemporary Macedonian and the culture of Macedonia. Reading and discussion of basic texts. Credit given for only one of the following: Q102, Q312, Q502, Q512.
- **SLAV-Q 503 Intermediate Macedonian I (3 cr.)**P: Q502 or permission of instructor. Intermediate Macedonian is a continuation of Elementary Macedonian and will further develop the students' proficiency in Macedonian by focusing equally on reading, listening, writing, speaking as well as grammar and culture.
- **SLAV-Q 504 Intermediate Macedonian II (3 cr.)**P: Q503 or permission of instructor. Intermediate Macedonian is a continuation of Elementary Macedonian and will further develop the students' proficiency in Macedonian by focusing equally on reading, listening, writing, speaking as well as grammar and culture.
- **SLAV-S 501 Elementary Bosnian, Croatian, and Serbian I (3 cr.)**
- **SLAV-S 502 Elementary Bosnian, Croatian, and Serbian II (3 cr.)**
- **SLAV-S 503 Intermediate Bosnian, Croatian, and Serbian I (3 cr.)**
- **SLAV-S 504 Intermediate Bosnian, Croatian, and Serbian II (3 cr.)**
- **SLAV-S 505 Advanced Intermediate Bosnian, Croatian, and Serbian I (3 cr.)** P: S504 or equivalent proficiency. Reading of literary texts from a variety of periods and locations in the Bosnian-Croatian-Serbian speech area. Sequence of readings in original parallels syllabus of S563-S564 in translation. Review of grammar, syntax, and expansion of lexicon as needed.
- **SLAV-S 506 Advanced Intermediate Bosnian, Croatian, and Serbian II (3 cr.)** P: S504 or equivalent proficiency. Reading of literary texts from a variety of periods and locations in the Bosnian-Croatian-Serbian speech area. Sequence of readings in original parallels syllabus of S563-S564 in translation. Review of grammar, syntax, and expansion of lexicon as needed.
- **SLAV-S 511 Intensive Elementary Bosnian, Croatian, and Serbian I (5 cr.)** Survey of the cultures of the Slovenes, Croats, Serbs, Montenegrins, Bosnians, Macedonians, and Bulgarians from earliest times to the present. Reading and discussion of their major literary works in translation.
- **SLAV-S 512 Intensive Bosnian, Croatian, and Serbian II (5 cr.)** Survey of the cultures of the Slovenes, Croats, Serbs, Montenegrins, Bosnians, Macedonians, and Bulgarians from earliest times to the present. Reading and discussion of their major literary works in translation.
- **SLAV-S 513 Intensive Intermediate Bosnian, Croatian, and Serbian I (5 cr.)** Survey of the cultures of the Slovenes, Croats, Serbs, Montenegrins, Bosnians, Macedonians, and Bulgarians from earliest times to the present. Reading and discussion of their major literary works in translation.
- **SLAV-S 514 Intensive Intermediate Bosnian, Croatian, and Serbian II (5 cr.)** Survey of the cultures of the Slovenes, Croats, Serbs, Montenegrins, Bosnians, Macedonians, and Bulgarians from earliest times to the present. Reading and discussion of their major literary works in translation.
- **SLAV-S 563 Literature and Culture of the Southern Slavs I (3 cr.)** Survey of the cultures of the Slovenes, Croats, Serbs, Montenegrins, Bosnians, Macedonians, and Bulgarians from earliest times to the present. Reading and discussion of their major literary works in translation.
- **SLAV-S 564 Literature and Culture of the Southern Slavs II (3 cr.)** Survey of the cultures of the Slovenes, Croats, Serbs, Montenegrins, Bosnians, Macedonians, and Bulgarians from earliest times to the present. Reading and discussion of their major literary works in translation.
- **SLAV-S 565 Seminar in South Slavic Literatures (3 cr.)**P: S563-S564 or consent of instructor. Intensive study of an author, a period, or a literary

development. Research papers required. May be repeated for credit when topic varies.

- **SLAV-U 501 Elementary Ukrainian I (3 cr.)** Introduction to basic structure of contemporary Ukrainian language and culture. No previous knowledge of Ukrainian is required.
- **SLAV-U 502 Elementary Ukrainian II (3 cr.)** Introduction to basic structure of contemporary Ukrainian language and culture. No previous knowledge of Ukrainian is required.
- **SLAV-U 582 Ukrainian through Russian (3 cr.)** An accelerated Ukrainian language course for those who have previous experience with another Slavic language. The course cover at least one year's worth of basic Ukrainian
- **SLAV-U 601 Introduction to Ukrainian (3 cr.)** P: Knowledge of another Slavic language or consent of instructor. Introduction to basic morphology and syntax of Ukrainian.

### General Slavic

- **SLAV-S 540 Graduate Readings in Slavic Studies (arr. cr.)** This course is eligible for a deferred grade. Readings may be selected in any of the Slavic languages.
- **SLAV-S 560 Special Studies in Slavic Literature (3 cr.)**
- **SLAV-S 562 Topics in Slavic Studies (1-3 cr.)** Topics vary as needed and may be selected from any area of Slavic language, literature, or culture studies.
- **SLAV-S 801 Ph.D. Dissertation (arr. cr.)** This course is eligible for a deferred grade.

### Summer Language Workshop

- **SLAV-R 431 Intensive Russian Oral (2 cr.)**
- **SLAV-R 434 Intensive Russian Phonetics (1 cr.)**
- **SLAV-N 581 Fifth Year Russian I (5 cr.)**
- **SLAV-N 582 Fifth Year Russian II (5 cr.)**
- **SLAV-N 691 Sixth Year Russian I (5 cr.)**
- **SLAV-N 692 Sixth Year Russian II (5 cr.)**

### Other

- **SLAV-U 511 Intensive Elementary Ukrainian I (5 cr.)** No previous knowledge of Ukrainian required. First semester designed to provide active command of phonology and basic grammatical patterns of Ukrainian.
- **SLAV-U 512 Intensive Elementary Ukrainian II (5 cr.)** P: U511 or U501 or equivalent proficiency. Continuation of U511, designed to provide active command of phonology and basic grammatical patterns.
- **SLAV-U 513 Intensive Intermediate Ukrainian I (5 cr.)** P: U512 or permission of instructor. Continuation of work in structure and vocabulary acquisition through grammar study, drills, readings; oral practice and written exercises.
- **SLAV-U 514 Intensive Intermediate Ukrainian II (5 cr.)** P: U513 or permission of instructor. Continuation of work in structure and vocabulary acquisition through grammar study, drills, readings; oral practice and written exercises.

## Social Informatics

**Rob Kling Center for Social Informatics**

**Departmental URL:** [rkcsi.indiana.edu/](https://rkcsi.indiana.edu/)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Ph.D. Minor in Social Informatics

Social Informatics (SI) refers to the interdisciplinary study of the design, uses, and consequences of information and communications technologies (ICT) that takes into account their interaction with institutional and cultural contexts. Social Informatics research examines the roles of technologies in social and organizational change and the social shaping of ICT. SI research and SI courses are organized within diverse fields, including information systems, telecommunications, journalism, information science, and political science. One key goal of SI is to shape ICTs and policies relevant to them in order to enhance human communication and lead to more acceptable technological developments at organizational and social levels.

#### Course Requirement for the Ph.D. Minor in Social Informatics (12 credit hours)

This minor consists of four courses (12 credits), selected from an approved list of courses as described below. Please note that a student minoring in SI cannot include classes in the minor from their home department. Students who complete the Ph.D. minor in SI at Indiana University must demonstrate proficiency in a set of courses that examines the design, uses, consequences of and/or policies impacting ICT use in social, cultural, or institutional contexts. The SI Ph.D. minor emphasizes theoretical and methodological issues, as well as substantive issues.

The student must submit a written proposal to the Steering Committee describing a detailed course of study. The proposal will explain the student's focus of study, its relationship to SI, the relationship of proposed SI courses to the overall program of study, and the likely dissertation topic or area. It will also include the name of the student's SI Ph.D. minor advisor. While the SI Ph.D. minor is likely to be completed before a student develops a detailed dissertation proposal, it is expected that the dissertation will address issues related to social informatics. If a student is interested in a course that is not on the approved course list, he or she can petition the director and Steering Committee to have the course included as part of the minor; the procedure is described below.

The complete proposal must be approved by the Steering Committee. The Steering Committee must also attest that the approved course of study has been completed successfully. Students seeking the Ph.D. minor in SI must also obtain the approval of their Ph.D. Advisory Committees. The range of courses listed on the RKCSI courses Web site (<https://rkcsi.luddy.indiana.edu/ph-d-minor/>) is designed to enable students to construct

a program for the Ph.D. minor in SI that is relevant to their primary research interests. This program of courses should include some courses that have strong theoretical and/or methodological content, as well as substantive issues.

### Specific Course Requirements

Students seeking a Ph.D. minor in Social Informatics must complete four graduate level courses (12 hours) that have been selected from the courses listed on the RKCSI Courses at Indiana page; this list includes courses that have been specifically identified as approved for the Ph.D. minor. One of the four courses for the SI minor must be taken in the Media School or the Luddy School of Informatics, Computing, and Engineering and this course, which will serve as a foundation course for the minor, must be approved by the committee. This course should be taken first and may not be in the student's home school or department. Other courses in these schools and departments may be taken as electives. Possibilities include:

- I609 or I709 Advanced Seminar I or II in Informatics, Topic: Social Informatics
- Z514 Social Aspects of Information Technology
- MSCH-T604 Topical Seminar in Media and Society

In addition, students can propose, in consultation with their advisors, that their minor include other SI courses that are not on this list, or that are on the list but have not yet been formally approved for the SI minor. Such proposals should include syllabi and other detailed information about the course. The proposal should make a convincing case that the course is aligned with one or more main SI themes, such as the complex relationships among technology, people, their work and/or play, and the contexts within which people interact with technology.

### Electives

Students seeking the Ph.D. minor in social informatics must complete an additional three courses (9 credit hours). These additional courses must be selected from the list above or the following list. The elective courses should be taken from at least two departments or schools other than the student's home academic unit. The Social Informatics Program is developing rapidly at IU, and we expect that additional doctoral-level courses will be offered each year. Students can propose that their minors include other social informatics courses that are not included on this list. Such proposals should include syllabi and other detailed information about the course.

### Department of Information and Library Science

Z513 Organizational Informatics  
Z541 Information Policy  
Z542 International Information Issues  
Z544 Gender and Computerization  
Z643 The Information Industry  
Z652 Digital Libraries  
Z661 Concepts and Contemporary Issues in Human-Computer Interaction

### Kelley School of Business

S600 Foundations in Information Systems Research  
S602 Information Systems Technology Research  
S606 IS Strategy and Management Research  
S607 Collaborative Technologies Research

### S796 Special Topics

### Cognitive Science Program

Q540 Philosophical Foundations of the Cognitive and Information Sciences

### Department of Communication and Culture

CMCL 620: Media, Politics, and Power: Ethnographic Approaches to New Media: Configuring the Object of Analysis in New Media Research

### School of Education

P550 Cognition and Semiotics

### School of Informatics and Computing

I605 Social Foundations of Informatics  
I690 Seminar in Social Informatics II: Political and Economic Issues

### Department of Political Science

Y665 Public Law and Policy

### Department of Telecommunications

T602 Interactivity and New Media  
T610 The Networked Society

### Faculty

### Program Steering Committee Members

Prina Fichman\* Program Director (Luddy School of Informatics, Computing, and Engineering)

### Core Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Alan Dennis\* (Kelly School of Business), Hamid Ekbia\* (Luddy School of Informatics, Computing, and Engineering), Ilana Gershon\* (Department of Anthropology), Anthony Gerth (Kelly School of Business), Prina Fichman\* (Luddy School of Informatics, Computing, and Engineering), Noriko Hara\* (Luddy School of Informatics, Computing, and Engineering), Jeffrey Hart\* (Political Science), Harmeet Sawhney\* (Media School), Terrence Mason\* (School of Education), Eugene McGregor (SPEA), Howard Rosenbaum\* (Luddy School of Informatics, Computing, and Engineering).

### Associate Professors

Joshua Danish\* (School of Education), John Paollilo\* (Luddy School of Informatics, Computing, and Engineering), Selma Sabanovic\* (Luddy School of Informatics, Computing, and Engineering).

## Social Science Approaches to Health and Healing Systems (SAHS)

### College of Arts and Sciences

Departmental E-mail: [pescosol@indiana.edu](mailto:pescosol@indiana.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

## Curriculum

### Ph.D. Minor in Social Science Approaches to Health and Healing Systems (SAHS)

The SAHS minor is a cross-departmental/school/campus program open to Ph.D. students at Indiana University (IUB and IUPUI campuses). It requires four courses (a minimum of 12 credit hours) from the approved list, including at least one of the following: S660 (Medical Sociology and Social Psychiatry, Part I or II, offered at IUB), SOC R515 (Sociology of Health and Illness, offered at IUPUI), SOC R585 (Social Aspects of Mental Health and Mental Illness, offered at IUPUI), or SOC R610 (Sociology of Health and Illness Behavior). Courses outside the currently approved list may be considered for the minor in consultation with the director. One of the courses included as part of the minor program may be from the student's disciplinary major. The minor is administered by the Department of Sociology, IUB. Interested students should consult with the director of the minor to develop a course plan.

## Faculty

### Director

Professor Bernice A. Pescosolido\*, [pescosol@indiana.edu](mailto:pescosol@indiana.edu)

### Core Faculty

(An asterisk [\*] denotes membership in the University Graduate School with the endorsement to direct doctoral dissertations.)

### Distinguished Professor

Bernice Pescosolido\* (Sociology, IUB)

### Chancellor's Professor and Dean

Mohammed R. Torabi\* (School of Public Health, IUB)

### Robert A. Lucas Professor Emeritus

Roger Dworkin\* (Law, IUB)

### Professors

David Bell (Sociology, IUPUI), Ellen Dwyer\* (Emerita, History, Criminal Justice, IUB), Peter Finn\* (Psychological and Brain Sciences, IUB), Carol Brooks Gardner\* (Sociology, IUPUI), Amy Holtzworth-Munroe\* (Psychological and Brain Sciences, IUB), William Hetrick\* (Psychological and Brain Sciences), Pamela Braboy Jackson\* (Sociology, IUB), Paul Jamison\* (Emeritus, Anthropology, IUB), John McGrew (Psychology, IUPUI), Jane McLeod\* (Sociology, IUB), Brian O'Donnell\* (Psychological and Brain Sciences, IUB), Eliza Pavalko\* (Sociology, IUB), Kosali Simon\* (SPEA, IUB), Steven Stowe\* (Emeritus, History, IUB), Peggy A. Thoits\* (Sociology, IUB), Virginia Vitzthum (Anthropology, IUB), Richard Ward\* (Anthropology, IUPUI), Andrea Wiley (Anthropology, IUB), Colin Williams\* (Sociology, IUPUI), Eric Wright\* (Fairbanks School of Public Health, IUPUI), William Yarber\* (Applied Health Science, IUB)

### Associate Professors

Silvia Bigatti (Department of Public Health, IUPUI), Nancy Ellis\* (Applied Health Science, IUB), Carrie Foote (Sociology, IUPUI), William P. Gronfein (Sociology, IUPUI), Ann Holmes\* (Public and Environmental Affairs, IUPUI), Tamara Leech (Sociology, IUPUI), Susan Mid-

dlestadt\* (Applied Health Science, IUB), Sarah D. Phillips\* (Anthropology, IUB), Michael Reece\* (Applied Health Science, IUB)

### Assistant Professors

Zobeida Bonilla (Applied Health Science, IUB), Brian D'Onofrio\* (Psychological and Brain Sciences, IUB), Devon Hensel (Sociology, IUPUI), Frederika Kaestle\* (Anthropology, IUB), Cara Lewis (Psychological and Brain Sciences, IUB), Michael Muehlenbein\* (Anthropology, IUB), Fernando Ona (Applied Health Science, IUB), Kevin Rand (Psychology, IUPUI), Jesse Stewart (Psychology, IUPUI)

### Clinical Associate Professor

Catherine Sherwood-Laughlin (Applied Health Science, IUB)

### Clinical Assistant Professors

Lesla Lorenzen-Huber (Applied Health Science, IUB)

## Courses

Curriculum Courses Faculty

### Cross-Listed Courses

#### Anthropology

B480 Human Growth and Development (3 cr.) IUB and IUPUI  
B512 Evolutionary Medicine (3 cr.)  
B540 Hormones and Human Behavior (3 cr.)  
B543 Reproductive Ecology (3 cr.)  
B544 Women's Bodies (3 cr.)  
B545 Nutritional Anthropology (3 cr.)  
B548 Human Demography and Life History (3 cr.)  
B570 Human Adaptation: Biological Approaches (3 cr.)  
E445/645 Advanced Seminar in Medical Anthropology (3 cr.) IUB and IUPUI

#### Criminal Justice

P680 Law and Psychiatry (3 cr.)

#### Economics

E528 Economic Analysis of Health Care (3 cr.) IUPUI

#### Law

B619 Law and Medicine (3 cr.) permission of instructor and minor director required  
B661 Law and Biomedical Advance (3 cr.) permission of instructor and minor director required

### Psychological and Brain Sciences

I545 Psychopharmacology (3 cr.) IUPUI  
I555 Medical and Psychosocial Aspects of Chronic Illness (3 cr.) IUPUI  
I591 Psychopathology (3 cr.) IUPUI  
I614 Behavioral Medicine (3 cr.) IUPUI  
I618 Interventions in Health Psychology (3 cr.) IUPUI  
P530 Introduction to Clinical Science (3 cr.) permission of instructor required  
P531 Intervention and Evaluation (3 cr.) permission of instructor required  
P624 Principles of Psychopathology (3 cr.) permission of instructor required  
P641 Psychological Assessment (3 cr.) permission of instructor required  
P657 Topical Seminar (3 cr.) permission of director required for specific sections



P667 Neuropsychopharmacology (3 cr.)

### Public Health, School of (IUPUI)

H501 U.S. Health Care Systems, Policies and Ethical Challenges (3 cr.) IUPUI  
 H514 Health Economics (3 cr.) IUPUI  
 H515 Seminar in Health Policy (3 cr.) IUPUI  
 H516 Health Services Delivery and the Law (3 cr.) IUPUI  
 H521 Management Science for Health Services Administration (3 cr.) IUPUI  
 H615 Health Care Outcomes and Decision-Making (3 cr.) IUPUI

### Public Health, School of (IUB)

C501 Assessment and Planning in Public Health (3 cr.)  
 C505 Public Health Foundations and Leadership (3 cr.)  
 C510 Organization and Administration of Public Health Programs (3 cr.)  
 C512 Environmental Health Science (3 cr.)  
 C525 Health Information Systems, Technology, and Aging (3 cr.)  
 C529 Health and Disease Disparities in Diverse Communities (3 cr.)  
 C535 Contemporary Issues in Aging and Health (3 cr.)  
 C589 Models and Theories of Health Behavior (3 cr.)  
 C602 Intervention Design in Public Health (3 cr.)  
 C611 Epidemiology (3 cr.)  
 C615 Health, Longevity, and Integrative Therapies for the Later Years (3 cr.)  
 H500 Philosophy and Principles of Health Education (3 cr.)  
 H517 Health Care in Minority Communities (3 cr.)  
 H522 Promoting Women's Health (3 cr.)  
 H524 Gerontology: Multidisciplinary Perspectives (3 cr.)  
 H530 International Health (3 cr.)  
 H555 Issues in Human Sexuality and Health (3 cr.)  
 H594 Health Program Evaluation (3 cr.)

### Sociology

R515 Sociology of Health and Illness (3 cr.) IUPUI  
 R585 Social Aspects of Mental Health and Mental Illness (3 cr.) IUPUI  
 S526 The Sociology of Human Sexuality (3 cr.) IUPUI  
 S560 Topics in the Sociology of Health and Illness (3 cr.) IUPUI  
 S610 Sociology of Health and Illness Behavior (3 cr.) IUPUI  
 S660 Advanced Topics (3 cr.)

### Faculty

#### Director

Professor Patricia A. McManus\* (Sociology)

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Rudy Professor

Clem Brooks\* (Sociology)

#### Professors

Arthur Alderson\* (Sociology); Phil F. Carspecken\* (Education); Ginette Delandshere\* (Education); Barbara Dennis\* (Education); L. Shane Greene\* (Anthropology); Tim Hallett\* (Sociology); Brad Heim\* (Public and Environmental Affairs); Tim Hellwig\* (Political Science);

Lauren MacLean\* (Political Science); Patricia A. McManus\* (Sociology); Brea Perry\* (Sociology); Scott Robeson\* (Geography)

#### Associate Professors

Keera Allendorf\* (Sociology); Ishan Ashutosh\* (Geography); Steve Benard\* (Sociology); Jonathan Brauer (Criminal Justice); Jessica Calarco\* (Sociology); Christopher DeSante\* (Political Science); Seth Freedman\* (Public and Environmental Affairs); Alex Hollingsworth\* (Public and Environmental Affairs); Jessica Lester (Education); Ashlyn Aiko Nelson\* (Public and Environmental Affairs); Sarah Osterhoudt\* (Anthropology); Armando Razo\* (Political Science); Leslie Rutkowski (Education); Dubravka Svetina\* (Education); William Kindred Winecoff (Political Science); Coady Wing\* (Public and Environmental Affairs)

#### Assistant Professors

Keitlyn Alcantara (Anthropology); Patricia Basile (Geography); Michael Dwyer (Geography); Byungkyu (BK) Lee (Sociology); Julie Lorah (Education); Ore Koren (Political Science); Michael Schultz (Sociology); Jennifer Silva (Public and Environmental Affairs); Steven Webster (Political Science)

#### Senior Scientist Emeritus

John M. Kennedy (Center for Survey Research)

#### Distinguished Professor Emeritus

Scott Long\* (Sociology, Statistics)

## Social Science Research Methods

### College of Arts and Sciences

Departmental E-mail: [pmcmanus@indiana.edu](mailto:pmcmanus@indiana.edu)

Departmental URL: [www.indiana.edu/~soc/](http://www.indiana.edu/~soc/)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Ph.D. Minor in Social Science Research Methods (SSRM)

##### Description

The multidisciplinary, cross-school SSRM minor draws on faculty from the College of Arts and Sciences, the School of Education, the School of Public and Environmental Affairs and other IUB units to provide students the opportunity to pursue a broad-based and comprehensive training program in social science research methods. The minor is open to Ph.D. students at Indiana University (IUB and IUPUI campuses). The program emphasizes advanced training in qualitative and quantitative methods for the analysis of social science data. Course offerings span diverse perspectives on data collection and analysis strategies. The course of study must include at least one course outside of the major field, and all coursework for the minor is in addition to any courses required for the major field. As a result, the minor in *Social Science Research Methods* is especially useful to those interested in moving beyond the required methodological coursework



of their disciplinary specialization to acquire a multifaceted view of approaches to social science phenomena.

### Course Requirements

Four courses for a minimum of twelve (12) hours of credit in courses approved for the Social Science Research Methods program, including at least one course outside the major field of study. A minimum of one course must be from area A (Methods of Qualitative Data Analysis) and a minimum of one course must come from area B (Methods of Quantitative Data Analysis). No more than six (6) credits can be transferred in from another institution. Courses taken to fulfill the requirements for the major field of study cannot also be counted towards the minor in Social Science Research Methods. Students must officially declare the minor during the early phase on their Ph.D. studies by consulting with the major advisor and the director of the minor. Courses outside the currently approved list may be considered for the minor in consultation with the director. The director of the minor retains formal authority for approving each minor student's course plan.

### Grades

A minimum grade of B (3.0) is required in all courses that count towards the minor.

### Courses

#### Group A (Qualitative Research Methods)

#### Foundational Courses in Qualitative Research Methods (Group A)

Note: no more than one foundational course from Group A can count towards the minor

#### African-American and African Diaspora Studies:

AAAD-A 709 Qualitative and Ethnographic Methods in AAADS (4 cr.)

#### Anthropology:

ANTH-E 508 Ethnographic Method in Performance (3 cr.)

#### Criminal Justice:

CJUS-P 680 Seminar: Issues in Criminal Justice (3 cr.)  
Topic: Qualitative Methods

#### Education:

EDUC-Y 611 Qualitative Inquiry in Education (3 cr.)

#### Geography:

GEOG-G 576 Qualitative Methods in Geography (3 cr.)

#### Media School:

MSCH-J 651 Qualitative Research Methods (3 cr.)

#### Media School:

MSCH-J 651 Qualitative Research Methods (3 cr.)

#### Political Science:

POLS-Y 579 Qualitative Methods in Political Research (3 cr.)

#### Public and Environmental Affairs:

SPEA-V 710 Topics in Public Policy (3 cr.) Topic: Qualitative Research Methods

#### Public Health:

SPH-F 650 Seminar: Human Development & Family Studies (3 cr.) Topic: Interpretive Qualitative Research Methods

SPH-X 580 Introduction to Qualitative Inquiry in Public Health Research (3 cr.)

#### Topical and Advanced Qualitative Methods (Group A)

#### Anthropology:

ANTH- A 525 Community-Based Participatory Research I

ANTH-A 526 Community-Based Participatory Research II

ANTH-E 600 Seminar in Cultural and Social Anthropology (3 cr.) Topic: Ethnographic Video Methods

ANTH-E 606 Ethnographic Methods (3 cr.)

ANTH-E 661 Seminar in Ethnomusicology I (3 cr.)

ANTH-L 600 Seminar in Ethnography of Communication (3 cr.) Topic: Discourse Analysis

#### Education:

EDUC-Y 612 Critical Qualitative Inquiry I (3 cr.)

EDUC-Y 613 Critical Qualitative Inquiry II (3 cr.)

EDUC-Y 615 Introduction to Discourse Theory and Analysis (3 cr.)

EDUC-Y 624 Discursive Psychology Approaches to Discourse Analysis (3 cr.)

EDUC-Y 630 Narrative Theory and Inquiry (3 cr.)

EDUC-Y 631 Discourse Theory and Analysis (3 cr.)

EDUC-Y 650 Topical Seminar in Educational Inquiry (3 cr.) Topics: Mixed Methodology; Digital Tools for Qualitative Inquiry; Life Story Methodology

EDUC-P 674 Advanced Topical Seminar in Learning Sciences (3 cr.) Topic: Issues and Applications in Qualitative Coding

EDUC-Y 750 Seminar in Inquiry Methodology (3 cr.)  
Topics: Advanced Ethnographic Methods; Advanced Qualitative Research; The Meaning of Mixed Methods

#### Folklore and Ethnomusicology:

FOLK-F 528 Advanced Fieldwork (3 cr.)

#### Geography:

GEOG-G 538 Geographic Information Systems (3 cr.)

GEOG-G 539 Advanced Geographic Information Systems (3 cr.)

#### Information and Library Science:

ILS-Z 641 Computer-Mediated Discourse Analysis (3 cr.)

ILS-Z 642 Content Analysis for the Web (3 cr.)

#### Media:

MSCH-T 510 Research Methods in Message Analysis (3 cr.)

### **Second Language Studies:**

SLST-S 640 Discourse Analysis (3 cr.)

### **Sociology:**

SOC-S 652 Topics in Qualitative Methods (3 cr.) Topics: Archival Methods; Ethnography; In-Depth Interviewing

### **Group B (Quantitative Research Methods)**

### **Foundational Courses in Quantitative Research Methods (Group B)**

Note: no more than one foundational course from Group B can count towards the minor, and no Group B foundational course will count towards the minor if the doctoral major includes two graduate courses in statistics or quantitative data analysis.

### **Anthropology:**

ANTH-A 506 Anthropological Statistics (3 cr.)

### **Business:**

BUS-G 651 Econometric Methods in Business I

### **Economics:**

ECON-E 571 Econometrics I - Statistical Foundations (3 cr.)

ECON-E 572 Econometrics II – Regression and Time Series (3 cr.)

ECON-E 504 Econometrics I (4 cr.)

### **Education:**

EDUC-Y 603 Statistical Design in Education Research (3 cr.)

EDUC-Y 604 Multivariate Analysis in Education Research (3 cr.)

### **Geography:**

GEOG-G 577 Topics in Climatology (3 cr.) Topic: Computing in Geospatial Sciences

GEOG-G 588 Applied Spatial Statistics (3 cr.)

### **Media:**

MSCH-J 502 Data Analysis for Journalists (3 cr.)

MSCH-J 600 Quantitative Research Methods (3cr.)

MSCH-T 602 Topical Seminar in Telecommunications Processes and Effects (3 cr.) Topic: Introduction to Statistics in Media Research

### **Political Science:**

POLS-Y 575 Political Data Analysis I (3 cr.)

POLS-Y 576 Political Data Analysis II (3 cr.)

### **Psychological and Brain Sciences:**

PSY-P 553 Advanced Statistics in Psychology I (3 cr.)

PSY-P 554 Advanced Statistics in Psychology II (3 cr.)

### **Public and Environmental Affairs**

SPEA-V 706 Statistics for Research in Public Affairs I (3 cr.)

SPEA-V 707 Statistics for Research in Public Affairs II (3 cr.)

### **Public Health:**

SPH-Q 602 Multivariate Statistical Analysis (3 cr.)

SPH-Q 603 Categorical Data Analysis (3 cr.)

### **Sociology:**

SOC-S 554 Stat Techniques in Sociology I (3 cr.)

SOC-S 650 Stat Techniques in Sociology II (3 cr.)

### **Statistics:**

STAT-S 501 Statistical Methods I (3 cr.)

STAT-S 503 Statistical Methods II (3 cr.)

STAT-S 520 Introduction to Statistics (3 cr.)

### **Topical and Advanced Quantitative Methods (Group B)**

### **Business:**

BUS-G 652 Econometric Methods in Business II

BUS-G 750 Economic Modeling

### **Cognitive Science:**

COGS-Q 560 Experimental Methods in Cognitive Science (3 cr.)

### **Computer Science:**

CSCI-B 555 Machine Learning (3 cr.)

CSCI-B 565 Data Mining (3 cr.)

CSCI-P 556 Applied Machine Learning (3 cr.)

### **Economics:**

ECON-E 626 Game Theory (3 cr.)

ECON-E 627 Experimental Economics (3 cr.)

ECON-E 671 Econometrics 3 – Nonlinear and Simultaneous Models (3 cr.)

ECON-E 672 Macroeconometrics (3 cr.)

ECON-E 673 Microeconometrics (3 cr.)

ECON-E 724 Seminar in Economic Theory (3-6 cr.) Topic: Bayesian Methods; Experimental Economics; Finance Econometrics; Network Formation Games; Time Series Topics

### **Education:**

EDUC-Y 525 Survey Research Methodology (3 cr.)

EDUC-Y 535 Evaluation Models & Techniques (3 cr.)

EDUC-Y 617 Psychometric Theory (3 cr.)

EDUC-Y 637 Categorical Data Analysis (3 cr.)

EDUC-Y 639 Multilevel Modeling (3 cr.)

EDUC-Y 645 Covariance Structure Analysis (3 cr.)

EDUC-Y 655 Longitudinal Data Analysis (3 cr.)

### Geography:

GEOG-G 504 Advanced Quantitative Methods in Geography (3 cr.)

GEOG-G 513 Advanced Economic Geography (3 cr.)

GEOG-G 589 Advanced Geospatial Data Analysis (3 cr.)

### Information and Library Science:

ILS-Z 639 Social Media Mining (3 cr.)

### Political Science:

POLS-Y 577 Advanced Topics in Political Data Analysis (3 cr.) Topic: Contextual Political Analysis; Dynamic Analysis; Time Series Analysis; Experimental Research Design and Methods; Maximum Likelihood Estimation.

### Psychological and Brain Sciences:

PSY-P 533 Introduction to Bayesian Data Analysis I (3 cr.)

PSY-P 534 Introduction to Bayesian Data Analysis II (3 cr.)

PSY-P 536 Theory of Tests and Measurements (3 cr.)

PSY-P 557 Representation of Structure in Psychological Data (3 cr.)

PSY-P 648 Choice Behavior (3 cr.)

PSY-P 654 Multivariate Analysis (3 cr.)

PSY-P 657 Topical Seminar (3 cr.) Topic: Time Series; Categorical Data Analysis

### Public and Environmental Affairs:

SPEA-P 562 Public Program Evaluation (3 cr.)

SPEA-V 710 Topics in Public Policy (3 cr.) Topic: Survey Research

### Public Health:

SPH-Q 601 Experimental Analysis & Design (3 cr.)

SPH-Q 605 Statistical Analysis of Multi-Level and Longitudinal Data Analysis (3 cr.)

SPH-Q 612 Survival Analysis (3 cr.)

SPH-Q 650 Special Topics in Biostatistics (3 cr.) Topic: Semiparametric Regression with R

### Sociology:

SOC-G 591 Methods of Population Analysis (3 cr.)

SOC-S 655 Experimental Methods in Sociology (3 cr.)

SOC-S 651 Topics in Quantitative Sociology (3 cr.) Topics: Causal Inference; Multilevel Models; Longitudinal and Panel Data Analysis; Multivariate Data Analysis; Social Network Analysis; Survey Research Methods

### Statistics:

STAT-S 625 Nonparametric Theory in Data Analysis (3 cr.)

STAT-S 631 Applied Linear Models I (3 cr.)

STAT-S 632 Applied Linear Models II (3 cr.)

STAT-S 637 Categorical Data Analysis (3 cr.)

STAT-S 639 Multilevel Models (3 cr.)

STAT-S 640 Multivariate Data Analysis (3 cr.)

STAT-S 645 Covariance Structure Analysis (3 cr.)

STAT-S 650 Time Series Analysis (3 cr.)

STAT-S 655 Longitudinal Data Analysis (3 cr.)

STAT-S 660 Sampling (3 cr.)

STAT-S 670 Exploratory Data Analysis (3 cr.)

STAT-S 676 Statistical Learning: Model Selection (3 cr.)

STAT-S 681 Topics in Applied Statistics (3 cr.) Topics: Spatial Statistics; Network Analysis; Statistical Methods for Causal Inference; Multivariate Methods II; Model Comparison and Selection

STAT-S 682 Topics in Mathematical Statistics (3 cr.) Topic: Statistical Model Selection

## Sociology

### College of Arts and Sciences

Departmental E-mail: [socadm@indiana.edu](mailto:socadm@indiana.edu)

Departmental URL: <https://sociology.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Arts and Doctor of Philosophy

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

#### Master of Arts Degree

##### Admission Requirements

Fifteen credit hours in sociology with a 3.3 (B+) grade point average (may be waived for students with a strong undergraduate record in another field), a writing sample, and three letters of recommendation. For students submitting their application for Fall 2022, scores on the Graduate Record Examination General Test are optional.

##### Course Requirements

A total of 30 credit hours, including 9 credit hours of the Sociological Research Practicum (S566 and either S567 or S569), S554, and either S510 or S530. An introductory undergraduate statistics course, such as S371, is a prerequisite for S554.

##### Grades

Students must maintain a grade point average of at least 3.3 (B+) in all course work. No grade below B in sociology courses will be counted toward this degree.

### Essay

The essay requirement is fulfilled by enrollment and participation in S566 and either S567 or S569 and preparation of an acceptable research paper.

### Doctor of Philosophy Degree

#### Admission Requirements

Completion of the M.A. degree (or equivalent training) in sociology at a recognized institution with a grade point average of 3.3 (B+) or higher (students with a master's degree in a related field may be admitted, but may be required to remove deficiencies), a writing sample, and three letters of recommendation. For students submitting their application for Fall 2022, scores on the Graduate Record Examination General Test are optional.

#### Course Requirements

A total of 90 credit hours, consisting of no fewer than 60 credit hours of course work (including the 30 credit hours counting toward the M.A.) and up to 30 credit hours of dissertation research (S869). The required courses are those specified for the M.A. (including both S510 and S530), Proseminar (S500, S501, S502), S540, S558, S650 (or STAT S503), S700, one advanced methodology course, three 600-level courses, and two elective courses.

#### Grades

Students must maintain a grade point average of at least 3.3 (B+) in all course work. No grade below B in sociology courses will be counted toward this degree.

#### Outside Minor

Required (usually 9-15 credit hours); may be chosen from African American and African Diaspora Studies, African Studies, Anthropology, Business, Cultural Studies, East Asian Studies, Economics, Education, Gender Studies, Geography, History, History and Philosophy of Science, Human Sexuality, Latin American and Caribbean Studies, Latino Studies, Law, Political Science, Public Affairs, Religious Studies, Russian and East European Studies, Social Science Approaches to Health and Healing Systems, Social Science Research Methods, Statistics or European Studies. A field not listed may be chosen with approval of the director of graduate studies.

#### Qualifying Examinations

All doctoral students are expected to demonstrate proficiency in sociological methods either by achieving a GPA of 3.3 (B+) or above in the required statistics and methods course sequence (S554, S558, S650, one advanced methods course), or by passing a doctoral examination in methodology. In addition, students must pass a written qualifying exam in a research specialty of their choosing. This qualifying exam is to be completed by the start of the student's fourth year in the graduate program.

#### Dissertation Proposal

Students must pass an oral defense of their dissertation proposal.

### Final Examination

Oral defense of the dissertation.

### Ph.D. Minor in Sociology

Students from other departments or schools who wish to minor in sociology should consult with the director of graduate studies, who will ordinarily serve as the minor advisor. Students will be required to complete 12 credit hours of course work; these courses must be completed with a grade point average of at least 3.0 (B). No more than one course should be taken below the 500 level. These requirements may be modified in particular cases by the director of graduate studies.

### Faculty

#### Chairperson

Professor Patricia McManus\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Distinguished Professors

Scott Long\* (Emeritus), Bernice Pescosolido\*

#### Allen and Polly Grimshaw Professor

Eliza Pavalko\*, Arthur Alderson\*

#### Chancellor's Professor

Robert Robinson\* (Emeritus)

#### Rudy Professors

Clem Brooks\*, Thomas F. Gieryn\* (Emeritus), David Heise\* (Emeritus), Brian Powell\*, Pamela B. Walters\* (Emeritus)

#### Virginia L. Roberts Professor

Peggy Thoits\* (Emeritus)

#### Herman B. Wells Professor

Dina Okamoto\*

#### Professors

Jennifer Barber, Timothy Paul Hallett\*, Pamela Braboy Jackson\*, Jane McLeod\*, Patricia McManus\*, Ethan Michelson\*, Dina Okamoto\*, Brea Perry\*, Fabio Rojas\*,

#### Associate Professors

Keera Allendorf\*, Stephen Benard\*, Jessica Calarco, Youngjoo Cha\*, Andrew Halpern-Manners, Jennifer Lee\*, Anna Mueller

#### Assistant Professors

Koji Chavez, Elaine Hernandez, Hyeyoung Kwon, Byungkyu Lee, Michael Schultz

## Adjunct Professors

Matthew Baggetta (Public and Environmental Affairs); Daniel Clark (Regenstrief Institute); Brad Fulton (Public and Environmental Affairs); Kirsten Grønberg\* (Public and Environmental Affairs); Hilary Holbrow (East Asian Languages and Cultures); Matthew Houser (Sociology); John Kennedy (Sociology); Aziza Khazzoom (Near Eastern Languages and Cultures); Sylvia Martinez (Latino Studies); Christena Nippert-Eng (Informatics); Allison Youatt Schnable (Public and Environmental Affairs); Stanley Wasserman (Statistics and Psychology)

## Director of Graduate Studies

Professor Pamela Braboy Jackson\*, Ballantine Hall 766, socdgs@indiana.edu

## Courses

- **SOC-S 410 Topics in Social Organization (3 cr.)**Courses in the 400s listed here are open to graduate students with the prior approval of the director of graduate studies in sociology and the course instructor.
- **SOC-S 431 Topics in Social Psychology (3 cr.)**Courses in the 400s listed here are open to graduate students with the prior approval of the director of graduate studies in sociology and the course instructor.
- **SOC-S 450 Topics in Methods and Measurement (3 cr.)**Courses in the 400s listed here are open to graduate students with the prior approval of the director of graduate studies in sociology and the course instructor.
- **SOC-S 500 Pro-Seminar in Sociology (1 cr.)**S/F grading. Introduction to current sociological research interests and concerns through the work of departmental members. May be repeated for credit.
- **SOC-S 501 Sociology as a Vocation (1 cr.)**S/F grading. Students consider the contributions of sociology as a discipline and examine career paths of sociologists both within and outside of academia. The 1 credit course is required of all first-year graduate students.
- **SOC-S 502 Launching Your Academic Career (1 cr.)**In this course, students are introduced to basic issues that are essential for their professional development. Course time is divided between in-class discussions and exercises both in and outside of class. This one-credit course is required of all second-year students and is taken on a pass/fail basis.
- **SOC-S 506 Teaching of Undergraduate Sociology (3 cr.)**S/F grading. Required of all associate instructors.
- **SOC-S 510 Introduction to Social Organization (3 cr.)**P: One course in sociology. Concepts, perspectives, and theories relevant to the analysis of all social organizations or social systems. Emphasizes both dynamic processes and structural forms, including social roles and interaction, patterns of social ordering, effects of culture, and social systems analysis. Examines both classic and contemporary literature.
- **SOC-S 521 Sexual Diversity (3-9 cr.)**A sociological examination of the major social-psychological and behavioral aspects of human sexual diversity.
- **SOC-S 522 Constructing Sexuality (3 cr.)**
- **SOC-S 530 Introduction to Social Psychology (3-9 cr.)**P: One course in sociology. Examines the broad range of work in social psychology. Emphasis is placed on the relation between the classic and contemporary literature in the field.
- **SOC-S 540 Sociological Theory (3 cr.)**A rigorous examination of a representative set of theoretical products, with the objective of understanding the basic structure and meaning of each and simultaneously learning about the creation of theory.
- **SOC-S 554 Statistical Techniques in Sociology I (3 cr.)**P: S371 or consent of instructor. Statistical analysis of single and multiple equation models with continuous dependent variables. May include techniques such as bivariate and multivariate regression, recursive and nonrecursive structural equation models.
- **SOC-S 558 Advanced Research Techniques (3 cr.)**The logic of analysis, including development of research questions, relationships between theory and evidence, research design, sampling, data collection strategies, reliability and validity, measurement, analysis, and drawing conclusions. Also includes an overview of data collection techniques such as surveys, interviews, field methods, and the use of archival and secondary data.
- **SOC-S 566 Sociological Research Practicum I (1-3 cr.)**This course is eligible for a deferred grade. Participation in all aspects of a sociological research project, including conceptualization and design, data collection, analysis, and report writing. May be repeated for credit.
- **SOC-S 567 Sociological Research Practicum II (1-3 cr.)**This course is eligible for a deferred grade. Participation in all aspects of a sociological research project, including conceptualization and design, data collection, analysis, and report writing. May be repeated for credit.
- **SOC-S 569 M.A. Thesis (3 cr.)**This course is eligible for a deferred grade.
- **SOC-S 606 Sociological Issues in College Pedagogy (3 cr.)**Introduction to topics such as learning theory, learning and teaching styles, and cognitive development. Focuses on assessment and practice of teaching, challenges to higher education, ethics, and professional responsibility.
- **SOC-S 617 Social Stratification (3 cr.)**Nature of social stratification; comparison of caste, estate-class, and open-class systems; theories of stratification; characteristics of local and national stratification systems; comparative analysis of stratification systems in various parts of the world; social circulation; changes in stratification structure.
- **SOC-S 650 Statistical Techniques in Sociology II (3 cr.)**P: S554 or consent of instructor. Statistical analysis of models with noncontinuous dependent variables. May include techniques such as logit and probit analysis, log-linear models, censoring, and sample selection models.



- **SOC-S 651 Topics in Quantitative Sociology (3 cr.)**P: S554, S650. Statistical analysis in social research; selected topics.
- **SOC-S 652 Topics in Qualitative Methods (3 cr.)**Selected topics in qualitative data collection and analysis. Various topics that could be covered in a given semester include audiovisual recording in natural settings, comparative/cross-cultural methods, content analysis, ethnographic methods, historical sociology, and intensive interviews and case studies.
- **SOC-S 655 Experimental Methods in Sociology (3 cr.)**Analysis of laboratory experiments; problems in experimentation; practice in conducting experiments.
- **SOC-S 660 Advanced Topics (2-6 cr.)**Topics announced when course is to be offered.
- **SOC-S 700 Topical Seminar (3-12 cr.)**
- **SOC-S 706 Sociological Research in Higher Education (3 cr.)**
- **SOC-S 751 Sociological Methods II (3-6 cr.)**
- **SOC-S 864 Readings in Sociology (arr. cr.)**Individual assignments.
- **SOC-S 866 Research in Sociology (arr. cr.)**
- **SOC-S 869 Ph.D. Thesis (arr. cr.)**This course is eligible for a deferred grade.
- **SOC-G 591 Methods of Population Analysis and Their Applications (3 cr.)**A course in statistics. Techniques of measuring and analyzing population size and trends, fertility and mortality patterns, migration flows. Population estimates and projections. Major models of formal demography.
- **SOC-G 901 Advanced Graduate Research (6 cr.)**This course is eligible for a deferred grade. May be repeated three times for credit.

## Spanish and Portuguese

College of Arts and Sciences

**Departmental URL:** <http://www.indiana.edu/~spanport/>

**Departmental E-mail:** [gradhisp@indiana.edu](mailto:gradhisp@indiana.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use only those requirements contained in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Arts and Doctor of Philosophy (The Master of Arts for Teachers program is not currently accepting applications.)

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

#### Admission Requirements

1. Undergraduate major in Spanish or Portuguese or its equivalent (students without a Spanish major may be required to take preliminary courses);
2. Test of English as a Foreign Language (TOEFL)—for non-native English speakers only;

3. Three letters of recommendation;
4. Statement of purpose;
5. Official Transcripts;
6. Writing sample (M.A. and Ph.D. Hispanic Literatures, M.A. and Ph.D. Hispanic Linguistics, and M.A. and Ph.D. Portuguese applicants )

#### Master of Arts Degree

Admission to the M.A. program does not imply that once the degree is received the student may automatically begin work for the Ph.D.; the department will decide in each case.

The following requirements apply to all M.A. degrees.

#### Final Examination

A written examination, based on a reading list, and a one-hour oral examination. Both must be passed at least two weeks before the end of the semester in which the degree is to be granted. Students must demonstrate a good command of oral and written Spanish or Portuguese language on the examinations. There are separate reading lists for students of Hispanic Literatures, Portuguese, and Hispanic Linguistics. The M.A. examination is held the second Saturday in February and the first Saturday in November only for all programs.

#### Other Provisions

Students must serve one year (or longer at the discretion of the department) as associate instructors in the department. Students who have taught elsewhere may petition the faculty to have that experience fulfill this requirement.

#### Master of Arts Degree in Spanish Concentration in Hispanic Literatures

##### Course Requirements

A minimum of 30 credit hours of departmental courses numbered 500 or higher, at least four of which must be 500-level Spanish-language literature courses.

##### Language Requirement

Reading knowledge of an approved second foreign language. Proficiency is satisfied as outlined in the "Doctor of Philosophy, Language Requirement" section.

#### Concentration in Hispanic Linguistics

##### Course Requirements

A total of 30 credit hours of which at least 21 must be in Hispanic linguistics. Up to 9 credit hours may be taken in other departments related to the student's field of study.

##### Language Requirement

Reading knowledge of an approved second modern language. Proficiency is satisfied as outlined in the "Doctor of Philosophy, Language Requirement" section.

#### Master of Arts Degree in Portuguese Course Requirements

A minimum of 30 credit hours in graduate-level courses, at least 20 credit hours of which must be in departmental courses in Portuguese. A thesis (1-6 credits) is optional.

With the approval of their advisor, students may take up to 10 credit hours of course work in a minor field.

### Language Requirement

Reading knowledge of an approved second foreign language. Proficiency is satisfied as outlined in the "Doctor of Philosophy, Language Requirement" section.

### Doctor of Philosophy Degree

Two degrees are offered. The following requirements apply to both. Students are eligible to apply to the Ph.D. programs upon successful completion of an M.A. degree in the intended area of study.

### Language/Research-Skill Requirement

Proficiency in multiple languages is an important tool for research. Therefore, students should consult with their advisors and the Director of Graduate Studies before determining which languages they will choose for proficiency. For all plans, students must have reading proficiency in two additional languages (or one in-depth proficiency) besides English and the language of the target program. These may be satisfied in the following ways (all coursework must be taught in the target language):

1. Proficiency for students within the Department of Spanish and Portuguese:
  - Spanish: completing with a grade of B (3.0) or better, S105, or the equivalent, and one course at the 500 level or higher (excluding S517);
  - Portuguese: completing, with a grade of B (3.0) or better, P135, or the equivalent, and one course at the 500 level or higher;
  - Catalan: completing, with a grade of B (3.0) or better, two courses at the 400 level or higher;
  - In-depth language proficiency: The student must first establish proficiency in the language by one of the methods listed above (a-c). Then the student must pass, with a grade of B or better, another course at the 500 level or higher.
2. Proficiency for students outside the Department of Spanish and Portuguese: The Department of Spanish and Portuguese accepts language proficiency by any of the following methods, provided that these also fulfill the target language department's proficiency requirements (all coursework must be taught in the target language):
  - For Spanish, passing a language proficiency examination;
  - For Spanish, passing an S300-level, or higher, literature, linguistics or culture course with a grade of B (3.0) or better; For Portuguese, passing a P300-level or higher course with a grade of B (3.0) or better; For Catalan, passing a C400-level, or higher, course with a grade of B (3.0) or better; coursework must be taught in target language;
  - For Spanish or Portuguese, passing the second half of a 400-level reading course (492) with a grade of B (3.0) or better.
3. In-depth language proficiency: The student must first establish proficiency in the language by one of the methods listed above (a-c). Then the student

must pass, with a grade of B (3.0) or better, another course at the 500 level or higher. The course must be taught in the target language. **S803, Individual Readings**, may not be counted towards language proficiency.

4. Ph.D. students in linguistics may replace reading proficiency in one foreign language with two courses, chosen in consultation with the Director of Hispanic Linguistics, in statistics or computer science.

Neither English nor the language of the degree program may be presented as one of the foreign languages.

### Qualifying Examination

See individual program outlines for qualifying exam requirements. For additional details about examinations, contact the Director of Graduate Studies.

### Final Examination

Oral, primarily a defense of the dissertation.

### Other Provisions

Competence in speaking Spanish or Portuguese fluently and with correct diction is expected of every student; hence, foreign residence in a Spanish- or Portuguese-speaking country prior to receiving the Ph.D. is highly desirable. Students must serve one year (longer at discretion of the department) as associate instructors in the department. Students who have taught elsewhere may petition the faculty to have that experience accepted as fulfilling this requirement.

### Doctor of Philosophy Degree in Spanish Concentration in Hispanic Literatures

#### Course Requirements

A total of 90 credit hours, including at least 18 credit hours (six courses) in departmental Spanish-language literature courses beyond the M.A.; S512 and S517 do not count as literature courses, but S504 may be counted as one of the six; one of these courses must be an S708 seminar. In addition, students must take S512 or its equivalent. Students must also satisfy course requirements for a Ph.D. minor (at least 12 credit hours). Students must have at least 60 total credit hours in course work before being eligible to take the qualifying examination. (A maximum of 30 credit hours may be transferred from the M.A.) The remaining credit hours can be taken as thesis hours. Ph.D. students in Hispanic Literatures may not take 400-level courses in Spanish.

#### Minor

Twelve credit hours or more in a related field. Some recommended fields: American Studies, Catalan, Cognitive Studies, Comparative Literature, Critical Theory, Cultural Studies, European Studies, Folklore and Ethnomusicology, Gender Studies, History, Latin American and Caribbean Studies, Portuguese. Ph.D. students in Hispanic Literatures who wish to minor in Portuguese or Catalan must take three graduate courses in literature beyond the foreign-language proficiency requirement.

### Qualifying Examination

The PhD qualifying examination for Hispanic Literatures will take place during the course of one semester and will

commence at the beginning of a fall or spring semester. The PhD exam will consist of the following components: (1) a pre-prospectus and three separate lists of primary, secondary, and theoretical works; (2) three take-home essays related to the student's lists of primary, secondary, and theoretical works; (3) an oral defense of the pre-prospectus and essays; (4) a dissertation prospectus; (5) an oral exam of the dissertation prospectus. For details about examinations, contact the Director of Hispanic Literatures.

### **Concentration in Hispanic Linguistics**

#### **Course Requirements**

The degree consists of 90 credit hours. Course work consists of at least 63 credit hours (of which up to 30 hours in Hispanic Linguistics may be applied from the M.A.): (i) 12 credit hours in Hispanic Linguistics (9 hours at the 600-level, 3 hours at the 700-level. NOTE: These four courses must be drawn from at least three of the five M.A. examination areas of study and must be taken in residence. These 12 credit hours can be used to fulfill distribution requirements in the 3 areas of concentration chosen by the student); (ii) 12 credit hours in the student's research area; (iii) 12 credit hours in a second area of interest; (iv) 9 credit hours in a third area of interest; (v) a minimum of 15 hours of thesis credit (HISP S-805). These distribution requirements fulfill the Ph.D. minor of at least 12 credit hours in another department. The student will finish his/her coursework in a maximum of 7 semesters.

#### **Qualifying Examination**

The qualifying examination for Hispanic Linguistics consists of four parts: a written take-home exam for each of the three areas of concentration and a one-hour oral exam following successful completion of all written portions of the exam. The take-home exams are each one week in length and are taken sequentially; each exam requires a maximum of 30 double-spaced type-written pages in 12-point Times New Roman with one-inch margins. This page limit excludes tables and figures, even when located throughout the text, as well as references and appendices should they be necessary. The number of questions and their format will be at the discretion of the examiner(s). All portions of the exam must be completed in the same semester. The qualifying examination may be repeated only once.

### **Doctor of Philosophy Degree in Portuguese Course Requirements**

A total of 90 credit hours (a maximum of 30 credit hours may be transferred from the M.A.). Work in the major, secondary, and minor fields must total 63 credit hours in courses and seminars in addition to completion of a doctoral dissertation. Students' programs are individualized and depend on the approval of the graduate faculty in Portuguese.

#### **Minor**

Twelve credit hours or more in a related field.

#### **Qualifying Examination**

The qualifying examination is both written and oral. Students concentrating in Portuguese will also be examined in Hispanic Literatures, or another approved

secondary area of interest. The written examination is 12 hours. A written or oral examination may also be required in the minor field, at the discretion of the minor department. The qualifying examination may be repeated only once.

### **Outside Minor Requirements**

#### **Ph.D. Minor in Catalan**

Doctoral students may earn a minor in Catalan by successfully completing no fewer than 4 Catalan literature courses plus the language course (C491 or C492) for a total of 12 graduate credit hours. The language course can be at the 400 level, but all literature courses must be at the 500 level or above. (The language proficiency requirement for students in our department would stipulate 2 courses in Catalan, one at the 400 level and one at the 500 level or above, so that students could use the 500 level course towards the 4 courses for the minor in Catalan; students from other departments would choose C491 + C492 for their language proficiency requirements.) The literature courses for the minor may also include one course in Hispanic Literatures with at least 30% content of Catalan literature. Such courses must be approved by the Director of Graduate Studies. Courses may include:

- C491 Elementary Catalan for Graduate Students;
- C492 Readings in Catalan for Graduate Students;
- C550 Modern Catalan Literature;
- C618 Topics in Catalan Literature (Nationalism and Literature in Modern Catalonia);
- C619 Topics in Catalan Studies (The Making of Barcelona: Architecture in Modern Catalonia; Catalan Film and Literary Production);
- S648 Topics in Spanish Literature of the 20th and 21st Centuries (provided (a) that this section of the course includes at least 30% content of Catalan literature and (b) that the final paper be on Catalan literature);
- C803 Individual Reading in Catalan Literature and Language;
- Any Spanish Literature course at the 500 level or above, provided (a) that the reading list includes at least 30% content of Catalan literature and (b) that the final paper be on Catalan literature.

#### **Ph.D. Minor in Hispanic Literatures**

Doctoral students from other departments may complete a minor in Spanish by successfully completing no fewer than four Spanish-language literature courses (12 credit hours). All courses must be at least at the 500 level and approved by the Director of Graduate Studies. **S803 Individual Readings** may not be counted toward the minor.

#### **Ph.D. Minor in Hispanic Linguistics**

Doctoral students may complete a minor in Hispanic linguistics by successfully completing no fewer than four courses in Hispanic linguistics (12 credit hours). All courses must be at least at the 500 level and approved by the Director of Hispanic linguistics. Transfer credits for courses taken elsewhere are not accepted. **S803 Individual Readings** may not be counted toward the minor.

#### **Ph.D. Minor in Portuguese**

Doctoral students from other departments may complete a minor in Portuguese by successfully completing no fewer

than four Portuguese courses (12 credit hours) listed in the University Graduate School Bulletin as carrying credit toward the Ph.D. **P803 Individual Readings** may not be counted toward the minor.

## Faculty

### Chairperson

Professor Manuel Díaz-Campos\*

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Luis Beltrán\* (Emeritus), Anke Birkenmaier\* J. Clancy Clements\* (Emeritus), Deborah Cohn\*, Manuel Antonio Díaz-Campos\*, Patrick Dove\*, César Félix-Brasdefer\*, Kimberly Geeslin\*, Ryan Giles\*, Olga T. Impey\* (Emerita), Catherine Larson\* (Emerita), Consuelo López-Morillas\* (Emerita), Heitor Martins\* (Emeritus), Kathleen Myers\*, Darlene J. Sadlier\* (Emerita), Reyes Vila-Belda\*, Steven Wagschal\*

### Associate Professors

Patricia Amaral\*, Mary L. Clayton\* (Emerita), Melissa Dinverno\*, Ricardo Andrés Guzmán\*, Laura Gurzynski-Weiss\*, Edgar Illas\*, Alejandro Mejías-López\*, Luciana Namorato\*, Jonathan Risner\*, Estela Vieira\*, Erik Willis\*

### Assistant Professors

Olimpia Rosenthal\*, Rhi Johnson

### Director of Graduate Studies

Professor Kathleen Myers\*

## Courses

### Catalan

- **HISP-C 550 Catalan Literature (3 cr.)** Survey of Catalan literature from the Middle Ages to the present. Significant works in all genres will be studied within their historical and cultural context. Issues of nation formation, hegemony, biculturalism, and marginalization will be paid special attention.
- **HISP-C 613 Catalan Linguistics (3 cr.)** P: C400. Study of contemporary Catalan language and its history. Deals with phonology, grammar, and lexicology.
- **HISP-C 618 Topics in Catalan Literature (3 cr.)** Topics include medieval narrative, Valencian literature, the Renaixença, Modernisme and Noucentisme, the avant-garde, poetry and resistance, utopias and dystopias, specific writers (Rodoreda, Capmany, Roig, Riera, Barbal), theatre and the Barcelona stage. Topics to be explored in a multicultural context and in view of current critical issues and theory. Courses may be repeated once for credit when topic varies.
- **HISP-C 619 Topics in Catalan Studies (3 cr.)** Study of problems, issues, and topics in Catalan

Studies, which may include Catalan nationalism, politics, culture, architecture, cinema, art, and/or society.

- **HISP-C 803 Individual Reading in Catalan Literature or Language (1-3 cr.)** Students must make arrangements in advance with the professor who will supervise their readings. Please contact the department graduate office for further information.

## Spanish

### Spanish American Literature

- **HISP-S 504 Bibliography and Methods of Research (3 cr.)**
- **HISP-S 512 Theory and Criticism (3 cr.)** Focuses on major issues in literary theory, with attention given to critical trends in the Hispanic world.
- **HISP-S 518 Spanish Medieval Literature (3 cr.)** Survey of literature from its beginnings to 1500. The main focus will be on major works studied within their historical and cultural contexts, within the literary genres to which they belonged, and within the traditions they renewed. All texts will be read in the original language.
- **HISP-S 528 Spanish Literature of the Sixteenth and Seventeenth Centuries (3 cr.)** Survey of the prose, poetry, and theatre of the Spanish Golden Age. Authors may include Garcilaso, the mystic writers, Cervantes, Lope de Vega, Calderón, Zayas, Góngora, and Quevedo. Examines the dynamics of power, gender, and genre in representative texts.
- **HISP-S 538 Spanish Literature of the Eighteenth and Nineteenth Centuries (3 cr.)** Focuses on the major works of the period of all genres (poetry, fiction, drama, essay) and covers the main intellectual trends: Enlightenment, Romanticism, Realism, and Naturalism. Traces issues such as emerging genres, class and power, gender and sexuality, and nation formation.
- **HISP-S 548 Spanish Literature of the Twentieth and Twenty-First Centuries (3 cr.)** Survey of literature from the beginning of the twentieth century to the present. May include a variety of genres (e.g., narrative, poetry, drama, and film) and examine a range of issues (e.g., power, gender, nation, and exile).
- **HISP-S 558 Colonial Spanish American Literature (3 cr.)** Surveys the central literary-historical movements and texts in Spanish America from 1492 to 1820. Includes a study of the chronicles, mid-colonial poetic and autobiographical forms, and pre-independence literature.
- **HISP-S 568 Nineteenth- and Early Twentieth-Century Spanish American Literature (3 cr.)** Survey of the nineteenth- and early twentieth-century drama, essay, prose, and poetry. Emphasizes the introduction of Romanticism, literature gauchesca, positivism, modernismo, Realism, and Naturalism. Primary readings may include, among others, Bolívar, Bello, Heredia, Avellaneda, Sarmiento,



Echeverría, Isaacs, Hernández, Palma, Darío, Quiroga, and F. Sánchez.

- **HISP-S 578 Twentieth- and Twenty-First-Century Spanish American Literature (3 cr.)** Survey of Spanish American poetry, prose, and theatre of the twentieth and twenty-first centuries. Examines movements such as *vanguardia*, the “new narrative,” the Boom and post-1970s narrative trends.
  - **HISP-S 588 U.S. Latino and/or Caribbean Literature (3 cr.)** Survey of Chicano, Continental Puerto Rican, Cuban-American, and other U.S. Latino literature written in Spanish, English, or both. Emphasis on the Hispanic literary, linguistic, and cultural dialectic with English-speaking society. The course will be conducted in Spanish.
  - **HISP-S 618 Topics in Spanish Medieval Literature (3 cr.)** Investigation of fundamental components of Spanish medieval literature and culture in conjunction with current scholarship and critical approaches. Topics may include lyric poetry, *mester de juglaría*, *mester de clerecía*, *romancero*, didactic and historical prose, fiction, drama, paleography, translation, and cultural issues of medieval Spain and Al-Andalus. Course may be repeated for credit when topic varies.
  - **HISP-S 628 Topics in Early Modern Spanish Literature (3 cr.)** Topics may explore questions of genre (the picaresque, the *comedia*), major works (*Don Quijote*), authors (Góngora, María de Zayas), themes (madness, seduction), or theoretical approaches (the investigation of power, historiographical accounts). Course may be repeated for credit when topic varies.
  - **HISP-S 638 Topics in Eighteenth- and Nineteenth-Century Spanish Literature (3 cr.)** Topics may include the Enlightenment, Romantic drama, Romantic poetry, realist and naturalist prose, an author (e.g., Galdós, Pardo Bazán, Bécquer), the development of a genre (e.g., the short story, the modern novel). Topics will be explored in the context of current critical issues and theories. Course may be repeated for credit when topic varies.
  - **HISP-S 648 Topics in Contemporary Spanish Literature (3 cr.)** The literature and culture of Spain from the twentieth century to the present. Topics may include the Spanish essay, Generation X, death and violence, writing memory, urban/rural landscapes and the ecocritical debate, and constructions of the body. Course may be repeated for credit when topic varies.
  - **HISP-S 659 Topics in Colonial Spanish American Literature (3 cr.)** Topics may include the chronicles and early modern theories of representation, indigenous writing and identities, *el barroco de indias* in poetic and prose genres, life writings (*vidas*) and gender, and paleographic study of archival texts. Course may be repeated for credit when topic varies.
  - **HISP-S 668 Topics in Nineteenth- and Early Twentieth-Century Spanish American Literature (3 cr.)** Topics may include literature of independence, *gauchesca* poetry and tradition, representations of nature, Romanticism and late Romanticism, modernity and modernismo, nationalism, the *novella de la tierna*, race ethnicity, and gender.
  - **HISP-S 678 Topics in Contemporary Spanish American Literature (3 cr.)** The literature and culture of Spanish America from the beginning of the twentieth century to the present. Topics may include the Boom, magic realism, modernity, revolution and politics, gender and sexualities, race, and ethnicity. Course may be repeated for credit when topic varies.
  - **HISP-S 688 Topics in U.S. Latino and/or Caribbean Literature (3 cr.)** Study of problems, research trends, and topics in U.S. Latino and/or Caribbean poetry, prose, drama, and essay. Topics may include border studies, identity formation, post-colonial theory, issues of exile and diaspora. The course will be conducted in Spanish. Course may be repeated for credit when topic varies.
  - **HISP-S 695 Graduate Colloquium (3 cr.)** Selected topics on Spanish or Spanish American literature. Course may be repeated for credit when topic varies.
  - **HISP-S 708 Seminar in Hispanic Studies (3 cr.)** May be repeated for credit when topic varies.
  - **HISP-S 803 Individual Readings in Spanish or Spanish American Literature and Language (arr. cr.)** P: M.A. degree. Students must make arrangements in advance with the professor who will supervise their readings. Contact the departmental graduate office for further information.
- Hispanic Linguistics**
- **HISP-G 611 Romance Linguistics (3 cr.)** Course not currently offered.
  - **HISP-S 508 Introduction to Hispanic Pragmatics (3 cr.)** Examines the intentions of language users and how discourse is interpreted by hearers. After introducing fundamental concepts in pragmatics, the course analyzes how pragmatics relates to syntax and semantics. Topics include: speech acts, deixis, presupposition, implicature, politeness, and conversation analysis. Examples are taken from different varieties of Spanish.
  - **HISP-S 509 Spanish Phonology (3 cr.)** Introduction to the sound system of Spanish. Various theories are presented and analyzed. Some treatment of dialectal phenomena included.
  - **HISP-S 511 Spanish Syntactic Analysis (3 cr.)** Introduction to the analysis of syntactic data. Focus on developing theoretical apparatus required to account for a range of syntactic phenomena in Spanish.
  - **HISP-S 513 Introduction to Hispanic Sociolinguistics (3 cr.)** Examines the relationship between language and society in the Spanish-speaking world. Surveys a wide range of topics relevant to Spanish: language as communication, the sociology of language, and linguistic variation.



- **HISP-S 515 The Acquisition of Spanish as a Second Language (3 cr.)** Surveys the empirical research conducted on Spanish and investigates how a nonnative linguistic system develops. Course includes four topics: morpheme acquisition studies, interlanguage development, input processing, and Universal Grammar.
- **HISP-S 517 Methods of Teaching College Spanish (3 cr.)** Trains graduate students to teach the freshman and intermediate college courses in Spanish
- **HISP-S 603 History of the Spanish Language (3 cr.)** P: Fulfillment of Latin requirement. Course not currently offered. The rise and development of Spanish in the Iberian peninsula and Latin America, seen in historical and cultural contexts. The history of sounds, forms, and words; major dialects; the evolution of prose style to the eighteenth century.
- **HISP-S 609 Spanish Phonology II (3 cr.)** P: S509 or equivalent. Introduces recent developments in phonological theory and their application to Spanish, as well as non-derivational approaches. Focuses mainly on nonlinear analyses.
- **HISP-S 611 Topics in Spanish Syntax (3 cr.)** P: S511 or equivalent. Advanced study of modern approaches to synchronic and diachronic syntax as applied to Spanish. Focus on current theories of the interface between syntax, semantics and pragmatics, and refinement of syntactic analysis and argumentation. Course may be repeated for credit when the topic varies.
- **HISP-S 612 Topics in Linguistic Variation and Language in Context (3 cr.)** Examines current topics in linguistic variation and language in context in-depth, with a particular focus on issues relating to the Spanish language. Topics include: sociolinguistic and phonological variation, networks and communities of practice, the quantitative paradigm, conversation analysis, linguistic politeness, speech act theory, discourse markers, and research methodology.
- **HISP-S 614 Topics in Acquisition of Spanish (3 cr.)** P: S515 or equivalent. Provides closer examination of topics and research in first and/or second language acquisition, focusing specifically on the Spanish language. Topics include the acquisition of phonology, syntax, morphology, and semantics as well as input processing, psycholinguistics, and research design.
- **HISP-S 712 Seminar: Themes in Spanish Linguistics (3 cr.)** Course may be repeated for credit when the topic varies. Course may be repeated for credit when the topic varies.
- **HISP-S 716 Seminar: Themes in the Acquisition of Spanish as a Second Language (3 cr.)** Course may be repeated for credit when the topic varies.
- **HISP-S 803 Individual Readings in Spanish or Spanish American Literature and Language (arr. cr.)** P: M.A. degree.
- **HISP-P 500 Literatures of the Portuguese-Speaking World I (3 cr.)** Survey of the literatures from Brazil, Portugal, and Lusophone Africa. Lectures and discussions of selected authors of the major literary periods.
- **HISP-P 501 Literatures of the Portuguese-Speaking World II (3 cr.)** Survey of the literatures from Brazil, Portugal, and Lusophone Africa. Lectures and discussions of selected authors of the major literary periods.
- **HISP-P 505 Literature and Film in Portuguese (3 cr.)** Survey of literary works and film adaptations from the Lusophone world.
- **HISP-P 510 Brazilian Cinema (3 cr.)** A survey of Brazilian cinema from the beginning of the twentieth century to present day. Taught in English.
- **HISP-P 511 Portugal: The Cultural Context (3 cr.)** Integrates historical, social, political, and cultural information about Portugal. Taught in English.
- **HISP-P 512 Brazil: The Cultural Context (3 cr.)** Integrates historical, social, and cultural information about Brazil. Taught in English.
- **HISP-P 515 Woman Writing in Portuguese (3 cr.)** A survey of women's writings from different Portuguese-speaking nations.
- **HISP-P 520 Literatures of the Portuguese-Speaking World in Translation (3 cr.)** Readings of Brazilian, Portuguese, and Lusophone African writers from a comparative perspective. Specific topics may vary in any given semester. Taught in English. Cannot count toward graduate degrees with specialization in Portuguese.
- **HISP-P 525 Structure of Portuguese Language (3 cr.)** Introduction to the linguistic study of various aspects of the structure of the Portuguese language: phonetics, phonology, morphology, semantics, syntax, dialects, historical grammar; and application of linguistics to the study of literature.
- **HISP-P 567 Contemporary Portuguese Literature (3 cr.)** Representative authors and works from 1915 to the present.
- **HISP-P 570 Poetry in Portuguese (3 cr.)** A study of poetic genres in Portuguese; emphasis on major authors from Brazil, Portugal, and Lusophone Africa.
- **HISP-P 575 Theatre in Portuguese (3 cr.)** A survey of theatre in the Portuguese language from the sixteenth century to the late twentieth century. Particular attention will be given to the social and historical context in which works were produced.
- **HISP-P 576 Prose in Portuguese (3 cr.)** Survey of prose writers and works from the Middle Ages to the present.
- **HISP-P 581 Contemporary Brazilian Literature (3 cr.)** Representative authors and works from 1922 to the present.
- **HISP-P 601 Portuguese Historical Grammar (3 cr.)** History of the system of sounds and forms,

## Portuguese

of words and their meanings from Latin origins to contemporary standard Portuguese

- **HISP-P 605 Portuguese Linguistics (3 cr.)** A structural description of modern Portuguese to include phonetics and phonology and some of the main features of the morphological and syntactic systems.
- **HISP-P 655 Camões (3 cr.)**
- **HISP-P 676 Machado de Assis (3 cr.)**
- **HISP-P 695 Luso-Brazilian Colloquium (3 cr.)** Topics vary.
- **HISP-P 701 Seminar: Portuguese Literature (3 cr.)** In-depth study of selected topics.
- **HISP-P 710 Seminar: African Literature in Portuguese (3 cr.)** This course will introduce students to representative authors from Lusophone Africa. Discussions will focus on topics such as the relationship between oral culture and the written word, colonial and postcolonial attitudes toward race and social class, and gender issues. Primary readings include novels, poetry, and short fiction.
- **HISP-P 751 Seminar: Brazilian Literature (3 cr.)** In-depth study of selected topics.
- **HISP-P 803 Individual Reading in Portuguese or Brazilian Literature (3 cr.)** P: M.A. degree. Students must make arrangements in advance with the instructor who will supervise their readings. Please contact the department graduate office for further information.

#### Reading Knowledge

- **HISP-C 491 Elementary Catalan for Graduate Students (3 cr.) (3-no grad. cr.)**
- **HISP-P 491 Elementary Portuguese for Graduate Students (3 cr.) (3-no grad. cr.)**
- **HISP-S 491 Elementary Spanish for Graduate Students (3 cr.) (3-no grad. cr.)**
- **HISP-C 492 Readings in Catalan for Graduate Students (3 cr.) (3-no grad. cr.)**
- **HISP-P 492 Readings in Portuguese for Graduate Students (3 cr.) (3-no grad. cr.)**
- **HISP-S 492 Readings in Spanish for Graduate Students (3 cr.) (3-no grad. cr.)**

#### Thesis Hours

- **HISP-P 802 M.A. Thesis (arr. cr.)** This course is eligible for a deferred grade.
- **HISP-P 805 Ph.D. Thesis (1-12 cr.)** This course is eligible for a deferred grade.
- **HISP-S 802 M.A. Thesis (arr. cr.)** This course is eligible for a deferred grade.
- **HISP-S 805 Ph.D. Thesis (1-12 cr.)** This course is eligible for a deferred grade.
- **HISP-G 901 Advanced Research (6 cr.)** Auth.

## Speech, Language, and Hearing Sciences

**College of Arts and Sciences**

**Departmental E-mail:** [sphsdept@indiana.edu](mailto:sphsdept@indiana.edu)

**Departmental URL:** <https://slhs.indiana.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Introduction

The graduate curriculum in Speech, Language and Hearing Sciences combines training for students wishing to pursue clinical careers in speech-language pathology or audiology, as well as graduate studies in speech, language, and hearing sciences, speech-language pathology, and audiology for research or academic careers. The department is accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association.

#### Degrees Offered

Master of Arts in Speech, Language, and Hearing Sciences, Doctor of Philosophy in Speech, Language and Hearing Sciences, and Ph.D. degree plus clinical certification (Combined Ph.D. + Au.D and Ph.D. + Clinical training in SLP). (The College of Arts and Sciences offers the Doctor of Audiology degree.)

#### Special Departmental Requirements

##### Adequate Progress

Individual student progress will be evaluated annually by program faculty. Students who are judged to be making inadequate progress on the basis of poor grades, incomplete coursework, or insufficient research accomplishments may be placed on academic probation. Students on academic probation will be offered a timetable for remedial work and re-testing, and will have restricted access to coursework and clinical experiences. If deficiencies are not corrected according to the revised timetable, the student is likely to be dismissed from the program. (See also general University Graduate School requirements.)

### Master of Arts in Speech, Language, and Hearing Sciences

#### Course Requirements

The clinical M.A. degree requirements include 33 credit hours of required graduate academic coursework; 4-11 credit hours of electives, with no more than 6 credit hours in S780; 4 credit hours of clinical practicum (S561, S565, S566, S567); and two 6 credit off-campus externships (S568, M550) for a total of 53-60 credit hours.

The required academic coursework includes:

- S501 Neurological and Physiological Foundations of Speech-Language Pathology
- S520 Phonological Disorders
- S531 Cognitive-Communication Disorders in Brain Injury and Disease

- S532 Language Disorders in Children
- S537 Aphasia
- S540 Voice Disorders
- S544 Dysphagia
- S550 Stuttering
- S555 Motor Speech Disorders
- S561 Clinical Methods and Practices I
- S565 Clinical Methods and Practices II
- S566 Clinical Methods and Practices III
- S567 Clinical Methods and Practices IV
- S568 Medical Externship
- S580 Critical Thinking about Research in Communication Disorders
- M563 Methods in Speech and Hearing Therapy
- M550 Practicum: Speech and Hearing (school externship) or S568

The non-clinical M.A. degree is a minimum of 36 credit hours, with the specific course requirements to be determined by the Coordinator of the M.A. program in Speech, Language and Hearing Sciences in consultation with academic faculty.

Some of the above mentioned required courses may be taught as S515 and will thus substitute for said courses.

Students pursuing the bilingual track program (STEPS), will take an advanced seminar (S515: Spanish Language Acquisition and Disorders), in lieu of S532 – Language Disorders in Children.

### Practicum

Students wishing to receive clinical certification must enroll in clinical practicum (S561, S565, S566, S567, S568, M550) each semester, earning grades of B (3.0) or higher. Students who wish to earn the M.A. degree but do not choose to complete practicum requirements and clinical certification may complete a non-clinical M.A. degree.

### Au.D. Degree

The department also offers a professional doctorate in Audiology, the Au.D. This degree is conferred by the College of Arts and Sciences, not the University Graduate School. The Au.D. is currently a 3-year, 90-credit-hour degree. The curriculum and clinical requirements for this degree are described in more detail on the department's website: <https://sphs.indiana.edu/graduate/aud-degree/index.html>

### Combined Au.D./Ph.D degree

The department offers the opportunity for students to pursue a combined Au.D./Ph.D. degree. Students must complete all of the requirements for both degrees, but there is some overlap in degree requirements so that the total credit hours required may be less than the simple sum of 180 credits required for both degrees. A maximum of 30 credit hours obtained in the Au.D. program can be applied towards the 90 credit hours required for the Ph.D. Ultimately, the decision regarding which credits in the Au.D. program will count toward the Ph.D. will be made by the student's Ph.D. advisory committee. Because the 90 credit hours in the Au.D. program are all required, so as to comply with national clinical certification requirements, Ph.D. courses cannot be substituted for required Au.D. courses. It is recommended that Au.D. students wishing to pursue the combined Au.D./ Ph.D. degree declare this interest and be admitted into the Ph.D. program no later

than the end of the second academic year in the Au.D. program. Likewise, Ph.D. students wishing to pursue this combined degree should do so as soon as possible to facilitate planning, but must do so no later than the end of the second academic year in the Ph.D. program.

### Doctor of Philosophy Degree in Speech, Language and Hearing Sciences Course Requirements

At least 90 credit hours of graduate coursework with a grade of B (3.0) or above are required for the research PhD in Speech, Language and Hearing Sciences. This coursework must include S681, S682, S683, S685, S702, one seminar in Language Science (S674), one seminar in Speech Science (S674) one seminar in Hearing Science (S674) and courses required for an outside minor. In addition, students must complete at least 6 credit hours of graduate coursework in experimental design and statistics or demonstrate equivalent competency. No more than 12 credit hours of coursework in experimental design or statistics may count towards the required total of 90 credit hours for the degree. Additional required coursework may be determined by the student's Ph.D. advisory committee.

### Examinations

After completing the required coursework, students must pass a qualifying exam consisting of written questions and oral defense of the answers. Exam questions are tailored for each student by their Ph.D. advisory committee, which also evaluates student performance. Students who do not pass the qualifying exam will be placed on academic probation and given a second opportunity to take the exam. Students who do not pass after two attempts will be dismissed from the program.

### Research and Dissertation

Each student must complete three research projects: first-year (S681), second-year (S682), and dissertation research projects. The first and second year projects will be evaluated by the student's Ph.D. advisory committee after the student has presented the research in a departmental colloquium. The dissertation will be evaluated by the student's dissertation research committee.

### Ph.D. Degree with Clinical Training in Speech-Language Pathology

The department offers the opportunity for students to pursue a Ph.D. wherein they can complete requirements so that they are eligible to apply for American Speech-Language-Hearing Association certification in Speech-Language Pathology. To pursue this track, students must meet admission requirements for both the MA and PhD programs. Students must complete all of the requirements for both degrees, but this track of the PhD program is designed to offer students the educational opportunities to develop clinical and research competence within a more limited timeframe than might be required by independent enrollment in the MA and PhD programs separately. Because completing all course work, clinical, and research requirements in a timely manner will take careful planning, student ideally should declare their interest in clinical training when applying to the PhD program or at the latest, within their first year in the PhD program.

### **Ph.D. Double Major in Speech, Language and Hearing Sciences**

Students who are admitted into the double major Ph.D. program must complete the requirements for Speech, Language and Hearing Sciences and the other major department as specified in the University Graduate School Bulletin. The advisory committee must include at least two members from Speech, Language and Hearing Sciences and two faculty members from the second major field. Qualifying examination format will be determined by the advisory committee with input from both major fields of study. A minor concentration is optional, but if a minor is undertaken, there must be one additional advisory committee member to represent that discipline. At least 30 graduate credit hours must be completed in Speech, Language and Hearing Sciences or cross-listed courses for the double major.

### **Ph.D. Minor in Speech, Language and Hearing Sciences**

Students wishing to obtain a minor in Speech, Language and Hearing Sciences must have a faculty advisor from the department. Adjunct faculty must receive approval from SPHS faculty to serve as the advisor for the student's minor. The advisor will approve the student's program of coursework in the minor and will serve on the student's advisory committee, research committee, or both. The student is required to complete at least 12 credit hours of graduate coursework in the minor department with a grade of B or higher. A written qualifying examination is not required, but will be administered at the request of the major department.

### **Faculty**

#### **Chairperson**

Professor Jennifer Lentz\*

#### **Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### **Distinguished Professor**

Larry E. Humes\*

#### **Professors**

Raquel Anderson\*, Karen Forrest\*, Tessa Bent\*

#### **Clinical Professor**

Rebecca Eberle, Laura Karcher, Nancy Nelson

#### **Distinguished Emeritus Professor**

Larry E. Humes\*

#### **Emeritus Professors**

Jean Anderson\*, Moya L. Andrews\*, Phil Connell\*, Mary Elbert\*, Judith A. Gierut\*, Nicholas Hipskind\*, Diane Kewley-Port\*, Charles Watson\*

#### **Emeritus Scientist**

Gary Kidd

#### **Emeritus Clinical Faculty**

Amy Cornwell, Elizabeth McCrea, E. Gene Ritter

### **Associate Professors**

Julie D. Anderson\*, Steven Lulich\*, Rita Patel\*, Lisa Gershkoff-Stowe\*, William Shofner\*, Robert Withnell\*

### **Clinical Associate Professors**

Nathan Amos, Annette Champion, Lisa Goerner, Carolyn Garner, Joseph Murray, Erin Peabody, Amy Piper, Julia Rademacher

### **Assistant Professors**

Ishanti Gangopadhyay, Brielle Stark\*

### **Clinical Assistant Professors**

Emily Ansty, Elizabeth Buck, Hanna Messmer, Jennifer Whitley, Sara Rogers, Stephanie Wiczorek, Alison Winiger

### **Senior Lecturers**

Kristin Baar, Michele Morrisette, Daniel Smith

### **Clinical Senior Lecturers**

Deborah Gessinger, L. Jill Lestina, Rob Loveless,

### **Lecturers**

Heath Goodall, Scott Kochan

### **Academic Advising**

M.A. Program: Associate Professor Rita Patel\*, Speech, Language and Hearing Sciences C145, (812) 855-3886;

Ph.D. Program: Professor Tessa Bent\* Speech, Language and Hearing Sciences C191, (812) 856-3279.

Au.D. Program: Senior Lecturer Kristin Baar, Speech, Language and Hearing Sciences C148, (812) 855-3585.

### **Courses**

- **SPHS-S 680 Independent Study (1-6 cr.)**This course is eligible for a deferred grade.
- **SPHS-S 780 M.A. Thesis (1-6 cr.)**This course is eligible for a deferred grade.
- **SPHS-S 880 Ph.D. Thesis (1-6 cr.)**This course is eligible for a deferred grade.

### **American Sign Language**

- **SPHS-A 500 ASL Level One for Graduate Students (3 cr.)**Introductory sign language for graduate students with no previous experience. Builds a good basic vocabulary of signs, teaches fingerspelling, introduces basic aspects of grammar and the proper use of facial expression in sign language conversation. Students are also exposed to Deaf culture.
- **SPHS-A 550 ASL Level Two for Graduate Students (3 cr.)**P: A500 Continues building receptive and expressive abilities. Puts emphasis on the use of signing space, facial grammar, body postures, fluent fingerspelling, and continued vocabulary development. More complex grammatical structures are introduced. Deaf culture component included.
- **SPHS-A 600 ASL Level Three for Graduate Students (2 cr.)**P: A550 Emphasizes the development of conversational ability. Examines more complex grammatical structures, with



emphasis on ability to use these structures in conversation. Readings, videos, and discussion cover characteristics of the Deaf population and their cultural values.

- **SPHS-A 700 ASL Level Four for Graduate Students (2 cr.)**P: A600 Provides further study of ASL grammar, syntax, and cultural features. Develops competency and fluency in conversational skills. Utilizes vocabulary, grammatical principles and various discourse features in narratives and presentations in ASL.

### Speech, Language and Hearing Sciences

- **SPHS-S 501 Neurological and Physiological Foundations of Speech-Language Pathology (3 cr.)**This course will introduce students to the neuroanatomical and neurophysiological basis of human communication. Topics will include neuroanatomy and neurophysiology of the central and peripheral nervous systems; neural substrates of speech and language; respiratory, phonatory, articulatory, and swallowing physiology..
- **SPHS-S 505 Clinical Application of Linguistic Theory (4 cr.)** **Currently not being offered.** Application of models of language structure and use of the clinical process of diagnosis, evaluation, and treatment of phonological, lexical, morphological, and syntactic impairments of language acquisition.
- **SPHS-S 506 Counseling (2 cr.)** Provides information about the counseling purview of audiologists and speech pathologists. Topics such as theories of counseling, lifespan issues, emotional responses to communication disorders, family dynamics, support groups, and multicultural issues will be presented. Students will learn basic counseling techniques and the application of these techniques for specific disorders.
- **SPHS-S 508 Physiological Models for Perception and Production of Speech and Voice (3 cr.)** **Currently not being offered.** Provides students with understanding of the physiological bases for production and perception of speech and voice in humans. Covers the dynamic functioning of structures of the organs of speech production and perception, and the relations of their parts. This knowledge will form the basis for subsequent understanding of disorders of speech production and perception.
- **SPHS-S 509 Speech and Language Diagnostics (2 cr.)** **Currently not being offered.** Theoretical bases of speech-language assessment, including concepts of testing and measurement, formal and informal evaluation techniques, and normative and non-normative approaches. Required accompanying laboratory provides observation and experience with specific assessment procedures.
- **SPHS-S 511 Phonetics of American Speech (2 cr.)**Scientific study of American pronunciation based on International Phonetic Alphabet. Exercises in transcription.
- **SPHS-S 513 Speech Anatomy and Physiology (2 cr.)**Anatomy and physiology of the speech mechanism; contemporary views of speech physiology; subsystems of the speech mechanism—respiratory, laryngeal, and supraglottal—integrated with a model of speech production. Laboratory experiences.
- **SPHS-S 515 Topical Seminar in Speech Pathology or Audiology (1-6 cr.)**Topics of current interest; literature on fundamental behavior related to speech, language or hearing. Topics vary from year-to-year with recent offerings in the areas of Autism, Craniofacial Anomalies, Language Intervention: Birth to School-Age, Spanish Language Acquisition.
- **SPHS-S 516 Introduction to Audiological Testing (3-4 cr.)**Rationale and basic procedures in the evaluation of hearing loss.
- **SPHS-S 517 Cognitive and Communicative Aspects of Aging (2 cr.)** Review of cognitive and communicative changes associated with normal aging as well as with diseases and conditions that are prevalent in the aging population. Includes discussion of methodological issues in research on aging as well as principles for maximizing communication with the elderly population.
- **SPHS-S 518 Auditory Disorders (3 cr.)**Study of auditory pathology and the associated audiological test findings. Focus placed on etiology and the auditory and non-auditory manifestations of the disorders.
- **SPHS-S 519 Physiological Assessment of the Ear (3 cr.)**Examination of the theory and practice of clinical assessment of middle ear function. Course will include standard measures of middle ear function, multi-frequency tympanometry, and power reflectance. This course also considers our current understanding of the origin of otoacoustic emissions and their clinical application.
- **SPHS-S 520 Phonological Disorders (3 cr.)**Assessment and treatment of phonological disorders in children; procedures are equally applicable to other populations. Case-based approach to analyses of phonetic, phonemic, syllabic structure in clinical diagnosis and identification of treatment goals. Corresponding treatment methods are evaluated relative to evidence-based practice.
- **SPHS-S 524 Survey of Children's Language Development (2 cr.)**Theories and research relating to normal development of phonology, syntax, semantics, and pragmatics in children from birth through age four. Investigation of cognition and various environmental factors as contributors to language development. Emphasizes learning of elementary skills in language sample analysis.
- **SPHS-S 525 Childhood Dysarthria and Apraxia of Speech (3 cr.)** **Currently not being offered.** The aim of this course is to introduce students to the basic correlates of children's motor speech disorders including issues of underlying pathology, physiological development, assessment procedures, and treatment alternatives.
- **SPHS-S 531 Cognitive-Communication Disorders in Brain Injury and Disease (3 cr.)**This course reviews disorders of perception, cognition, communication, and behavior associated with brain injury and disease in adults. Procedures and issues pertaining to assessment and treatment in the acute and chronic stages of recovery or across disease progression will also be addressed.



- **SPHS-S 532 Language Disorders in Children (3 cr.)** The focus of this course will be on the identification, etiology, and clinical treatment of children who are classified having autism spectrum disorder, intellectual disabilities, developmental language disorder, and other child language disorders.
- **SPHS-S 534 Language Development in School-Age Children (3 cr.)** P: S333. **Currently not being offered.** Survey of theoretical perspectives and research findings related to language development in children aged five through twelve. Particular attention to relationships between oral language skills, reading, and writing. Consideration of language and context, including differences between language demands of home and school.
- **SPHS-S 536 Language Diversity and Clinical Practice (3 cr.)** **Currently not being offered.** Examines the effects on current clinical practice in speech-language pathology of the linked issues of racial, cultural, and linguistic diversity. Both assessment and intervention issues will be considered.
- **SPHS-S 537 Aphasia (3 cr.)** P: S501. In-depth study of diagnosis and management of adult aphasia and related disorders.
- **SPHS-S 538 Language Development in Atypical Populations: Learning Disabilities, Autism, and Intellectual disabilities (3 cr.)** P: S333 and S436 or consent of instructor. **Currently not being offered.** An introduction to three clinical populations likely to have difficulties with language learning. Aspects of perceptual, cognitive, and social growth as they influence language acquisition; patterns of language development and use; issues related to intervention.
- **SPHS-S 539 Child Dual Language Learners; Development, Assessment and Intervention (3 cr.)** Focuses on how children acquire two languages. Topics concerning variables that impact dual-language acquisition children and patterns of language development will be discussed. Issues and strategies for evaluating language skills in this population, and for providing clinical services are presented.
- **SPHS-S 540 Voice Disorders (3 cr.)** This course focuses on facilitating clinical skills related to assessment and management of children and adults with voice disorders. The relevant anatomy and physiology of the vocal mechanism and voice production will be presented. Pathophysiology causes, prevention, assessment, treatment (behavioral, surgical, and medical) of various voice disorders will be addressed.
- **SPHS-S 541 Management of Tracheostomy and Laryngectomy (2 cr.)** **Currently not being offered.** Aerodigestive tract dynamics and disorders, including assessment and treatment. Rehabilitation options associated with tracheostomy, laryngectomy, and dysphagia.
- **SPHS-S 542 Care of the Professional Voice (3 cr.)** Physiological, psychosocial, and occupational aspects of professional voice use. A multidisciplinary perspective on research and practice in the areas of otolaryngology, social psychology, vocal pedagogy, voice science, and communication disorders. Examines historical and current approaches to preventing, assessing, and treating voice breakdown in singers and other professional voice users.
- **SPHS-S 543 Childhood Dysphagia: Diagnosis and Treatment of Swallowing Disorders (2 cr.)** **Currently not being offered.** Anatomy and physiology of child swallowing and respiration is reviewed. Evaluation and treatment of child dysphagia emphasizing instrumental and non-instrumental assessment procedures and the development of efficacious treatment plans. Experience in analysis of child videofluoroscopic studies of swallowing.
- **SPHS-S 544 Dysphagia (3 cr.)** This course focuses on facilitating clinical skills related to assessment and management of dysphagia in children and adults, including those with tracheostomy and ventilator-dependent. The relevant anatomy and physiology of the swallowing mechanism will be discussed. Pathophysiology, causes, assessment, treatment of various conditions resulting in dysphagia will be addressed.
- **SPHS-S 546 Medical Speech-Language Pathology (2 cr.)** **Currently not being offered.** Roles and responsibilities of speech-language pathologists in the medical arena with clients ranging the lifespan will be reviewed and discussed. Topics to be investigated will include continuum of care, interdisciplinary approach, pharmacology, terminology, client advocacy and accreditations, among others. Class format will include lecture, didactic discussion, student project presentations and guest speakers.
- **SPHS-S 550 Stuttering (3 cr.)** This course will focus on the nature and etiology of developmental stuttering, diagnostic procedures, and approaches to treatment in children and adults. Other disorders of fluency, such as acquired stuttering and cluttering will also be discussed.
- **SPHS-S 555 Motor Speech Disorders (3 cr.)** This course will focus on the basic correlates of motor speech disorders in children and adults. Normal development of neuroanatomy, anatomy, and physiology of the speech production mechanism will be reviewed. Characteristics, pathophysiology, etiology, assessment, and treatment of various motor speech disorders will also be addressed.
- **SPHS-S 560 Craniofacial Anomalies (3 cr.)** P: S201. **Currently not being offered.** Orofacial clefts and other genetically based craniofacial disorders are considered in relation to speech production and swallowing. Assessment protocols include auditory-perceptual evaluation, vocal tract imaging (nasendoscopy and fluoroscopy), and speech aerodynamics. Introduction to therapy procedures.
- **SPHS-S 561 Clinical Methods and Practice I (1-3 cr.)** **Introduction to Clinical Practice & Documentation.** Current topics related to clinical practice in speech/language pathology.
- **SPHS-S 562 Practicum in Supervision (1 cr.)** P: S510, S561. **Currently not being offered.** Practicum in the supervision of clinical

- practice in speech-language pathology and audiology.
- **SPHS-S 565 Clinical Methods and Practice II (1-3 cr.) Diagnostic Processes & Overview of Alternative and Augmentative Communication.** Current topics related to clinical practice in speech/language pathology.
  - **SPHS-S 566 Clinical Methods and Practice III (1-3 cr.) Clinical Supervision & Pediatric Speech-Language Pathology.** Current topics related to clinical practice in speech/language pathology.
  - **SPHS-S 567 Clinical Methods and Practice IV (1-3 cr.) Professional Issues and Medical Speech-Language Pathology.** Current topics related to clinical practice in speech/language pathology.
  - **SPHS-S 568 Medical Externship (6 cr.)**P: S561. Intensive participation in the clinical activities of community agencies, hospitals, or other service providers. Available only to advanced students in clinical program.
  - **SPHS-S 570 Clinical Practicum in Audiology I (1-3 cr.)**P: Consent of the Instructor. Supervised on-site clinical work in diagnostic and rehabilitative clinical audiology. Intended for students in the first year of the Au.D. program.
  - **SPHS-S 571 Auditory Anatomy and Physiology (3 cr.)**Structure and function of the mammalian auditory system, including aspects of both cellular and systems physiology.
  - **SPHS-S 572 Clinical Electrophysiology (2 cr.)**Focuses on current applications of electrophysiologic testing, including auditory evoked potentials, otoacoustic emissions, and electronystagmography. Will address role of each of these test procedures in the diagnostic audiologic test battery.
  - **SPHS-S 573 Laboratory in Amplification (1 cr.)**Laboratory exercises in hearing aid selection, fitting and evaluation; earmold acoustics; hearing aid construction; and electroacoustic evaluation of instruments. To be taken concurrently with S576
  - **SPHS-S 574 The Central Auditory Nervous System (3 cr.)**Course covers the anatomy and physiology of the central auditory system. Emphasis is on neural processing mechanisms in mammalian auditory brain areas found in the medulla to the auditory cortex.
  - **SPHS-S 575 Human Hearing and Communication (2 cr.)** **Currently not being offered.** Development of the auditory system and landmarks of auditory behavior, types of hearing loss, intake and exit interviewing techniques, audiometric standards, pure tone audiometry, acoustics impedance measurements, screening for auditory disorders and speech audiometry, effect of age and aging on oral communication, counseling the hearing impaired, strategies in selecting hearing aids, recommending auditory training, speech reading, and manual communication.
  - **SPHS-S 576 Amplification for the Hearing Impaired (3 cr.)**Types and components of electroacoustic hearing aids, earmold acoustics, and procedures for the selection, evaluation, and fitting of hearing aids.
  - **SPHS-S 577 Industrial Audiology (2 cr.)**The role of audiology, emphasizing identification audiometry, damage-risk criteria, measurement and control of noise, conservation procedures, and medico-legal problems.
  - **SPHS-S 578 Audiological Instrumentation and Calibration (2 cr.)** Fundamentals of acoustics and acoustical measurements including waveform measurements, spectral analysis, and noise analysis. Calibration techniques and standards for clinical audiology are also reviewed.
  - **SPHS-S 579 Children with Hearing Loss (3 cr.)**Introduction to the assessment of communication skills in children with hearing loss. Topics covered include early identification of hearing loss, assessment of hearing in very young children, speech and language development in children with hearing loss, and management strategies for hearing-impaired children.
  - **SPHS-S 580 Critical Thinking About Research in Communication Disorders (3 cr.)** This course will provide students with the tools and skills to think critically, solve problems, and make ethical and responsible decisions about clinical assessment and treatment. Emphasis will be placed on the role of research in evidence-based practice and the interpretation of scientific literature.
  - **SPHS-S 601 Experimental Phonetics II (3 cr.)** **Currently not being offered.** Consent of instructor. Speech acoustics. Examination of theories of vocal-tract transmission through a historical perspective. Consideration of literature in acoustic phonetics, with emphasis on research that models speech acoustics relative to articulatory configuration. Laboratory experiences.
  - **SPHS-S 670 Clinical Practicum in Audiology II (1-3 cr.)**Supervised on-site clinical work in diagnostic and rehabilitative clinical audiology. Intended for students in the second year of the Au.D. program.
  - **SPHS-S 671 Auditory Evoked Potentials (2 cr.)**This course considers the theory and application of Auditory Evoked Potentials, emphasizing Electrocochleography and Brainstem Evoked Response Audiometry.
  - **SPHS-S 672 Clinical Externship in Audiology I (1-3 cr.)**Supervised off-site clinical work in diagnostic and rehabilitative clinical audiology. Intended for students in the second year of the Au.D. program.
  - **SPHS-S 673 Clinical Externship in Audiology II (1-5 cr.)**Supervised off-site clinical work in diagnostic and rehabilitative clinical audiology. Intended for students in the third year of the Au.D. program.
  - **SPHS-S 674 Speech, Language and Hearing Science Seminar (3 cr.)** This course will rotate topics through speech, language, and hearing. Ph.D. students must complete one seminar in each area (i.e., 1 in speech, 1 in hearing, and 1 in language) for a total of 9 credits. Students can enroll multiple times given the variation in content.
  - **SPHS-S 675 Assessment of Middle Ear Function (2 cr.)**Currently not being offered. Examination of the theory and practice of clinical assessment of middle ear function. Course will include standard measures of middle ear function, multi-frequency tympanometry, and power reflectance.

- **SPHS-S 676 Advanced Clinical Concepts in Amplification (3 cr.)** This seminar presents advanced material on conventional amplification, assistive listening devices, and classroom amplification systems. Students will develop models for selection, fitting, evaluation, and management of devices for patients with hearing loss. This includes integrating research content into clinical activities leading to appropriate, defensible rationales for a comprehensive hearing program.
- **SPHS-S 677 Implantable Auditory Prostheses (3 cr.)** This course examines various surgically implantable devices used to ameliorate the effects of hearing loss, with particular emphasis on cochlear implants, including considerations for implantation and expected outcomes.
- **SPHS-S 678 Introduction to Psychoacoustics (3 cr.)** Perception of sound by normal and hearing-impaired listeners. Topics covered include masking, pitch, loudness, and other auditory phenomena.
- **SPHS-S 679 Otoacoustic Emissions (2 cr.)** Currently not being offered. Otoacoustic emissions provide a noninvasive measure of cochlear mechanical function. This course considers our current understanding of the origin of otoacoustic emissions and their clinical application.
- **SPHS-S 681 First Year Research Project (3 cr.)** Collaborative research with PhD advisor. This requirement is met upon successful presentation (12 – 15 minutes) in a departmental research colloquium and the writing of a manuscript based on the project.
- **SPHS-S 682 Second Year Research Project (3 cr.)** Students engage in a semi-independent research project in their major area of focus. This requirement is met upon successful presentation in a departmental research colloquium (15 – 30 minutes) and the writing of a manuscript based on the project.
- **SPHS-S 683 Research Forum in Speech, Language, and Hearing Sciences (0-1 cr.)** Research presentations by students, faculty in the Department of Speech, Language and Hearing Sciences, and guest speakers as well as professional development workshops. Students must enroll a minimum of four semesters, two semesters at 1 credit and two semesters at 0 credits. Students are expected to attend and participate in S683 throughout their Ph.D. program, unless they are not in residence.
- **SPHS-S 685 Research and Ethics in Speech, Language, and Hearing Sciences (3 cr.)** Selected topics in research design, analysis, and reporting (articles and talks); ethics; and preparation of grant proposals, as appropriate to speech, language and hearing sciences, and disorders.
- **SPHS-S 702 Instrumentation in Speech, Language and Hearing Sciences (3 cr.)** Introduction to current methodology used in investigations of speech, language and hearing sciences.
- **SPHS-S 771 Diagnostics and Pathologies (3 cr.)** This course examines diagnostic audiology and auditory disorders within the scope of practice of clinical audiology. Attention will be given to theory, administration, and application of various clinical tests and measures used in assessment and treatment of children and adults.
- **SPHS-S 772 Amplification and Rehabilitation (3 cr.)** This course examines an array of topics within the scope of practice of clinical audiology, with particular emphasis on matters germane to amplification and rehabilitation. Attention will be given to theory, administration, and application of various clinical tests and measures used for both assessment and treatment.
- **SPHS-S 773 Pediatrics and Special Populations (2 cr.)** This course examines an array of topics within the scope of practice of clinical audiology, with particular emphasis on matters germane to pediatrics and special test populations. Amplification, business issues, and ethical considerations may also be discussed. Attention will be given to theory, administration, and application of various clinical tests and measures used for both assessment and treatment.
- **SPHS-S 774 Recent Advances in Audiology (2 cr.)** This course examines an array of topics within the scope of practice of clinical audiology, with particular emphasis on examining the most recent literature from refereed journals. Attention will be given to theory, administration, and application of various clinical tests and measures used for both assessment and treatment.
- **SPHS-S 775 Vestibular Diagnosis and Rehabilitation (3 cr.)** Vestibular system anatomy & physiology examined. Clinical tests and measures used to assess balance function are covered, including electronystagmography (ENG), videonystagmography (VNG), rotational chair, & dynamic posturography. Emphasis on clinical assessment, treatment & rehabilitation.
- **SPHS-S 776 Advanced Topics in Rehabilitative Audiology (3 cr.)** Advanced orientation to audiologic rehabilitation for children and adults. Topics may include speech acoustics, audio-visual speech perception, hearing aids, assistive listening devices, implantable auditory prostheses, cultural issues, and assessment and treatment options for children and adults with hearing loss.
- **SPHS-S 777 Speech Communication, Aging, and Hearing Impairment (2 cr.)** This course focuses on whether hearing aids can help the elderly with impaired hearing understand speech, and if so, under what conditions and with what limitations.
- **SPHS-S 778 Educational Audiology (2 cr.)** Combined lecture, classroom discussion, guest presentations, and case studies examining an array of topics within the scope of educational audiology. Particular emphasis on early intervention, educational law, and auditory access to language for cognitive development.
- **SPHS-S 779 Business Practices (2 cr.)** This course aims to provide students with the tools necessary to create a framework for practicing audiology in a business setting.

## Statistics

College of Arts and Science

Departmental E-mail: [statdept@indiana.edu](mailto:statdept@indiana.edu)

**Departmental URL:** [www.stat.indiana.edu/](http://www.stat.indiana.edu/)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

## Curriculum

### Degrees Offered

Master of Science in Applied Statistics, Master of Science in Statistical Science, Doctor of Philosophy in Statistical Science

### Special Departmental Requirements

(See also general University Graduate School requirements.)

### Admission Requirements

Statistics is an increasingly interdisciplinary field. Recognizing that fact, the IU Department of Statistics welcomes students from a variety of quantitative backgrounds, not just statistics and mathematics.

To be admitted to the Master of Science in Applied Statistics program a student must be pursuing a Ph.D. in another program at IU.

Students entering our Master of Science or Ph.D. in Statistical Science programs should have a bachelor's or master's degree from an accredited university. Academic preparation should include at least two undergraduate courses in statistics, some background in mathematics that includes courses in multivariate calculus and linear algebra, and some familiarity with computer programming.

Applicants will be evaluated using a combination of academic transcripts, grade-point averages, GRE scores, TOEFL scores (for international applicants), letters of recommendation, and personal statements. Selection criteria include breadth and depth of preparation, quality of academic performance, and motivation.

### Master of Science in Applied Statistics

The M.S. in Applied Statistics is intended for the student pursuing a Ph.D. degree in another field who wishes to enhance his or her statistical knowledge and credentials by obtaining a graduate degree in Statistics, in addition to a Ph.D. degree in his or her primary field of study.

### Course Requirements

A total of 31 credit hours. The following 19 hours are required: (1) STAT S520 or S620; (2) one of S610, S611, S612; (3) S631, S632, and S690; (4) one additional course from STAT. The remaining 12 credit hours must be taken in an area relevant to the field of Statistics, and must be approved by the Director of Graduate Studies.

MSAS students who choose to minor in statistics must complete the minor coursework prior to submitting their candidacy and may use all the minor coursework towards the MSAS. The student will then be permitted to use an additional three courses (9 credits total) from the PhD courses towards the MSAS requirements. In this case, the total number of courses allowed to be used from the MSAS towards the PhD is four (12 credits) and the total courses allowed from the PhD towards the MSAS is seven

(21 credits). The student would need three additional courses that are not used in the PhD to complete the MSAS requirements.

MSAS students who do not minor in statistics can use no more than 12 credit hours from the PhD towards the MSAS.

### Master of Science in Statistical Science

The M.S. in Statistical Science program trains students to become applied statisticians who collaborate with researchers in various disciplines to design experiments and analyze data.

### Course Requirements

A total of 31 credit hours including STAT S610, S611, S621, S622, S631, S632, and S690. Students must also complete either a one-semester consulting internship, S692, or a thesis, S799. The remaining 6 credit hours can be from any graduate statistics courses approved by the Director of Graduate Studies.

### Doctor of Philosophy in Statistical Science

The Ph.D. program trains students as research statisticians who develop new statistical methodology. This program is for graduate students who wish to obtain positions as research statisticians in academia, government, or industry.

### Course Requirements

A total of 90 credit hours, including at least 60 credit hours of coursework; dissertation research to reach 90 credit hours.

Core Courses (9 credit hours): Math-M 413: Introduction to Analysis I, STAT-S 610: Introduction to Statistical Computing, STAT-S 611: Applied Statistical Computing

Data Analysis Courses (12 credit hours): STAT-S 631: Applied Linear Models I, STAT-S 632: Applied Linear Models II, STAT-S 771: Advanced Data Analysis I, STAT-S 772: Advanced Data Analysis II

Advanced Statistical Theory Courses (12 credit hours): STAT-S 721: Advanced Statistical Theory I, STAT-S 722: Advanced Statistical Theory II plus at least two semesters of STAT-S 785: Seminar on Statistical Theory

Elective and Minor Courses (27 credit hours): All students must complete a Ph.D. minor in another graduate program. Minor requirements are specified by the awarding department and are described in the University Graduate School Bulletin. All courses in this category must be approved by the Director of Graduate Studies.

### Qualifying Examination

Students advance to candidacy by completing required coursework and passing two qualifying examinations. The Statistical Theory exam is a written examination based on material covered in STAT-S 721-722 (Advanced Statistical Theory). This exam is administered in the August following the conclusion of the S721/S722 sequence. The Data Analysis exam consists of an oral presentation and a paper based on a project completed in STAT-S 771-772 (Advanced Data Analysis). The oral presentation usually takes place near the end of the 772 semester and the paper then incorporates suggested revisions. Students

who fail either qualifying examination more than once will be dismissed from the program.

### **Advisory and Research Committees**

For each student admitted to the PhD program, a doctoral advisory committee will be formed in the first year of training. After passing their qualifying exams, students must form a research (dissertation) committee. The student's committee (advisory or research) will consult with the student at least once per year to help the student determine his/her course of graduate study, develop a research program, approve the student's course selections, and review the student's progress in all areas (for example, completion of required courses, course grades, and research progress). The student's committee will determine whether or not the student is making adequate progress in all areas. Should the advisory (or research) committee determine that a student is not making adequate progress in any area, this may be grounds for probation, elimination of departmental funding, or dismissal from the program.

### **Dissertation Proposal and Research**

A dissertation is required. The dissertation represents original methodological research by the student. The research should be of sufficient quality to merit publication in peer-reviewed journals.

After passing the qualifying exams, students should begin the process of finding a dissertation advisor, forming a dissertation committee, and identifying a dissertation topic. The dissertation proposal is an oral exam intended to demonstrate to the statistics faculty that the student is prepared to begin research. The student will make an oral presentation that outlines the proposed research, including summaries of related work and descriptions of the techniques that will be used. The dissertation committee and other statistics faculty will then question the student.

### **Ph.D. Minor in Statistical Science**

Doctoral students obtaining a Ph.D. in another discipline are welcome to choose Statistics as an outside minor. Four graduate courses in statistics are required, at least three of which must be at the 600-level or above taken from the Department of Statistics. The specific minor courses must be approved by the Director of Graduate Studies of the Department of Statistics.

### **Faculty**

#### **Chairperson**

Professor Elizabeth Housworth\*

#### **Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### **Distinguished Professor and Chancellor's Professor**

Scott Long\* (Emeritus)

#### **Rudy Professors**

Stanley Wasserman\* (Emeritus)

#### **Professors**

Steen Andersson\* (Emeritus), Elizabeth Housworth\*, Lanh Tran\* (Emeritus), Michael Trosset\*

### **Associate Professors**

Chunfeng Huang\*, Daniel Manrique-Vallier\*

### **Assistant Professors**

Julia Fukuyama\*, Amanda Mejia\*, Andrew Womack\*, Fangzheng Xie

### **Adjunct Professors**

Franklin Acito\* (Emeritus, Business), Katy Borner\* (Library and Information Sciences), Richard Bradley\* (Emeritus, Mathematics), Jerome Busemeyer\* (Psychological and Brain Sciences), Yoosoon Chang\* (Economics), David Crandall\* (Computer Science, Informatics), Mehmet Dalkilic\* (Informatics and Computer Science), Victor Goodman\* (Emeritus, Mathematics), Andrew Hanson\* (Emeritus, Computer Science), Jaroslav Harezlak\* (Epidemiology and Biostatistics), Roni Khardon\* (Computer Science), John Kruschke\* (Psychological and Brain Sciences), Russell Lyons\* (Mathematics), Robert Nosofsky\* (Psychological and Brain Sciences), Joon Park\* (Economics), Joanne Peng\* (Emeritus, Education), Christopher Raphael\* (Informatics), Scott Robeson\* (Geography), Richard Shiffrin\* (Emeritus, Psychological and Brain Sciences), James Townsend\* (Emeritus, Psychological and Brain Sciences), Pravin Trivedi\* (Emeritus, Economics), Dirk Van Gucht\* (Computer Science)

### **Adjunct Associate Professors**

Yong-Yeol Ahn\* (Informatics)

### **Adjunct Assistant Professors**

Wai Tong (Louis) Fan (Mathematics), Minje Kim\* (Intelligent Systems Engineering), Grigory Yaroslavtsev\* (Computer Science)

### **Director of Graduate Studies**

Daniel Manrique-Vallier\*

### **Courses**

- STAT-S 501 Statistical Methods I: Introduction to Statistics (3 cr.) P: One undergraduate course in statistics. This course takes a systematic approach to the exposition of the general linear model — focusing on correlation, simple linear and multiple regression. Students are introduced to the use of statistical analysis software. The first third of the course consists of a review of statistics, data analysis tools, significance tests, and confidence intervals. Students learn how to think creatively about the use of statistical methods in their own research.
- STAT-S 503 Statistical Methods II: Generalized Linear Models and Categorical Data (3 cr.) P: STAT S501 or one undergraduate course in statistics. This course takes a systematic approach to the exposition of the general linear model — focusing on



categorical data. Of primary concern will be models for which the response variable is categorical. Such models include probit, logit, ordered logit, and Poisson regression, among others. Students learn how to think creatively about the use of statistical methods in their own research.

- **STAT-S 520 Introduction to Statistics (3 cr.)**  
P: MATH M212, M301, M303, or the equivalent. Basic concepts of data analysis and statistical inference, applied to 1-sample and 2-sample location problems, the analysis of variance, and linear regression. Probability models and statistical methods applied to practical situations and actual data sets from various disciplines. Elementary statistical theory, including the plug-in principle, maximum likelihood, and the method of least squares.
- **STAT-S 610 Introduction to Statistical Computing (3 cr.)** Introduction to R from a software engineering perspective and an introduction to algorithms commonly used in applied statistics. Optimization algorithms including gradient descent, stochastic gradient descent, the EM algorithm, and topics in convex optimization. Stochastic algorithms including rejection sampling, Metropolis-Hastings, and Gibbs sampling.
- **STAT-S 611 Applied Statistical Computing (3 cr.)** P: STAT S520 or equivalent or consent of instructor.  
This course will be an introduction to statistical computing using R and C/C++. It will mainly focus on writing code for solving statistical problems. We will also cover a number of algorithms used in modern statistical computation, with emphasis in stochastic simulation methods.
- **STAT-S 612 Reproducible Results and the Workflow of Data Analysis (3 cr.)** P: Graduate level class in regression modeling. This course presents methods for producing statistical analyses that are reproducible. Topics include creating datasets containing metadata, using script files that allow results to be replicated, methods to organize and preserve files, approaches to documenting research, and ways to maintain the provenance of statistical results.
- **STAT-S 621 Fundamentals of Statistical Methods and Theory I (3cr.)** P: MATH-M 301 or M303 or equivalent; MATH-M 311 or equivalent; and STAT-S520 or equivalent; or permission of instructor. Part 1 of a 2-semester sequence on fundamental concepts, principles, and techniques of probabilistic/statistical inference. Random variables and probability distributions, expectation, limit laws, parametric vs nonparametric inference, Bayesian vs frequentist inference, point estimation, hypothesis testing, confidence sets, simulation.
- **STAT-S 622 Fundamentals of Statistical Methods and Theory II (3cr.)** Part 2 of a 2-semester sequence on fundamental concepts, principles, and techniques of probabilistic/statistical inference. Hypothesis testing, Bayesian inference, regression, causal inference, classification, stochastic processes, simulation methods.
- **STAT-S 625 Nonparametric Theory and Data Analysis (3 cr.)** P: Two statistics courses at the graduate level, or consent of instructor. Survey of methods for statistical inference that do not rely on parametric probability models. Statistical functionals, bootstrapping, empirical likelihood. Nonparametric density and curve estimation. Rank and permutation tests.
- **STAT-S 626 Bayesian Theory and Data Analysis (3 cr.)** P: Two statistics courses at the graduate level, or consent of instructor. Introduction to the theory and practice of Bayesian inference. Prior and posterior probability distributions. Data collection, model formulation, computation, model checking, sensitivity analysis.
- **STAT-S 631 Applied Linear Models I (3 cr.)** P: STAT S320 and MATH M301 or M303 or S303 (or equivalent courses), or consent of instructor. Part I of a 2-semester sequence on linear models, emphasizing linear regression and the analysis of variance, including topics from the design of experiments and culminating in the general linear model.
- **STAT-S 632 Applied Linear Models II (3 cr.)** P: STAT S631, or consent of instructor. Part II of a 2-semester sequence on linear models, emphasizing linear regression and the analysis of variance, including topics from the design of experiments and culminating in the general linear model.
- **STAT-S 637 Categorical Data Analysis (3 cr.)** P: Two statistics courses at the graduate level, or consent of instructor. The analysis of cross classified categorical data. Loglinear models; regression models in which the response variable is binary, ordinal, nominal, or discrete. Logit, probit, multinomial logit models; logistic and Poisson regression. Equivalent to EDUC Y637.
- **STAT-S 639 Multilevel Models (3 cr.)** P: Two statistics courses at the graduate level, or consent of instructor. Introduction to the general multilevel model with an emphasis on applications. Discussion of hierarchical linear models, and generalizations to nonlinear models. How such models are conceptualized, parameters estimated and interpreted. Model fit via software. Major emphasis throughout the course will be on how to choose an appropriate model and computational techniques. Equivalent to EDUC Y639.
- **STAT-S 640 Multivariate Data Analysis (3 cr.)** P: Two statistics courses at the graduate level, or consent of instructor. Elementary treatment of multivariate normal distributions, classical inferential techniques for multivariate normal data, including Hotelling's  $T^2$  and MANOVA. Discussion of analytic techniques such as principal component analysis, canonical correlation analysis, discriminant analysis, and factor analysis. Equivalent to PSY P654.
- **STAT-S 645 Covariance Structure Analysis (3 cr.)** P: Two statistics courses at the graduate level, or consent of instructor. Path analysis. Introduction to multivariate multiple regression, confirmatory factor analysis, and latent variables. Structural equation

models with and without latent variables. Mean-structure and multi-group analysis. Equivalent to EDUC Y645.

- STAT-S 650 Time Series Analysis (3 cr.) P: Two statistics courses at the graduate level, or consent of instructor. Techniques for analyzing data collected at different points in time. Probability models, forecasting methods, analysis in both time and frequency domains, linear systems, state-space models, intervention analysis, transfer function models and the Kalman filter. Stationary processes, autocorrelations, partial autocorrelations, autoregressive, moving average, and ARMA processes, spectral density of stationary processes, periodograms, estimation of spectral density. Course equivalent to MATH M568.
- STAT-S 655 Longitudinal Data Analysis (3 cr.) P: Two statistics courses at the graduate level, or consent of instructor. Introduction to methods for longitudinal data analysis; repeated measures data. The analysis of change—models for one or more response variables, possibly censored. Association of measurements across time for both continuous and discrete responses. Course is equivalent to EDUC Y655.
- STAT-S 660 Sampling (3 cr.) P: Two statistics courses at the graduate level, or consent of instructor. Design of surveys and analysis of sample survey data. Simple random sampling, ratio and regression estimation, stratified and cluster sampling, complex surveys, nonresponse bias.
- STAT-S 670 Exploratory Data Analysis (3 cr.) P: Two statistics courses at the graduate level, or consent of instructor. Numerical and graphical techniques for summarizing and displaying data. Exploration versus confirmation. Connections with conventional statistical analysis and data mining. Applications to large data sets.
- STAT-S 675 Statistical Learning and High-Dimension Analysis (3 cr.) P: STAT S640, or two statistics courses at the graduate level, or consent of instructor. Dataanalytic methods for exploring the structure of high-dimensional data. Graphical methods, linear and nonlinear dimension reduction techniques, manifold learning. Supervised, semisupervised, and unsupervised learning.
- STAT-S 676 Statistical Learning: Model Selection (3 cr.) P: STAT S675 or consent of instructor. A second semester course in high dimensional data analysis focused on model selection. The course covers the trade-off between model fidelity to the observed data and penalization for model complexity. All methods from the course will be applied to real datasets.
- STAT-S 681 Topics in Applied Statistics (3 cr.) P: Consent of instructor. Careful study of a statistical topic from an applied perspective. May be repeated with different topics.
- STAT-S 682 Topics in Mathematical Statistics (3 cr.) P: Consent of instructor. Careful study of a statistical topic from a theoretical perspective. May be repeated with different topics.
- STAT-S 690 Statistical Consulting (4 cr.) P: Consent of instructor. Development of effective consulting skills, including the conduct of consulting sessions, collaborative problem-solving, using professional resources, and preparing verbal and written reports. Interactions with clients will be coordinated by the Indiana Statistical Consulting Center.
- STAT-S 692 Internship in Statistical Consulting (3 cr.) P: STAT S690 and permission of Director of Graduate Studies. One semester internship at the Indiana Statistical Consulting Center (ISCC). Students work on actual consulting problems under the direct supervision of professional statisticians.
- STAT-S 695 Readings in Statistics (1-3 cr.) P: Consent of instructor. Supervised reading of a topic in statistics. May be repeated with different topics.
- STAT-S 710 Statistical Computing (3 cr.) P: STAT S620, or consent of instructor. Survey of numerical methods in statistics. Matrix factorizations and algorithms for linear regression. Nonlinear optimization, maximum likelihood and nonlinear regression. Pseudorandom number generation and Monte Carlo methods.
- STAT-S 721 Advanced Statistical Theory I (3 cr.) P: S620, some knowledge of elementary measure theory, and/or consent of the instructor. Mathematical introduction to major areas of statistical theory and practice, including statistical models, sufficiency, likelihood inference, estimation and testing, Bayesian inference, decision theory, equivariance, and optimality of test statistics.
- STAT-S 722 Advanced Statistical Theory II (3 cr.) P: S721 or consent of the instructor. A continuation of S721. A mathematical introduction to major areas of statistical theory and practice including multinomial models, canonical linear models, exponential families, asymptotic theory, and general linear models.
- STAT-S 730 Theory of Linear Models (3 cr.) P: STAT S620, or consent of instructor. Theory of the general linear model. Distribution theory, linear hypotheses, the Gauss-Markov theorem, testing and confidence regions. Application to regression and to analysis of variance.
- STAT-S 740 Multivariate Statistical Theory (3 cr.) P: STAT S721 and S722, or consent of the instructor. Multivariate normal distributions. Multivariate linear normal models, estimation and testing. Wishart distributions and models. Inference for the covariance matrix. Eigenvalues, including canonical correlations and principal components/factor analysis.
- STAT-S 771 Advanced Data Analysis I (3 cr.) P: Permission of Director of Graduate Studies. This course introduces Ph.D. students in the Department of Statistics to an in-depth cross-disciplinary research experience, emphasizing the role of statistics in solving scientific, technological, or policy

problems. Each student identifies a research project, forms an advisory committee, and provides interim written and oral progress reports throughout the remainder of the semester.

- **STAT-S 772 Advanced Data Analysis II (3 cr.)**  
P: STAT-S 771 Second semester of a two-semester sequence. Ph.D. students in the Department of Statistics complete the cross-disciplinary projects they began in STAT-S 771.
- **STAT-S 781 Advanced Topics in Applied Statistics (3 cr.)** P: Consent of the instructor. Careful study of an advanced statistical topic from an applied perspective. As topics vary, this course may be repeated for credit.
- **STAT-S 782 Advanced Topics in Mathematical Statistics (3 cr.)** P: Consent of the instructor. Careful study of an advanced statistical topic from a mathematical or theoretical perspective. As topics vary, this course may be repeated for credit.
- **STAT-S 785 Seminar on Statistical Theory (3 cr.)**  
P: Ph.D. standing in Department of Statistics. Professional development for Ph.D. students in statistics. Topics in statistical theory will be used to provide students with experience in preparing presentations, posters, referee reports, grant proposals, etc.
- **STAT-S 799 Research in Statistics (1-6 cr.)**  
P: Consent of the instructor. Research in statistics.

## Sustainable Energy Science

### College of Arts and Sciences

Departmental E-mail: [rbarthel@indiana.edu](mailto:rbarthel@indiana.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Ph.D. Minor in Sustainable Energy Science

The supply of affordable energy is a pre-requisite for economic development around the world. The U.S. faces considerable challenges in meeting current and future energy demands while also addressing pressing environmental and national security concerns. Hence there is a need for research into various aspects of energy supply and demand. The Sustainable Energy Science Program encourages interdisciplinary study of the physical sciences that under-pins energy use and supply. The Ph.D. minor program embraces a multidisciplinary approach drawing expertise from a number of Departments and Schools with an emphasis on the understanding of the scientific basis of sustainability and the implications of energy use.

#### Admission and Program of Study

In collaboration with the Sustainable Energy director and the student's graduate advisor, students are required to submit a Program of Study to the Sustainable Energy Advisory Committee for final approval. The Program of Study will provide the rationale for the student's proposed curriculum and will list the courses, with

alternative selections in the event such courses are not offered on a timely basis, that will serve as the student's minor program. With the Sustainable Energy Advisory Committee's approval of the Program of Study, the student will become officially enrolled in the Sustainable Energy Science Program.

#### Ph.D. Minor Requirements

Requirements encourage graduate students to develop a program of scientific inquiry that complements their doctoral program and takes advantage of the wide range of faculty from a number of departments with training and research in the fields of wind energy, solar energy, biofuels, geothermal energy, fossil fuels, carbon sequestration, air pollution and climate change. Each program is developed in consultation between the student and the graduate advisor and the Sustainable Energy Science director. Students must complete a total of 12 credit hours (Of hours counted toward the minor, at least 6 must be from outside the student's major field). Additionally, the Sustainable Energy Program will submit one question for the student's qualifying examination.

#### Faculty

##### Graduate Minor Director

Rebecca Barthelmie\* (Atmospheric Science)

##### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Professors

Rebecca Barthelmie\* (Atmospheric Science), Sara Pryor\* (Atmospheric Science), Phil Stevens\* (School of Public and Environmental Affairs), Caroline Jarrold\* (Chemistry), Maria Mastalerz (Indiana Geological Survey), Gary Pavlis\* (Geology), Paul Sokol\* (Physics)

#### Associate Professors

Heather Reynolds\* (Biology), Mehmet Dalkilic\* (School of Informatics and Computing)

#### Courses

**SPEA-E 515 Air Pollution and Control (3 cr.)**

**PHYS-P 510 Environmental Physics (3 cr.)**

**INFO-I 590 Topics in Informatics (3 cr.)**

**GRAD-L 830 Readings in Landscape Studies (3 cr.)**

P: Consent of the director.

Supervised readings on selected topics in landscape studies.

**GEOL-G 690 Fundamentals of Hydrocarbon Systems (3 cr.)**

**GEOL-G 587 Organic Geochemistry (3 cr.)**

**GEOL-G 586 Geochemical Modeling (3 cr.)**

**GEOL-G 572 Basin Analysis and Hydrocarbons (3 cr.)**

**GEOL-G 571 Principles of Petroleum Geology (3 cr.)**

**GEOL-G 516 Introduction to Coal Geology (3 cr.)**  
**GEOL-G 514 Geophysical Signal Processing (3 cr.)**  
**GEOG-G 575 Climate Change (3 cr.)**  
**GEOG-G 555 Wind Power Meteorology (3 cr.)**  
**GEOG-G 542 Sustainable Energy Systems (3 cr.)**  
**GEOG-G 534 Air Pollution Meteorology (3 cr.)**  
**CHEM-C 565 Nuclear Chemistry (3 cr.)**

## Telecommunications

### College of Arts and Sciences

**Departmental URL:** <http://mediaschool.indiana.edu/>

**Departmental E-mail:** [ttheodor@indiana.edu](mailto:ttheodor@indiana.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

This legacy program is no longer accepting new applicants. Please see the 2016-2017 Media School entry for new program requirements related to this area of study.

Master of Arts, Master of Science, Joint Master of Arts or Master of Science and Doctor of Jurisprudence (jointly with the Maurer School of Law), Joint Master of Arts or Master of Science and Master of Business Administration (jointly with the Kelley School of Business), and Doctor of Philosophy (Ph.D. telecommunications track in the Mass Communications Program).

#### Special Departmental Requirements

(See also general University Graduate School requirements).

#### Master of Arts Degree

The M.A. in Telecommunications is designed to train students for academic careers in communications and related fields. Graduates will be prepared to enter a Ph.D. program, teach at small colleges, or accept analytical and research positions in media and creative industries.

#### Admission Requirements

1. Bachelor's degree or international equivalent;
2. Verbal and quantitative GRE scores above 152 and analytical score above 4.0;
3. Statement of purpose;
4. Three letters of recommendation;
5. An academic writing sample;
6. Paper TOEFL score greater than 600, computer-based TOEFL score greater than 250, or Internet-based TOEFL score greater than 100 for international students;
7. A curriculum vita.

Applications from students who have not majored in communication at the bachelor's level are welcomed.

If admitted, these students may be required to take supplementary courses.

#### Grades

B (3.0) average or above. Any semester's work averaging less than B will result in the student's being placed on academic probation. Accumulation of two individual course grades of C (2.0) or lower for graduate credit will result in dismissal of the student from the program. The school evaluates each student's progress toward the degree every year.

#### Advisory Committee

Each student will receive initial guidance from a faculty member assigned by the Director of Graduate Studies. By April 15th of her or his first year, each student will select an Advisor and nominate a three-member Advisory Committee. At least two members of the Advisory Committee must be from the Media School. Students who fail to file an approved Program of Study before the start of Fall semester in the second year of their studies will be considered out of good academic standing.

#### Course Requirements

1. M503 Media Theories and M502 Media Research, with a grade of B (3.0) or above;
2. Thesis (up to cr. 6 of T800 taken after an approved thesis proposal) or comprehensive examination (written and oral, administered by the Student's Advisory Committee);
3. Program of Study listing all courses toward the degree, approved by the student's Advisory Committee;
4. No more than 6 credits of independent study.

At least 21 credit hours must be taken within the Media School.

#### Thesis

Oral defense required, administered by the student's Advisory Committee.

#### Master of Science Degree

The M.S. in Telecommunications is designed to prepare students for professional careers in media design, production, and management.

#### Admission Requirements

1. At least a B (3.0) average in an undergraduate program;
2. appropriate level of performance on the Graduate Record Examination General Test (all scores above 500 or verbal and quantitative scores above 500 and analytical score at or above 4.0 or equivalents for verbal, quantitative and analytical scores as per conversion tables provided by Educational Testing Service for the new GRE scoring system) for all MS applicants except those focusing on new media design and production. Students focusing on new media design and production could provide either GRE scores or a portfolio of creative work;
3. statement of purpose;
4. three letters of recommendation;
5. an academic writing sample; and

6. paper TOEFL score greater than 600, computer based TOEFL score greater than 250, or internet based TOEFL score greater than 100 for international students.

Applications from students who have not majored in communication at the bachelor's level are welcomed. If admitted, these students may be required to take supplementary courses.

### Grades

B (3.0) average or above. Any semester's work averaging less than B will result in the student's being placed on academic probation. Accumulation of three individual course grades of C (2.0) or lower for graduate credit will result in dismissal of the student from the program. The department evaluates each student's progress toward the degree every year.

### Advisory Committee

Each student will receive initial guidance from a faculty member assigned by the Director of Graduate Studies. During the second semester, each student will select a three-member Advisory Committee that will be responsible for approving the student's Program of Study, administering the final exam, and other requirements toward the degree. At least two members of the Advisory Committee must be from the Department of Telecommunications. Students who fail to select an Advisory Committee or construct a Program of Study by the end of the second semester in the program will be considered as making inadequate progress toward the degree.

### Course Requirements

A minimum of 36 credit hours, including

1. T505 Media Organizations, with a grade of B (3.0) or above;
2. other core course(s) corresponding to a chosen concentration area, with a grade of B (3.0) or above:
  - Design and Production Concentration: T580 Interactive Storytelling and Computer Games
  - Management Concentration: Two of the following: T502 Introduction to Research Methods in Telecommunications, T504 Introduction to Telecommunications Policy Studies, T522 Managing the Creative Process, T532 Economics of Media Industries, T571 Cognitive and Emotional Psychology, T610 The Networked Society;
3. Program of Study listing all courses toward the degree, approved by the student's Advisory Committee;
4. completion of approved creative media project (design and production concentration only)

At least 18 credit hours must be taken within the Department of Telecommunications.

T800 Thesis: Telecommunications, T540 Special Projects in Telecommunications (independent study), and T575 Directed Group New Media Design Project may each be taken for up to 6 credits. Combined, degree-applied credits derived from these three courses should not exceed 12 total credits.

### Final Examination

Students must pass a comprehensive written and oral examination, administered by the student's Advisory Committee. The exam consists of:

1. **Design and Production Concentration:** written questions on coursework, written questions on an approved media design project and an oral defense
2. **Management Concentration:** written questions on core coursework, written questions on other coursework and an oral defense

### Joint Degree: Master of Arts or Master of Science in Telecommunications and Doctor of Jurisprudence in the Maurer School of Law

To be eligible to receive the degrees of Doctor of Jurisprudence and Master of Arts or Master of Science in Telecommunications, which must be received simultaneously, a student must:

1. complete 79 semester credit hours in the Maurer School of Law including all of the required course work;
2. complete 27 credit hours in the Department of Telecommunications, including all of its required course work;
3. earn a cumulative grade point average of at least 2.3 on all work taken in the Maurer School of Law and at least 3.0 on all work taken in the Department of Telecommunications.

### Joint Degree: Master of Arts or Master of Science in Telecommunications and Master of Business Administration in the Kelley School of Business

To be eligible to receive the degrees of Master of Business Administration and Master of Arts or Master of Science in Telecommunications, which must be received simultaneously, a student must:

1. complete 42 credit hours in the Kelley School of Business, including all of the required course work;
2. complete 27 credit hours for the Master of Arts in Telecommunications or 33 credit hours for the Master of Science in Telecommunications, including all of the required course work;
3. earn a cumulative grade point average of at least 3.0 on all work taken in the telecommunications program and a cumulative grade point average of at least 2.75 on all work taken in the Kelley School of Business;
4. be in residence for six semesters (or their equivalent of full-time resident study; three of these semesters must be in telecommunications and three must be in the Kelley School of Business).

### Doctor of Philosophy Degree in Mass Communications: Telecommunications Track

The Department of Telecommunications, in conjunction with the School of Journalism, offers a doctoral program in mass communications.

### Admission Requirements

1. Master's degree from a recognized institution;
2. at least a 3.5 grade point average in a master's program;



3. appropriate level of performance on the Graduate Record Examination General Test (all scores above 500 or verbal and quantitative score above 500 and analytical score at or above 4.0 or equivalents for verbal, quantitative and analytical scores as per conversion tables provided by Educational Testing Service for the new GRE scoring system);
4. statement of purpose;
5. three letters of recommendation;
6. paper TOEFL score greater than 600, computer-based TOEFL score greater than 250, or Internet-based TOEFL score greater than 100 for international students;
7. writing sample.

Applications from students who have not majored in communication at the master's level are welcomed. If admitted, these students may be required to take supplementary courses. Consult the Director of Graduate Studies as to whether graduate credit might be granted for a non-communication master's degree and if supplementary course work is necessary.

### Grades

B (3.0) average or above. Any semester's work averaging less than B will result in the student's being placed on academic probation. Accumulation of three individual course grades of C (2.0) or lower for graduate credit will result in dismissal of the student from the program. The department evaluates each student's progress toward the degree every year.

### Advisory Committee

Each student will receive initial guidance from a faculty member assigned by the Director of Graduate Studies. During the second semester, each student will select an Advisory Committee consisting of at least two members from the major area and one from another. Students who fail to select an Advisory Committee or construct a Program of Study by the end of the second semester in the program will be considered as making inadequate progress toward the degree.

### Course Requirements

A minimum of 90 credit hours, including

1. the core consisting of T501 Philosophy of Inquiry in Telecommunications, T502 Introduction to Research Methods in Telecommunications, T503 Telecommunications Theory, and T504 Introduction to Telecommunications Policy Studies with a grade of at least a B in each course;
2. T600 Proseminar in Telecommunications Research for four semesters;
3. 12 credit hours in a methodology area;
4. a minimum of six courses in the Department of Telecommunications if student is transferring 16-30 credits, eight courses if transferring 1-15 credits, and 10 courses (at least four completed after receipt of the M.A.) if student has an M.A. from this department;
5. completion of a minor as required by the minor department;
6. no more than 6 credits of independent study;
7. no more than 15 credit hours in the dissertation,

8. Program of Study listing all courses toward the degree, approved by the student's Advisory Committee.

Within these requirements, students design a rigorous and coherent individualized plan of study with the help of their Advisory Committee. This program is to be approved by the student's Advisory Committee, the Director of Graduate Studies (with the advice of the Graduate Committee), and the Department Chair by the end of the second semester of course work.

### Minor

Consistent with University Graduate School policy, each student must have at least one minor subject. Course work in the minor must be approved by the student's Advisory Committee and must meet the requirements of the minor department.

### Research Skill Requirement

12 credits of appropriate research skills courses approved by the student's Advisory Committee (see number 3 under "Course Requirements" above).

### Qualifying Examination

Written and oral, covering the methodology area, the core, the minor, and the student's individualized areas of specialization.

### Final Examination

Oral, primarily a defense of the dissertation.

### Ph.D. Minor in Telecommunications

Doctoral students from other departments may choose telecommunications as an outside minor. A minimum of 15 credits in the department at the 500 level or above is required, including T501, Philosophy of Inquiry in Telecommunications.

### Faculty

#### Chairperson

Professor Walter Gantz\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Distinguished Professor

Annie Lang\*

#### Professors

Richard Burke\* (Emeritus), Edward J. Castronova\*, Barbara Cherry\*, Susan Eastman\* (Emerita), Walter Gantz\*, Maria Elizabeth Grabe\*, Michael McGregor\*, Harmeet Sawhney\*, David H. Waterman\*

#### Associate Professors

Julia R. Fox\*, Bryant M. Paul\*, Robert F. Potter\*, Herbert A. Terry\* (Emeritus)

#### Assistant Professors

Amy Gonzales, Julien Mailland, Nicole Martins, Andrew Weaver, Paul J. Wright

## Director of Graduate Studies

Harmeet Sawhney\*, Radio-TV Center Room 325,  
(812) 855-0954

## Courses

**TEL-T 501 Philosophy of Inquiry in Telecommunications (3 cr.)** Entry-level comparative study of the origin and development of dominant paradigms applied to telecommunications by researchers and policy makers.

**TEL-T 502 Introduction to Research Methods in Telecommunications (3 cr.)** Introduction to quantitative and qualitative research methodologies used in telecommunications.

**TEL-T 503 Telecommunications Theory (3 cr.)** Introduces students to the wide range of social scientific theories that guide research in telecommunications.

**TEL-T 505 Media Organizations (3 cr.)** Introduces students to the production, financing, marketing, and management of media from an organizational perspective. The goal is to prepare students to work in a changing media environment.

**TEL-T 510 Research Methods in Message Analysis (3 cr.)** Methods of analyzing the content of mediated messages. Applications of content analysis techniques to research projects involving new or traditional media.

**TEL-T 511 Research Methods in Audience Analysis (3 cr.)** Analysis of audience characteristics and behaviors. Emphasizes methods associated with the assessment of, and audiences for, the electronic media.

**TEL-T 512 Communication and Politics (3 cr.)** Social scientific theories of political message effects and normative models of media and democracy. Analysis of political advertising, campaign communication, civic participation, and the role of new media in politics.

**TEL-T 521 Telecommunications Management (3 cr.)** Theories of personnel and systems management applied to the technology-based consumer media of broadcasting, cable, voice, and network access providers. Considers broad issues of programming, infrastructure, finance, competition, corporate and industry structure, budget, and regulations.

**TEL-T 522 Managing the Creative Process (3 cr.)** Examination of the business side of video production with emphasis on the role of the producer and/or production manager, including production team organization, schedules, budgets, contracts, markets, and intellectual property.

**TEL-T 530 Legal Environment of Telecommunications (3 cr.)** P: T504 or consent of instructor. Analysis of laws and policies affecting the telecommunications industry and its consumers. Regulation of broadcasting, cable television, telephony, and the Internet. Introduction to First Amendment aspects of telecommunications and to antitrust and intellectual property law.

**TEL-T 532 Economics of the Media Industries (3 cr.)** Application of economic principles to policy and strategy issues in the print, online, broadcasting, multichannel, home video, and motion picture industries.

**TEL-T 535 Economics of Information (3 cr.)** The production, distribution, and pricing of information products and services; intellectual property and new technologies; information networks and compatibility. Policy and strategy applications.

**TEL-T 540 Special Projects in Telecommunications (1-3 cr.)** P: Consent of project advisor and Director of Graduate Studies. Individual readings or production projects in telecommunications.

**TEL-T 551 Communication, Technology, and Society (3 cr.)** Research seminar to consider the impact of new technologies on society and how the development and structure of information and communication technologies have been influenced by society. Theories of technology at the social level of analysis.

**TEL-T 552 Cognitive Approaches to Media (3 cr.)** Examines the information processing of mediated messages and theories underlying memory, attention, and cognition. Advanced analysis of cognitive psychology and emotion theory as they apply to the study of media.

**TEL-T 560 Business Strategies of Communication Firms (3 cr.)** Case studies in marketing and competitive strategies of media and telecommunications firms. Effects of technological change on industry structure and strategy.

**TEL-T 570 Art, Entertainment, and Information (1-3 cr.)** Introduces students to the idea of information as art and as entertainment through readings and multimedia experience. Students will learn basic tools of multimedia design, interactive programming, digital paint and draw tools, and 3-D software.

**TEL-T 571 Applied Cognitive and Emotional Psychology (3 cr.)** Introduces students to basic theories in cognitive and emotional psychology and focuses on how these theories could be applied to the design of immersive mediated environments.

**TEL-T 575 Directed Group New Media Design Project (3 cr.)** P: Consent of Instructor and Director of Graduate Studies. Group project in new media design. Each class will develop, design, and implement a new media project.

**TEL-T 576 New Media Production (3 cr.)** P: Application for authorization, approval of instructor and Director of Graduate Studies. Open to graduate students only. Training in traditional and new media production including utilization of new media software packages. In addition to production training, completion of a critical assessment paper in an area of production. T576 and T577 combined may not exceed 6 credits. May be repeated for 6 credits.

**TEL-T 580 Interactive Storytelling and Computer Games (2 cr.)** Students work in teams to develop interactive stories and games using graphics, animation, sound, and text.

**TEL-T 583 Teaching Electronic Media Production (2 cr.)** P: Consent of instructor. Graduate students review and refine basic production skills in preparation for teaching positions. Basic media production concepts, techniques, and hands-on training. Prior understanding of the production process is expected.

**TEL-T 585 Interactivity and New Media (3 cr.)** Theoretical and applied perspectives on interactive communications. Surveys the literature of interactivity

and new media, examining relevant concepts such as parasocial interaction, entertainment education, and remediation. Social and psychological consequences of interactivity.

**TEL-T 597 Internship (0-3 cr.)** P: Consent of faculty advisor and Director of Graduate Studies. Supervised internship in telecommunications, electronic media, or multimedia design.

**TEL-T 600 Proseminar in Telecommunications Research (1 cr.)** Introduction to current telecommunications research through the work of departmental members and visiting scholars. May be repeated for 1 credit each semester up to four semesters.

**TEL-T 601 Topical Seminar in Telecommunications Technology and Policy (1-3 cr.)** P: Consent of instructor. May be repeated for credit.

**TEL-T 602 Topical Seminar in Telecommunications Processes and Effects (1-3 cr.)** P: Consent of instructor. May be repeated for credit.

**TEL-T 603 Topical Seminar in Telecommunications Management (1-3 cr.)** P: Consent of instructor. May be repeated for credit.

**TEL-T 605 Seminar in Immersive Mediated Environments (1 cr.)** Introduction to current research in immersive mediated environments such as virtual reality, telepresence, and new media entertainment through the work of faculty members from Indiana University and visiting scholars. May be repeated for a maximum of 4 credit hours.

**TEL-T 610 The Networked Society (3 cr.)** Analysis of the social, economic, and cultural forces that have set in motion the rise of the networked society. The conceptualization and creation of large-scale networks; new modes of organization.

**TEL-T 629 Telecommunications Policy Making (3 cr.)** P: T504 or consent of instructor. Models and theories of telecommunications policy making in the United States. Analysis of selected contemporary policy issues and controversies.

**TEL-T 635 Comparative Telecommunications Policy (3 cr.)** P: T504 or consent of instructor. Comparison of telecommunications policy and policy making in the United States with the policies and policy systems of other nations and of international and transnational organizations.

**TEL-T 641 Children and Media (3 cr.)** P: T503 or equivalent. Detailed examination of theoretical orientations and research specifically focused on children and media.

**TEL-T 642 Communication Campaigns (3 cr.)** Study of public communication campaigns, emphasizing the role of media in influencing attitudes and behavior related to social issues.

**TEL-T 650 Telecommunications and the Constitution (3 cr.)** P: T504 or consent of instructor. Impact of the constitution of the United States on telecommunications law and policy, the telecommunications industries, and the public. Emphasis on the First Amendment. Analysis of the Supreme Court as a telecommunications policy making institution.

### **TEL-T 800 Thesis: Telecommunications (1-6 cr.)**

P: Consent of instructor. This course is eligible for a deferred grade.

**GRAD-G 741 Ph.D. Research in Mass Communications (arr. cr.)** P: Consent of instructor. This course is eligible for a deferred grade.

**TEL-T 504 Introduction to Telecommunications Policy Studies (3 cr.)** Introduction to the graduate level study of telecommunications law and policy and its intersection with economics and technology. Fundamental principles and theories of telecommunications law, policy, and policy-making. Methodological approaches.

**TEL-T 577 New Media Design (3 cr.)** P: Application for authorization, approval of instructor and Director of Graduate Studies. Open to graduate students only. Training in conceptualization and design of new media, including actual production at the prototype level. In addition, completion of a paper that applies design theories to the project work undertaken in the class. T576 and T577 combined credit may not exceed 6. May be repeated for up to 6 credits.

**TEL-T 604 Topical Seminar in Media and Society (1-3 cr.)** P: Consent of Instructor. May be repeated for credit.

## **Theatre, Drama, and Contemporary Dance**

**College of Arts and Sciences**

**Departmental E-mail:** [theatre@indiana.edu](mailto:theatre@indiana.edu)

**Departmental URL:** <https://theatre.indiana.edu/index.html>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### **Curriculum**

#### **Degrees Offered**

Master of Fine Arts. Not currently accepting applications for Master of Arts and Doctor of Philosophy.

#### **Special Departmental Requirements**

(See also general University Graduate School requirements.)

#### **Admission Requirements**

Undergraduate major in the field or other evidence of adequate background. Deficiencies may be removed by course work or special examination. For M.A. and Ph.D. candidates, the Graduate Record Examination (GRE) General Test is required; non-native speakers of English are also required to have minimum TOEFL scores of 600 for the paper test, 250 for the computer-based test, and 100 for the Internet-based test. The GRE General Test is not required for M.F.A. applicants, but non-native speakers who are working on this degree must meet the University Graduate school minimum TOEFL scores of 550 (paper), or 213 (computer-based), or 80 (Internet-based). M.F.A. applicants are required to audition, interview, or submit examples of appropriate work for evaluation. For more detailed information on

the application and admission process, please see the Department of Theatre, Drama, and Contemporary Dance Web site.

### **Master's Degrees** **Master of Arts Degree** **Course Requirements**

A total of 30 credit hours, of which 15 credit hours must be in departmental courses numbered 500 and above, including T500; maximum of 5 credit hours in T895. Up to 10 credit hours may be taken in an allied field or area of specialization in another department.

#### **Language Requirement**

Ability to translate scholarly material on theatre from one foreign language.

#### **Master's Essay**

A student may satisfy the master's essay requirement in one of three ways:

1. By submitting a suitable term or seminar paper, revised to the satisfaction of a two-member faculty committee,
2. By writing an original master's essay not based on any previous paper, or
3. By writing a formal master's thesis (maximum of 5 credit hours in T895).

#### **Examination**

A written examination on the M.A. reading list in dramatic literature, theory, and theatre history. The examination may be repeated once.

### **Master of Fine Arts Degree** **Special Requirements**

Applicants must provide evidence of a high degree of technical skill and creative ability in the area of special interest. At the end of each semester in residence, the student's skill and creative ability will be evaluated as evidenced by work done in the Department of Theatre, Drama, and Contemporary Dance. Only students who have clearly demonstrated growth and excellence will be permitted to remain in the program.

#### **Course Requirements**

A minimum total of 60 credit hours of graduate work, with an emphasis in one of the following areas: acting, directing, dramaturgy, playwriting, scenic design, lighting design, costume design, costume technology, or theatre technology (certain emphases within the MFA degree require more than 60 hours). The 60 credit hours will include 3 credit hours in the study of resources and materials in the student's area of special interest and not fewer than 6 credit hours in the area of theatre history, dramatic theory, and dramatic literature. When appropriate, up to 12 credit hours (15 credit hours in costume design) may be taken in an allied field in another department. A maximum of 10 credits may be taken in M.F.A. thesis. For each Master's in these academic programs, a faculty advisor individually prescribes a minimum of 24 credits of courses which the student must complete in the specific major. The distribution of course work will be determined by the student and advisor. A minimum of four semesters or equivalent summer

sessions must be spent in residence on the Bloomington campus.

#### **Production Thesis**

Required.

#### **Examination**

Oral defense of the thesis.

### **Doctor of Philosophy Degree** **Course Requirements**

A total of 90 credit hours, of which 50-60 must be in the major field, including 30 credit hours of courses numbered 500 or above, at least 6 credit hours in advanced seminars, and 15 credit hours of dissertation.

#### **Minor**

Approximately 15 credit hours within another department in an area related to drama and theatre.

#### **Other Provisions**

To demonstrate an acquaintance with the tools, techniques, and reporting of theatre research, all Ph.D. students are expected (a) to have written a research thesis at the master's level (if not, a term paper or other evidence of research writing skill should be submitted); (b) to have taken a graduate-level course in research methods (if not, T500 must be taken in the first year of residence); and (c) to show an ability to translate scholarly material on theatre from two languages, usually selected from French, German, Russian, Italian, and Spanish. Consult the director of graduate studies for specific details and approval of language selections.

#### **Examinations**

Four comprehensive oral examinations (theatre before 1500, 1500-1800, 1800-1915, and 1915-present), and a qualifying examination (written and oral) in one specific area projected for dissertation investigation. Comprehensives may be taken individually, in any order, and at any time acceptable to both student and faculty. The qualifying examination may be taken only when all course work and language requirements have been completed. A representative from the student's minor field will be invited to participate in the qualifying examination. The student will be denied further participation in the doctoral program upon failing the qualifying examination twice.

#### **Faculty**

##### **Chairperson**

Linda Pisano

##### **Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

##### **Professors**

Ray Fellman, Andrew Hopson, Jonathan R. Michaelsen, Linda Pisano, Elizabeth Limons Shea

##### **Associate Professors**



Beatrice Capote, Selene Carter, Allen Hahn, Nancy Lipschultz, Reuben Lucas, Tanya Palmer, Ansley Valentine

### Assistant Professors

Leraldo Anzaldúa, Lauren Haughton Gillis, Eric Mayer-Garcia, Heather Milam, Eleanor Owicki\*, Richard Roland

### Visiting Assistant Professors

Jeff Baldwin, Robert Burden, Diane Grisanti, Jason Orlenko

### Professors of Practice

Stafford C. Berry, DJ Gray, Terry LaBolt, Jenny McKnight

### Lecturers

Jennifer Lale

### Faculty Emeriti

Leon Brauner\*, Winona Fletcher\*, Roger W. Herzel\*, Dale McFadden, Marion Bankert Michael, R. Keith Michael\*, Wesley Peters, George Pinney, Dennis Joseph Reardon, Robert A. Shakespeare, Frank Silberstein, Rakesh H. Solomon\*, Ronald H. Wainscott\*

### Director of Graduate Studies

Heather Milam, Theatre Building A300

## Courses

### Required during the first term of residence:

- **THTR-T 500 Introduction to Graduate Study (1.5 cr.)**

### Acting/Directing

- **THTR-T 442 Directing II: Advanced Directing (3 cr.)**
- **THTR-T 443 Directing III: Directing Style (3 cr.)**
- **THTR-T 504 Stage Combat (3 cr.)** Complete basic training in the safety techniques of theatrical and film violence, based upon the accepted practices and principles founded by the Society of American Fight Directors and other internationally recognized stage combat organizations. Emphasis placed on acting the fight, storytelling, and historical armed and unarmed combat.
- **THTR-T 510 Advanced Movement for the Theatre I (3 cr.)** P: Consent of instructor. Movement training for graduate actors and directors with an emphasis on physical conditioning, exploration of the Michael Chekhov technique, Laban, Lecoq, dramatic acrobatics and improvisation utilizing the physical self or "the body as text."
- **THTR-T 511 Advanced Movement for the Theatre II (3 cr.)** P: T510. A continuation of T510. Second semester.
- **THTR-T 513 Musical Theatre Dance Styles I (3 cr.)** P: Consent of instructor. Dance styles of the 1920s through the 1950s will be explored and performed, including the choreographers Fred Astaire, Hermes Pan, Agnes de Mille, Jerome Robbins, and Gower Champion. Graduate students will be required to

write a research paper within the context of the course's historical content and present results to the class.

- **THTR-T 514 Musical Theatre Dance Styles II (3 cr.)** P: Consent of instructor. A continuation of Musical Theatre Dance Styles I, dance styles of the 1950s through present day will be explored and performed, including the choreographers Bob Fosse, Michael Bennett, Bob Avian, and Susan Stroman. Graduate students will be required to write a research paper within the context of the course's historical content and present results to the class.
- **THTR-T 516 Musical Theatre Showcase (3 cr.)** P: Audition and consent of instructor. A professional course to better develop audition techniques, understanding of the business of show business, performance skills, and to showcase for agents and casting directors. Graduate students will be required to write a research paper within the context of the course's historical content and present results to the class.
- **THTR-T 520 Studies in Acting I (3 cr.)** P: Consent of instructor. History and analysis of major theories of acting.
- **THTR-T 521 Studies in Acting II (1-3 cr.)** P: Consent of instructor. Application of major theories of acting to performance. May be repeated for a maximum of 9 credits.
- **THTR-T 522 Studies in Acting III (1-3 cr.)** Analysis of script; application of vocal and physical techniques of characterization to various forms and types of drama. May be repeated for a maximum of 9 credits.
- **THTR-T 525 Voice for the MFA I (3 cr.)** P: Exploration of voice, body, and breath connection employing the techniques of Patsy Rodenburg and other recognized voice pedagogy. Examines works of Elizabethan metaphysical poets as a foundation for Shakespeare. Begins second circle awareness by working on various Greek plays.
- **THTR-T 535 Voice for the MFA II (3 cr.)** P: T525. An exploration of two full Shakespeare plays employing second circle work developed by Patsy Rodenburg. Plays to be determined by instructor.
- **THTR-T 542 Theories of Directing (3 cr.)** P: Consent of instructor. History and analysis of major theories of directing. Lecture and practical projects.
- **THTR-T 543 Studies in Directing II (3 cr.)** P: Consent of instructor. Practical problems in directing significant plays of diverse forms and styles. May be repeated for a maximum of 9 credits.
- **THTR-T 545 Voice and Dialects (3 cr.)** P: Consent of instructor. Training for the professional actor that focuses on combining imagery and imagination with the development of vocal technique through exercises in breathing, producing the sound resonance; the mastery of four of the most common dialects used in the American theatre.
- **THTR-T 610 Advanced Movement for the Theatre III (3 cr.)** P: T510 & T511. A continuation of T510 &



T511. Training continues for second year graduate actors by integrating physical improvisation via the Michael Chekhov technique, Grotowski, Laban, Lecoq, and psycho/physical states to provide actors with more tools for physical expression in character, self, and ensemble.

- **THTR-T 611 Advanced Movement for the Theatre IV (3 cr.)** P: T510, T511, T610. A continuation of T510, T511 & T610. Training continues in the second year spring semester. Utilization of deeper techniques of psycho/physical work to further integrate the imagination and physical expression of the actor. Detailed and creative physical self and group analysis of actor mannerisms and habits.
- **THTR-T 625 Second Year Voice for the MFA I (3 cr.)** P: T535 Emphasis on the examination of structure in scene work and how the structure of text frees the student to speak and communicate thought. Revisiting of the IPA and dialects for the stage through rhythm and placement of vocal focus. Techniques: Meier and David Alan Stern.
- **THTR-T 635 Second Year Voice for the MFA II (3 cr.)** P: T625. Continued work with dialects. The course is designed to find the organic side of dialect work and to investigate how consistent dialect allows the listener to enter the world of the play. The emphasis is the creation of a relationship between form and content.
- **THTR-T 710 Advanced Movement for the Theatre V (3 cr.)** P: T510, T511, T610, T611. The culmination of the M.F.A. Acting graduate movement progression. Honoring all of the physical work done in the first two years of training, actors deepen their understanding and expression of the physical self through transformative performance pieces.
- **THTR-T 720 Internship in Acting (3-9 cr.)** Internship in a professional theatre for one semester or equivalent period of time. May be repeated for a maximum of 9 credit hours.
- **THTR-T 721 Working in the Profession (1 cr.)** Covers the business side of the entertainment industry from the perspective of the artist. Projects include theatrical and non-theatrical resumes, branding, social media, marketing, unions, personal finances, supplemental/survival jobs, networking, and professional websites.
- **THTR-T 723 Graduate Acting for the Camera (2 cr.)** Restricted to the Theatre & Drama M.F.A. program. Exploration of the fundamentals of acting for the camera designed to develop students' on-camera acting skills.
- **THTR-T 725 Third Year Voice for the MFA I (3 cr.)** P: T635. Establishing a strong vocal process and foundation for the graduate student to take into professional acting work. An understanding of the fundamentals of voice techniques, including breath, connection and use of emotional release giving the student strong process for text analysis by looking at poetic as well as contemporary texts.
- **THTR-T 735 Third Year Voice for the MFA II (3 cr.)** P: T725. Dealing with vocal release and breath

in the audition process. Examining physical and vocal stamina through a long run in the professional theatre and dealing with voice strain in different theatre spaces, including outdoor theatre.

### Design/Technology

- **THTR-T 433 Costume Design II (3 cr.)**
- **THTR-T 438 Advanced Stage Lighting (3 cr.)**
- **THTR-T 502 Theatre Design and Technical Research Methods (1.5 cr.)** P: T500 (S/F grading) Reading, discussion, and use of computer for scenic, costume, lighting, and technology research. Exploration of commercial software used in developing and communicating each discipline's products.
- **THTR-T 505 Design Research and Collaboration I (1-3 cr.)** Development of skills necessary for successful theatre productions, especially collaboration, research, communication (graphic and verbal), and presentation.
- **THTR-T 506 Fundamentals of Scenic Design (3 cr.)** A studio course in the theory, process, and techniques of scenic design for the theatre. Topics include principles, elements, and concepts of design; script analysis; design concept development; creative research and its interpretation; and the communication and presentation of theatrical ideas.
- **THTR-T 508 Introduction to Flat Patterning (3 cr.)** Introduces and develops costume patternmaking skills. Teaches the process for drafting basic slopers (bodice, sleeve, skirt, collars) using individual measurements. Explores the manipulation techniques to alter slopers to achieve individual design elements.
- **THTR-T 509 Introduction to Draping (3 cr.)** Introduction to draping will develop costume draping skills. The course will teach basics and apply it toward exploring effective communication between the costume technician and costume designer. The examination of costume sketches, research and photos will enhance the student's ability to interpret and create accurate and acceptable costumes.
- **THTR-T 517 Rendering I (3 cr.)** The first of a two-semester course, an in-depth, advanced study into rendering costuming. In semester one, the focus is on drawing with a strong introduction into the media of watercolor.
- **THTR-T 518 Scenic Painting for the Stage (3cr.)** An introduction theatrical painting course specializing in the area of scenic textures and faux finishes. It will expose the student to the many different ways to texture, paint and finish scenery for the stage.
- **THTR-T 523 Costume and Character in London Theatre (3 cr.)** Overseas theatre studies in London. Experience theatrical character development through costume design. Survey social influences on costume and dress worn by characters through history, including contemporary trends and dress. Field trips to Bath and Stratford.

- **THTR-T 524 Theatrical Rendering and Model Building (3 cr.)** A skills-based studio course with a concentration on theatrical rendering and model building techniques, craft, media; and visual communication.
- **THTR-T 526 Advanced Scenic Design I (3 cr.)** P: T426 and permission of instructor. A graduate level studio course in the theory, process, and techniques of scenic design for the theatre. Topics will include script analysis; design concept development; creative research and its interpretation; and the communication and presentation of theatrical ideas. Particular emphasis is placed on design for specific theatre architecture
- **THTR-T 527 Theatre Planning (3 cr.)** P: Consent of instructor. Function and design of theatre plans with attention to needs of audience and theatre personnel.
- **THTR-T 528 Studies in Stage Scenery (1-3 cr.)** P: T526 or consent of instructor. Selected problems in designing stage scenery; composition and style. May be repeated for a maximum of 9 credits.
- **THTR-T 529 Studies in Theatre Technology (1-3 cr.)** P: Consent of instructor. Selected problems in scenery engineering, stage machinery, problem-solving, technical management, estimation and planning, and design and execution of advanced projects. May be repeated to a maximum of 9 credits.
- **THTR-T 530 Advanced Costume Design Aesthetics (3 cr.)** Intensive study of costume design and application of design principles. Students will produce projects in various genres. Theatre, opera, ballet, and musical theatre are just some of the forms surveyed. Students work in a collaborative design arena that emulates the process for whichever genre they are designing in.
- **THTR-T 531 Costume Technology II (3 cr.)** Provides a strong base in costume construction techniques for incoming graduate students. It provides a foundation of sewing, craft, fitting, and patternmaking techniques as well as training in team management from which the students may develop a construction project and perform assignments including supervisory roles in production work.
- **THTR-T 532 Design for Television and Film (3 cr.)** P: Permission of instructor. Design based studio class in Production Design for Film and Television. Working from original scripts written specifically for the course, concepts include research, interpretation, and industry standard presentation techniques.
- **THTR-T 533 Studies in Stage Costuming (1-3 cr.)** P: T430 and T433 or consent of instructor. Selected problems in costume materials and methods, costume design and historic fashion; application to styles and forms of theatrical production. May be repeated for a maximum of 9 credits.
- **THTR-T 534 Historic Costumes for the Stage (3 cr.)** P: Permission of instructor. Survey of historical costume in western civilization, ancient Mesopotamian cultures through the Twentieth Century. Taught from a socio-historical perspective and applied to performance theory.
- **THTR-T 536 Electronics for Theatre (3 cr.)** Rudiments of electricity and electronics as applied to theatre. Investigation of current technology for theatrical performance, including power distribution, control systems, and creative applications for lighting, sound, special effects, and mechanized scenery.
- **THTR-T 537 Fundamentals of Costume Design (3 cr.)** Intensive study of costume design in mainstream theatre. Projects in collaborative aesthetics in design and practical application, rendering techniques, and visual communication. No laboratory/technology component.
- **THTR-T 538 Studies in Stage Lighting (1-3 cr.)** P: T546, or a previous T538, or permission of instructor. Variable topics course focusing on lighting genres, techniques, and criticism. Topics include architectural lighting, lighting consulting for the theatre, stage lighting aesthetics, and rendering light. May be repeated for a maximum of 12 credits.
- **THTR-T 539 Fundamentals of Theatrical Drafting (3 cr.)** A studio course consisting of both traditional hand drafting techniques and digital CAD techniques as they are used in theatrical production communication.
- **THTR-T 540 Structural Design for the Stage (3 cr.)** P: Permission of instructor. Structural concepts of static mechanics and strengths of materials with focus on the ability to critically analyze and design efficient structures specific to theatre and performing arts applications.
- **THTR-T 541 History of Decor (3 cr.)** A survey course examining the trends in architecture, painting, sculpture, furniture, and decorative motifs. The student will gain a distinction of periods while building an historic time line for use in theatrical design.
- **THTR-T 544 Historic Costume II (3 cr.)** P: T534. Second half of the costume history curriculum; a survey of Western costume from Late 17th Century Europe through current day. Focuses on historical costume as it relates to the society and period in which it lived and its relevance to designing for the performing arts.
- **THTR-T 546 Stage Lighting Design (3 cr.)** Stage lighting design concept development, presentation, and implementation are emphasized. Advanced lighting techniques and approaches. A practicum will be assigned.
- **THTR-T 547 Sound Design I (3 cr.)** P: T347 or permission of instructor. Study of the practical use, aesthetics, and implementation of sound in theatre productions. Focus is on using computers to assist in the creation, selection, and playback of sound cues. Topics include sound system operation and design for both plays and musicals. Emphasis on researching, selecting, and recording music for production.

- **THTR-T 549 Production and Event Management (3 cr.)** Discussion of the skills necessary to produce and manage theatrical productions, and the application of those skills to large events.
- **THTR-T 551 Stage Rigging I (1 cr.)** Stage Rigging I is a survey of structural engineering terminology and methods as applicable to common rigging practice in the theatre and entertainment industry.
- **THTR-T 552 Stage Rigging II (1 cr.)** Rigging II is a hands-on type course. This class is intended to familiarize the student with the operation and maintenance of typical rigging equipment. Class work includes counterweight systems operations, pin-rail operations, rope and knot basics, wire-rope basics, chain hoist basics, and arena-type rigging basics.
- **THTR-T 554 Period Costume Construction 15th–17th Centuries (3 cr.)** P: T531 or permission of instructor. Focuses on the patterning, fit, and construction of undergarments and costumes from the 15th-17th centuries. Enhances knowledge and understanding of period construction techniques. Teaches appropriate period research; both documentary and visual research will be examined and utilized.
- **THTR-T 560 Understructures for Historical Garments (3 cr.)** P: T430 or T531. Students will learn about the various understructures of dress from 1500-1900, including materials and techniques of construction. Students will create, as a final project, an ensemble of understructures from a specific piece of research.
- **THTR-T 561 Period Patternmaking and Construction (3 cr.)** P: T430 or T531. Students will learn about the various patternmaking techniques and shapes of women's garments from 1500-1920. Students will create, as a final project, an ensemble based on specific research.
- **THTR-T 562 Men's Tailoring (3 cr.)** P: T430 or T531. Students will learn to draft, construct, and fit a man's suit for a model, as well as understanding basic men's fashion guidelines in historical detail.
- **THTR-T 564 Pro Tools for Theatre and Music (3 cr.)** P: MUS-A100 or THTR-T347 or THTR-T447. This course introduces the recording and editing software Pro Tools for use in theatre sound design and music production.
- **THTR-T 585 Theatre Management (3 cr.)** Problems in managing a theatre: selection of plays, special programming, business operations, promotion, public relations. Lecture and practical projects.
- **THTR-T 586 Studies in Stage Management (3 cr.)** An examination of the stage management requirements and regulations for non-standard production styles. Each year the topic varies and may include spectacle, theme park, festival, or other large scale entertainment. On site observation and experience is a key portion and requirement of the course.
- **THTR-T 587 Advanced Entertainment Technology I (3cr.)** The analysis of technology for live events, emphasizing stage machinery, through the principles of physics, mechanical design, risk assessment, and entertainment standards and practices. Emphasis on moving scenery through historic and modern approaches, mechanical systems, and mathematical modeling to predict mechanical performance.
- **THTR-T 591 Introduction to Stage Properties (3 cr.)** Covers the basics of running a properties shop. Students will learn script analysis for props; making lists; communication with stage management, designers, and technical personnel; budget breakdowns; and using local resources for the build/buy/borrow/pull process of properties production.
- **THTR-T 592 Advanced Stage Properties (3 cr.)** Course covers advanced techniques, skills, tools, and methodology in constructing props as well as discussing how to manage prop lists and budgets on operas, musicals, dance, and touring shows.
- **THTR-T 604 Portfolio Seminar for Costume Designers (1 cr.)** Prepares students to consider, evaluate, and state academic and professional goals, as well as learning how to develop portfolio content and outlines, preparing both digital and hard copy portfolios along with resumes for summer employment and internships. To be taken in all three years of the MFA costume design degree.
- **THTR-T 605 Portfolio Seminar for Costume Technology (1 cr.)** This course will guide students as they prepare to apply for summer and long term jobs. It will address job searching, cover letters, resume, portfolio preparation and website development. This course is for students in the Costume Technology M.F.A. program.
- **THTR-T 607 Advanced Draping (3cr.)** Advanced development of costume draping skills, effective communication, and examination and evaluation of sketches, research and photos for draping replication. Exploration of irregular three dimensional shapes and use of unusual fabrics.
- **THTR-T 608 Advanced Patterning (3cr.)** Further development of costume patternmaking skills. Explores advanced pattern development techniques to achieve complicated, unique design elements. Covers computer patterning and explores communication and manipulation via the computer.
- **THTR-T 617 Rendering II (3 cr.)** Semester two provides an in-depth, advanced study into rendering. Here the focus is on developing and mastering proficiency in multimedia for the costume designer, including but not limited to pencil, ink, marker, digital, and collage.
- **THTR-T 626 Advanced Scenic Design II (3 cr.)** P: T526. An MFA capstone studio course in the theory, process, and techniques of scenic design for the theatre. Design projects include non-theatrical venues and diverse areas of the entertainment industry. Portfolio quality presentation is expected.
- **THTR-T 630 Millinery (3cr.)** A foundation in the techniques and design of millinery and headwear

as an important part of developing character and establishing time, culture, and social class. The course will cover several major materials and problems faced by the professional milliner in the performing arts.

- **THTR-T 631 Mask Design and Construction (3cr.)** Introduction to mask-making for performances, covering materials and methods of construction. Experimentation encouraged to test the limitations of materials and process. Focus on making masks wearable and usable by performers on stage, and usable in rehearsal for creating character and believability. Includes research into the history and styles of masks.
- **THTR-T 632 Fabric Modification (3 cr.)** P: T531 or permission of instructor. Focuses on a wide variety of fabric modification methods, primarily using dyes, chemicals, and physical distressing techniques. Dyeing with different classifications of dyes and covering techniques such as: color matching, shibori, rusting, felting, batik, fabric painting, and/or distressing methods.
- **THTR-T 633 Special Topics in Costume Technology (3 cr.)** P: T531 or permission of instructor. Focuses on special methods of physical and chemical alterations of fabric for use on the stage or screen. Specific topics and methods may vary.
- **THTR-T 634 Costume Design for Opera & Ballet (3cr.)** Advanced study of designing costumes for opera and ballet. Intensive project work in the research and illustration of designs using both traditional and non-traditional approaches to costume design. Students develop several comprehensive portfolio-worthy projects demonstrating skills mastered in designing for opera and ballet.
- **THTR-T 636 Patternmaking for Menswear/Tailoring 2 (3cr.)** Exploration of patterning for menswear, and fitting and altering a tailored garment. Various historical tailoring systems will be examined and used. We will pattern and construct a properly made shirt, suit pants, and vest.
- **THTR-T 637 Dancewear Construction (3cr.)** Teaches the construction of dancewear as needed for classical and modern dance.
- **THTR-T 638 Teaching Costume Construction to Undergrads (3cr.)** P: T531 or permission of instructor. Provides mentorship and guidance for a first time teacher. Prepares the new teacher to become an effective instructor through the topics of syllabus development, rubric development, how to lecture, how to demonstrate, how to grade and how to mentor students.
- **THTR-T 639 Advanced Theatrical Drafting (3 cr.)** Advanced course in drafting methods, skills, and the specialized uses for theatrical drafting for productions. Mastery of students' graphic communication through standard theatre drafting methods.
- **THTR-T 644 Fabric Science and Textile History (3cr.)** Study of fibers, fabrics and textile characteristic, history and development.
- **THTR-T 646 Lighting Design Seminar (3cr.)** Development of a lighting designer's critical experience with color, timing, volumetric space, lateral thinking, and creativity are addressed in successive semesters in this project-based course, heavy on critique. With these supporting skills, the designer's work in production can be conducted with greater confidence and assurance of a successful outcome.
- **THTR-T 650 Lighting Design in Production (3cr.)** Lighting designers can only practice their craft by building and executing it in time and space. This course gives them the opportunity to be evaluated for that work through a dialogue-based faculty-guided process from conceptualization, through development and technical rehearsals to opening night.
- **THTR-T 654 Period Construction 18th-19th Century (3cr.)** P: T531 or permission of instructor. Focuses on the patterning, fit, and construction of undergarments and costumes from the eighteenth and nineteenth centuries. Enhances knowledge and understanding of period construction techniques. Teaches appropriate period research methods; both documentary and visual research will be examined and utilized.
- **THTR-T 687 Advanced Entertainment Technology 2 (3cr.)** Design and application of industrial machinery to live events, with emphasis on artistic applications of modern mechanical and control methods and systems. Entertainment Engineering approaches to mechanical systems, and current live event standards and practices will be applied to several class projects and may include realized stage applications.
- **THTR-T 705 Design Research and Collaboration II (1-3 cr.)** Further study of the principles of group collaboration, concept development and skills in assessing and productively working through challenges in the design and technology processes.

#### History/Theory/Literature

- **THTR-T 460 Development of Dramatic Art I (3 cr.)**
- **THTR-T 461 Development of Dramatic Art II (3 cr.)**
- **THTR-T 462 Development of Dramatic Art III (3 cr.)**
- **THTR-T 468 Asian Performance (3 cr.)**
- **THTR-T 501 Introduction to Historiography (1.5 cr.)** P: T500. (S/F grading) Reading and discussion of current historiographical problems and methods particular to research and scholarly reporting in theatre history, theory, and literature.
- **THTR-T 503 Pedagogy for the Theatre (1.5 cr.)** P: Permission of department. Introduces Theatre, Drama, and Contemporary Dance graduate students to the skills, philosophies, and best practices of teaching theatre in higher education. Prepares

students to serve as Associate Instructors while at IU and to teach at the university level after they graduate.

- **THTR-T 550 Structure of Drama (3 cr.)** Theory and structure of drama, based upon intensive reading of Aristotle's *Poetics* and other critical writings.
- **THTR-T 555 Theories of Theatre and Drama I (3 cr.)** Survey of major theoretical and critical works. Greeks to c. 1890.
- **THTR-T 556 Theories of Theatre and Drama II (3 cr.)** Survey of major theoretical and critical works. 1890 to the present.
- **THTR-T 563 Forms and Styles in Modern Theatre and Drama (3 cr.)** Study of plays in relation to such styles as realism, naturalism, expressionism, and absurdism.
- **THTR-T 565 American Drama and Theatre I (3 cr.)** Beginnings to 1890. Either semester be elected independently.
- **THTR-T 566 American Drama and Theatre II (3 cr.)** 1890 to the present. Either semester may be elected independently.
- **THTR-T 567 European Drama from Molière to Ibsen (3 cr.)** Representative French, German, Italian, and Russian plays.
- **THTR-T 568 Ibsen and Strindberg (3 cr.)** Intensive study of the major plays of Ibsen and Strindberg.
- **THTR-T 570 Studies in Classical and Medieval Theatre (3 cr.)** Concentrated study of Greek, Roman, and medieval theatre.
- **THTR-T 571 Studies in Renaissance and Baroque Theatre (3 cr.)** Concentrated study of significant figures, practices, and dramas in the European theatre from 1500 to 1800.
- **THTR-T 572 Studies in Romantic and Realistic Theatre (3 cr.)** Concentrated study of European and American theatre from 1800 to 1915. Emphasis on romanticism, realism, and the reactions to realism.
- **THTR-T 573 Studies in Modern and Contemporary Theatre (3 cr.)** Concentrated study of significant practices, trends, and figures in the European and American theatre from 1915 to the present.
- **THTR-T 574 Dramaturgy Seminar (3 cr.)** Examines the history of dramaturgy and its relation to dramatic criticism and theory. Offers strategies for sparking dramaturgical dialogue across disciplines and best practices for the creation of dramaturgical casebooks and contextualizing material for audiences. May be repeated three times.
- **THTR-T 662 Comparative Theatre and Drama: Melodrama (3 cr.)** The "third form" of drama, from melodramas of Euripides to tragicomedies and melodramas of modern television and motion pictures.
- **THTR-T 676 Civic Dramaturgy (3 cr.)** P: Graduate standing. In-depth study of history, practice, and

pedagogy of theatre for social change with the practical experience of facilitating the design of a community-driven theatre project.

- **THTR-T 750 Seminar in Structure of Drama (3 cr.)** P: T550, T555-T556 or equivalent. Projects in the analysis of different forms and types of drama. Each student is required to complete and report on a sequence of analytical interpretations of the structure of assigned plays.
- **THTR-T 765 Seminar in American Theatre and Drama (3 cr.)** Selected topics. May be repeated if the topic differs.
- **THTR-T 774 Seminar in Stage Interpretation of Selected Plays (3 cr.)** Study of selected plays through various periods; problems of interpretation and staging for present-day audiences. May be repeated if the topic differs.
- **THTR-T 775 Seminar in Theatre History (3 cr.)** Selected problems concerning theatres and staging methods in Europe in a restricted period. May be repeated if the topic differs.

### Playwriting

- **THTR-T 454 Playwriting Workshop (3 cr.)** P: T254 or permission of instructor. Prior playwriting experience helpful, but not required. Consideration of dramaturgical antecedents and practical and theoretical problems. Creation of a full-length play.
- **THTR-T 458 Screenwriting (3 cr.)** Structural analyses of cinematic models, culminating in the creation of an original full-length narrative screenplay.
- **THTR-T 557 Graduate Playwriting Seminar (3 cr.)** Primarily for students in the M.F.A. playwriting program. Graduate playwriting seminar in which playwrights study in-depth, the process, technique, and inspiration related to new play creation, development, and production.
- **THTR-T 558 Topics in Dramatic Writing (1-3 cr.)** Primarily for students of the M.F.A. playwriting program. In-depth study of special topics in dramatic writing, literature, and/or theory.
- **THTR-T 559 Studies in Playwriting (1-3 cr.)** P: Consent of instructor. This course is recommended for specialists only, most generally for graduate students pursuing an M.F.A. in playwriting who are working on the advanced development of original full-length play scripts and screenplays.

### Thesis and Special Courses

- **THTR-T 500 Introduction to Graduate Study (1-5 cr.)** may be repeated for a maximum of 6 cr. (S/ F grading) Methods and expectations of theatre research and script exploration in graduate study. Must be taken in the first terms of residency.
- **THTR-T 583 Topics in Theatre and Drama (1-3 cr.)** Studies in special topics not ordinarily covered in other departmental courses. May be repeated for credit if topic differs.



- **THTR-T 600 Directed Research (1-6 cr.)** P: T500 or equivalent and consent of instructor. Individual supervised research projects.
- **THTR-T 700 Independent Study (arr. cr.)** P: Consent of instructor and department chairperson. \*\*These courses are eligible for a deferred grade.
- **THTR-T 701 Readings in Theatre and Drama (arr. cr.)** \*\*These courses are eligible for a deferred grade.
- **THTR-T 895 M.A. Thesis (arr. cr.)** \*\*These courses are eligible for a deferred grade.
- **THTR-T 897 M.F.A. Thesis (arr. cr.)** \*\*These courses are eligible for a deferred grade.
- **THTR-T 899 Ph.D. Thesis (arr. cr.)** \*\*These courses are eligible for a deferred grade.

## Victorian Studies

### College of Arts and Sciences

Departmental E-mail: [victstu@indiana.edu](mailto:victstu@indiana.edu)

Departmental URL: [www.indiana.edu/~victstu/](http://www.indiana.edu/~victstu/)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Ph.D. Minor in Victorian Studies

The Ph.D. Minor in Victorian Studies trains students in the interdisciplinary study of Great Britain and the British world in the long nineteenth century, with a focus on literature, culture, and society. Coursework offers students an opportunity to become familiar with the aesthetic and historical developments of the period. It seeks, too, to acquaint students with the most current critical and methodological tools that are used to understand and critique the age and its works. The coursework for the Minor gives students a depth of knowledge in the history, literature, and culture of the nineteenth-century British world, while also offering them a breadth of understanding regarding the relevance of Victorian Studies to today's institutions of higher learning and the public sphere.

#### Course Requirements

The minor requires the completion of four courses, comprising a minimum of 12 credits, including VICT-V 611, the Program's core course. At least one of the courses must come from outside of the student's home department. Students must receive a grade of B+ or higher in all coursework. The Minor will be administered and approved by the Director of the Victorian Studies Program.

Students may wish, in choosing courses, to consult the class numbers listed below. Approval of coursework for the Minor is subject to a consideration of the actual content of various iterations of the courses in consultation with the program's Director.

ANTH-E649, E663, E682, E677, E678, E687, H500  
CMLT-C533, C535, C601, C602, C641, C643, C644,  
C645, C647, C649,

ENG-L627, L629, L637, L640, L641, L643, L644, L645,  
L646, L657, L671, L674  
FINA-A550, A580, A589, A590, A641, A642, A645, A674  
FOLK-E522, F540, F545, F635, F715, F730, F734, F740  
FRIT-F640, F647, M553, M605  
GER-G575, G623, G625  
HISP-S638  
HIST-H620, H630, H661, H680, H699  
HSPC-X507, X609  
ILS-Z521, Z532, Z584, Z581, Z652  
INST-I605  
NELC-N695, N701  
PHIL-P544, P743  
SLAV-R505, R506  
THTR-T567, T568, T572  
REL-R604, R630, R644, R652, R670, R672, R674, R675  
VICT-V611, V701, V711, V805

### Graduate Area Certificate in Victorian Studies

The Victorian Studies Program concentrates upon Great Britain during the reign of Queen Victoria, extending its attention in certain fields back into the last decades of the eighteenth century, up to the outbreak of World War I, and out into America, Continental Europe, and other areas in the nineteenth century. The program is open to all graduate students. Courses within the program are chosen from a range of offerings in the following departments or programs: Comparative Literature, Cultural Studies, English, Fine Arts, Folklore, Gender Studies, History, History and Philosophy of Science, Philosophy, and Victorian Studies.

### Course Requirements

16 credit hours in courses approved for the Victorian Studies Program, at least 4 of which must be in the Victorian Studies Program proper and 4 outside both the student's department and the Victorian Studies Program. Consult the chairperson of the program for courses outside of Victorian Studies that are acceptable for the certificate.

### Examination

Satisfactory performance in the departmental qualifying examinations required.

### Faculty

#### Chairperson

Professor Andrew H. Miller\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Distinguished Professor

Susan Gubar\* (Emerita, English)

#### Professors

Patrick Brantlinger\* (Emeritus, English), Sarah Burns\* (History of Art), Donald Gray\* (Emeritus, English), Andrew H. Miller\* (English), M. Jeanne Peterson\* (Emerita, History), Dror Wahrman\* (History), Stephen Watt\* (English)

## Associate Professors

Ivan Kreilkamp\* (English), Joss Marsh\* (English), Lee Sterrenburg (Emeritus, English)

## Assistant Professor

D. Rae Greiner (English)

## Academic Advisor

Professor Andrew H. Miller\*, Ballantine Hall 429, (812) 855-8224, or contact Victorian Studies (812) 855-9533

## Courses

**VICT-V 611 Victorian Britain: Culture and Society, 1820-1900 (4 cr.)** An examination of the civilization of Victorian Britain from a variety of perspectives, emphasizing problems of movement from a traditional to a modern society, industrial and democratic revolutions, and the rise and decline of Britain as a world power.

**VICT-V 701 Studies in Victorian Britain (4 cr.)** Interdepartmental investigation of topics related to Victorian Britain; their illumination of the whole period in method or substance.

**VICT-V 711 Social Science and Social Philosophy in the Victorian Age (4 cr.)** First part of course includes lectures on major philosophical and theoretical ideas underlying the approach of the Victorian period to economic and social questions; second part is based on research papers prepared by students on selected topics in their fields.

**VICT-V 805 Readings in Victorian Britain (1-6 cr.)**

## Vision Science

### School of Optometry

Departmental E-mail: [opt@indiana.edu](mailto:opt@indiana.edu)

Departmental URL: <http://www.optometry.iu.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

## Curriculum

### Degrees Offered

Master of Science and Doctor of Philosophy

### Program Information and Requirements

The Vision Science Program is designed primarily for students wishing to prepare themselves for teaching and research in the sciences that relate to vision, the eye, and the visual system.

### Admission Requirements

Course requirements are flexible to accommodate students with interests in vision science but with varying backgrounds. A bachelor's degree (or equivalent) is required. Course work with appropriate laboratories in at least some of the following areas are strongly recommended: optics, computing and engineering, physics, cell & molecular biology, mathematics through

differential and integral calculus, statistics, and psychology of sensation and perception.

## Degree Requirements

Because Vision Science is a multidisciplinary field, students must demonstrate breadth of knowledge in vision science.

Each semester, students are required to register for and participate in the weekly vision science seminar (V765) known as "Oxyopia." Participation implies that the seminar will be taken for credit and that the student will make a presentation. Students registered for G901 are still expected to participate in the seminar unless they have made prior arrangements with the Associate Dean for Graduate Programs. Students must complete ethics training, usually fulfilled by completion of V792.

Students in thesis based programs commence their research training by joining an ongoing research project directed by a faculty member chosen by the student. The research topic will be formulated in consultation with the faculty member and an advisory committee. The topic may or may not be in the same field in which the student expects to do dissertation research.

## Master of Science Degree

### Non-thesis Master of Science Degree Admission Requirements

The typical candidate for this program would be a practitioner who has an undergraduate degree in optometry or its equivalent and licensed or license eligible to practice optometry in their home country. GRE results will be required and in addition, all non-native English speakers entering the program must have taken the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS) within the last 5 years. Non-typical candidates can also be considered for admission. However, they should first correspond with the Associate Dean of Graduate Programs before applying.

## Curriculum

A total of 40 credit hours are required. Most of the courses will be based on the didactic courses in the School of Optometry's Doctorate of Optometry curriculum. Core courses will provide a breadth of background and also provide training in teaching methods, epidemiology, research design and writing and will be required to attend weekly research seminars. These core courses will add up to 15 credit hours. Electives totaling 25 credit hours will concentrate on one or two specialty areas in Optometry. Prior to registration for courses in the first semester, the student will meet with the Associate Dean or Program Director to identify specialty areas, and to obtain advice on electives.

## Thesis

Not required.

## Thesis based Master of Science Degree Course Requirements

A total of 30 credit hours is required, of which 15 credit hours must be didactic hours in vision science (or approved substitutes). Students holding the O.D. degree or enrolled concurrently in the O.D. and M.S. programs

may accelerate progress by receiving up to 4 graduate credit hours completed in the optometry curriculum. Students must complete courses that satisfy a knowledge base in statistics, research design and vision science.

### Research Requirements

Early in the program, students participate in a research project under the direction of a faculty advisor. The advisor is chosen by the student after consultation with the director of the graduate program and with the approval of the faculty advisor. Research toward the thesis is guided by the advisor and a committee. After completion of the thesis, at least three members of the graduate faculty give it final approval.

### Thesis

Required.

### Doctor of Philosophy Degree Course Requirements

A total of 90 credit hours is required, of which 30 must come from didactic courses with grades of C or higher. Students holding the O.D. degree, or enrolled in the O.D. program, may apply up to 6 credit hours to this requirement of 30 didactic credit hours. When the grade point average of a student falls below 3.0, the student is placed on academic probation and to remain in the program must show substantial progress in the following semester.

Each semester, students are required to register for and participate in the weekly Vision Science Seminar (V765) known as "Oxyopia" and the accompanying discussion period. Participation implies that the seminar will be taken for credit. Students in research programs (thesis based MS and Ph.D., are expected to be able to make presentations on their research. For MS students one such presentation prior to graduation is required. For Ph.D. students a yearly presentation in all years other than their first and their final year is expected, with exceptions requiring specific approval of the course director and the Associate Dean for Graduate Programs.

During the first year, students will be required to take a two course sequence, either Geometric and Visual Optics 1 (V521) or Systems Approach to Biomedical Science (V542). During the second semester, students will take Vision Science 1 (V560) and either V523 or V543 as well as a special topic seminar (V768) or a course fulfilling part of their minor requirements. Students believing they have previously met these requirements may apply to the Associate Dean for Graduate Programs with an alternative program.

Students will select at least one minor subject in any relevant field of study, subject to approval by their advisory committee. The requirements for the minor are determined by the department or program offering the minor. A specialized inter-departmental minor is also possible, if approved by the University Graduate School. Didactic credits applied to the minor can also be counted towards the 30 hour didactic credit requirement for the program.

### Vision Science Ph.D. Degree Requirements

**Milestones:** To successfully obtain a Ph.D. a student must successfully pass three major milestones. The

first is the qualifying exam, typically taken at the end of the second year in the program. This test qualifies the student to perform research. The second step is advancement to candidacy, which requires meeting all major course requirements, including studies in a minor area, and evaluation of a written thesis proposal. The final stage is to complete and defend the Ph.D. thesis.

**Advisory, Testing and Research Committees:** Students must identify a major advisor and have an advisor by the end of their first year. Student must form an advisory committee by the end of their first year; later in their course of study, students must form a research (dissertation) committee once the research topic for the thesis is identified and at least by the time of the defense of the thesis proposal. With the formation of the research committee, the advisory committee is dissolved. The student's advisory committee is chaired by a faculty member identified by the Associate Dean for Graduate Programs. The research committee is chaired by the student's thesis advisor. The advisory or research committee shall consult with the student, at least once per year, to help determine the student's course of graduate study, develop a research program, approve the student's course selections, and review the student's progress in all areas (for example, but not limited to: completion of required courses, course grades, adequacy of teaching, and research progress). Following each yearly meeting, a written report of the meeting must be filed with the Associate Dean for Graduate Programs. The student's committee will determine whether or not the student is making adequate progress in all areas. Should the advisory (or research) committee determine that a student is not making adequate progress in any area, this may be grounds for eliminating a student's department funding, probation, or dismissal from the program. The testing committee is formed solely for the purpose of developing and administering the qualifying examination for a student and to evaluate the students' performance on that examination.

**Composition of the Testing Committee:** At the first graduate faculty meeting of each academic year students eligible for the qualifying exams in the upcoming year will be identified, and a testing committee will be assigned by the Associate Dean for Graduate Programs. Typically, several members of the student's advisory committee will serve as members of the testing committee, although any graduate faculty member is expected to participate if requested as part of the teaching expectations within the graduate program. One member of the testing committee will be identified as chair of the testing committee. The testing committee will not include the student's chosen mentor.

The chair of the testing committee will contact the student, let them know the committee members, and establish a time window for the exam to be taken. The chair of each exam committee is responsible for setting the date of the examination(s) and communicating with the student.

The chair of the testing committee can invite a faculty member from another department (i.e., minor department) if they deem appropriate. The chair of the committee will discuss the student's plans for study and needs with the intended thesis supervisor and the student prior to working with the committee to formulate the qualifying exam questions. If the student has questions or issues with

the plans for the qualifying exam, they may only interact with the chair of the testing committee, or in extraordinary circumstances with the Associate Dean for Graduate Programs.

**The Qualifying Exam:** The qualifying exam is the first major step for a Ph.D. student towards achieving candidacy for Ph.D. status. Successful completion of the qualifying examination qualifies the student to perform their dissertation research.

The qualifying exam consists of two portions, a written portion and an oral portion. The typical student will take the qualifying exam during their second year, although an exception in unusual circumstance can be made by a formal request to the Associate Dean for Graduate Programs of IUSO and unanimous agreement of the student's advisory committee. The goal of the qualifying exam is to test both the student's knowledge of Vision Science as a multidisciplinary field of study, and the student's ability to integrate information beyond a simple recitation of facts. The qualifying exam is not intended to be a comprehensive test of detailed knowledge of all of Vision Science, but will test the ability of the student to think creatively and to integrate information in areas related to their primary interests and related areas.

The **written qualifying exam** will consist of three questions. The student will have a two-week time limit for completing the written response. Changes to the timing of the qualifying exam and length can, in unusual circumstances, be approved by the Associate Dean for Graduate Programs. Answers to each question should not exceed 5 written pages with 1-inch margins, not including the bibliography.

The **oral qualifying exam** will be administered by the examination committee typically within a week after the written exam is returned to the committee. The oral exam can cover a breadth of topics in eye and vision research, but will concentrate on material that a second year student within the student's planned course of specialization within Vision Science can be expected to be familiar with.

The outcome of the qualifying examination will be determined by the examination committee after the oral exam is concluded. Results will be either "pass" or "fail". All students who fail will have a second chance to pass, with the examination committee determining which components need to be reassessed (written, oral, or both). If re-examination is required it should be completed within approximately one month of the original oral examination.

**Establishing a Minor Area of Knowledge:** The graduate school requires students to complete a minor area of study in order to be admitted to candidacy. In the case of a traditional minor, the requirements for completion are defined by the department or program offering the minor.

In cases of custom minors, which are common in Vision Science due to its multidisciplinary nature, the evaluation of the minor will be established both by passing all classes with a GPA of 3.0 and all classes with a B- or above and an evaluation of the breadth of knowledge gained either by incorporating aspects of their minor within the thesis proposal, or in an appendix.

**The Thesis Proposal:** The final step before being admitted to candidacy is for the students to present their advisory committee with their thesis proposal. This proposal will follow the current NIH format of a 12-page proposal. This proposal will represent a body of work that, if this work is then completed successfully, would be adequate for a Ph.D. thesis. This step will typically be completed within the third year in the program.

The examination of the thesis proposal will be performed by the Research Committee, with alternates being appointed by the Associate Dean for Graduate Programs if needed or members of the research committee are unavailable. This exam will consist of a short verbal presentation by the student (15-20 minutes), followed by a discussion between the student and the Research Committee. The evaluation of the proposal will concentrate on the background, significance and methodology proposed for the thesis. The result of the examination of the thesis proposal can be pass or fail, with one possibility for re-examination. The evaluation of the thesis proposal will be based on knowledge of the student and the appropriateness of the methodology for testing the proposed hypotheses. Since individual laboratories have different approaches to scientific issues the committee will base the examination results on the appropriateness of the proposal for answering questions within the disciplinary field of the laboratory in which the student is working.

The outcome of the thesis proposal will be either pass or fail, and determined by the majority of the Research Committee. Should the decision be a fail, a re-examination is possible. The timing for re-examination of the thesis proposal will be determined by the Research Committee, since in rare cases the issues raised may require redesign of the experimental approach, and this may take more time. Thus, while a short interval to re-examination is desirable, the time must reflect the nature of the weaknesses that led to the fail decision.

**Advancement to Candidacy:** After successful completion of the thesis proposal and oral defense of the proposal, as well as satisfying all course requirements, including a minor, a student can be advanced to candidacy for the Ph.D. degree. Participation in the Ph.D. program will be terminated and the student will not be advanced to candidacy if a student fails the qualifying examination twice or the thesis defense twice.

## Thesis

The final step for the Ph.D. degree is the completion of the dissertation: After completion of the written dissertation, it is presented and defended at a scheduled seminar meeting. Defense of the dissertation must be scheduled at a minimum of 30 days prior to the defense, and all members of the Research committee must agree that the dissertation is ready to be defended before the thesis defense is scheduled. The student is expected to present a nearly complete copy of the thesis to be defended to the committee members in a timely manner so that they can determine whether it is ready to defend. Agreement that a thesis is ready to defend does not imply that a thesis can be successfully defended.

In the Vision Science program every dissertation defense begins with a public presentation that is open to the public.

This public presentation is typically an hour, with a talk



limited to ~30 minutes, followed by questions from the attendees. After the public presentation, the Advisory Committee and the student have a second, more private, meeting for examination. Any faculty members who are not on the Research Committee but wish to attend the second meeting are welcome to do so, but should notify the chairperson well in advance.

The student is responsible for submitting the final approved dissertation to the University Graduate School.

The University Graduate School (UGS) provides a guide to the preparation of theses and dissertations and all forms can be found through [one.iu.edu](http://one.iu.edu)

### Ph.D. Minor in Vision Science

Students from other departments who wish to minor in vision science should work with the Associate Dean to select an appropriate set of three Vision Science courses from the following group: OPT-V540, OPT-V560, VSCI-V705, VSCI-V707, VSCI-V717, VSCI-V723, VSCI-V725, VSCI-V754, VSCI-V783, and VSCI-V791, or with substitutions by prior approval of the Academic Advisor.

### Faculty

#### Director

Professor Stephen A. Burns\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Professors

Carolyn B. Begley\* (Emeritus), Joseph A. Bonanno\*, Arthur Bradley\*, Clifford W. Brooks, Stephen A. Burns\*, T. Rowan Candy\*, Robert DeVoe\* (Emeritus), Ann E. Elsner\*, David A. Goss\* (Emeritus), S. Lee Guth\* (Emeritus), Gary S. Hafner\* (Emeritus), Gerald Eugene Lowther\* (Emeritus), Don W. Lyon, Victor E. Malinovsky (Emeritus), Edwin C. Marshall\* (Emeritus), Richard E. Meetz (Emeritus), Donald T. Miller\*, P. Sarita Soni\* (Emeritus), Larry Thibos\* (Emeritus), William H. Swanson\*

#### Associate Professors

Ronald Everson\* (Emeritus), Daniel R. Gerstman (Emeritus), Shirin Hassan\*, Sally Hegeman (Emerita), Douglas G. Horner\* (Emeritus), Brett King, Pete Kollbaum\*, Chia-Yang Liu\*, Nicholas Port\*, S. P. Srinivas\*

#### Assistant Professors

Cathy Cheng\*, Patrice Tankam\*, Mallika Valapala\*

#### Academic Advisor

Professor Stephen A. Burns\*, Optometry Building 522, (812) 856-3713

### Courses

- VSCI-V 595 First-Year Research (1-5 cr.)
- VSCI-V 695 Second-Year Research (1-5 cr.)
- VSCI-V 703 Refractive Anomalies I (3 cr.) Optics and epidemiology of refractive anomalies of the human eye.
- VSCI-V 704 Refractive Anomalies II (3 cr.) Development, progression, and management of myopia.
- VSCI-V 705 Ocular Surface I: Basic Biology and Physiology (4 cr.) Basic biology and physiology of the ocular surface, including the cornea, conjunctiva, and tear film.
- VSCI-V 716 The Visual Pathways (4 cr.) P: permission of the instructor For students in the visual sciences, comprehensive study of the human optic pathways.
- VSCI-V 707 Retinal Imaging (2-3 cr.) The fundamental methods used in imaging the human retina will be examined, including types of illumination and delivery methods, optical techniques for detection, interaction of light and tissues, systems integration, and selection of imaging modalities based on scientific goals.
- VSCI-V 717 Noninvasive Assessment of Visual Function (3 cr.) Focuses on the clinical application of psychophysical techniques for the detection and diagnosis of visual anomalies and ocular disease.
- VSCI-V 716 Visual Functions in Low Vision (3 cr.) Studying behavioral aspects of visual function measurements in the low-vision population.
- VSCI-V 723 The Eye as Optical Instrument (4 cr.) P: V663 or equivalent.
- VSCI-V 754 The Motility of the Eye (4 cr.) P: V665 or equivalent. Quantitative and qualitative study of eye movements and myologic reflexes, monocular and binocular, and related phenomena.
- VSCI-V 764 Cellular and Molecular Aspects of Ocular Disease and Injury (4 cr.) Study of selected reports dealing with corneal-wound healing, the cataractous lens, and retinal degenerations.
- VSCI-V 765 Vision Sciences Seminar (1 cr.) Students in the Ph.D. program in vision science are required to take this seminar and make a presentation annually.
- VSCI-V 767 Electrophysiology of Vision (3 cr.) Review of techniques of recording neural events, development of a neural hypothesis, experimental testing of hypothesis, writing and presenting of data and conclusions.
- VSCI-V 768 Special Topics in Vision Science (1-4 cr.) Covers topics not offered on a regular basis. Possible topics include cell and molecular biology as it relates to the eye and vision, comparative studies of the vertebrate eye, current research, experimental design, optical and ophthalmic instruments, pathology, and pharmacology. May be taken more than once when different topics are covered.
- VSCI-V 773 Classics in Physiological Optics (1 cr.) Study of selected scientific articles of early contributors to our understanding of ocular motility, monocular and binocular functions, the optics of the eye, and ocular physiology.
- VSCI-V 783 Monocular Sensory Aspects of Vision (4 cr.) P: V666 or equivalent. A study of perceptual phenomena and responses facilitated by binocular vision.
- VSCI-V 791 Quantitative Methods for Vision Research (3 cr.) Introduction to communication theory approach to problems in vision. Topics include the sensory nerve code, representation of



nerve messages by orthogonal functions, sampling theorem, linear filters, Fourier analysis in one and two dimensions, analysis of directional data, stochastic processes, and signal detection theory.

- VSCI-V 792 Ethical Issues in Scientific Research (1 cr.) This course explores the ethical issues and dilemmas raised by research in the biological sciences.
- VSCI-V 793 Critical Evaluation of Peer Reviewed Publications in Vision Science (1 cr.) This course will provide experience to students to critically evaluate literature in the area of vision research. Students will meet for two hours each week for an eight week period. Evaluation will be based on attendance, reading assignments and class participation.
- VSCI-V 795 Third-Year Research (3 cr.)
- VSCI-V 799 M.S. Thesis Research (1-10 cr.)
- VSCI-V 801 Basic Experimental Design and Methods in Vision Science (3 cr.) An introduction to basic research skills in vision science.
- VSCI-V 899 Ph.D. Dissertation Research (1-12 cr.)

### Optometry Curriculum

- OPT-V 501 Integrative Optometry I (2 cr.) Overall goal is to provide an integrated perspective of optometry in the paradigm of problem-based learning (PBL). The problems will be clinical cases that relate to the contents of courses taught contemporaneously in optics, biomedical, and ocular biology modules.
- OPT-V 502 Integrated Optometry II (2 cr.) Overall goal is to provide an integrated perspective of optometry in the paradigm of problem-based learning (PBL). The problems will be clinical cases that relate to the contents of courses taught contemporaneously in optics, biomedical, and ocular biology modules.
- OPT-V 512 Ocular Anatomy (2 cr.) P: V511 Human Gross Anatomy, or equivalent. A detailed study of the normal anatomy and embryology of the eye and its adnexa. The organization of various components of the eye is studied at the light and electron microscopic level and this organization is related to the molecular structure where it is known.
- OPT-V 514 Neuroanatomy (1.5 cr.) P: V511 Human Gross Anatomy, or equivalent. Functional anatomy of the human brain, with emphasis on the visual system.
- OPT-V 516 Ocular Physiology (2.5 cr.) C: V512 or equivalent. Vegetative physiology of the eye, with attention to the chemical constitution, intermediary metabolism, regulation of hydration and intraocular pressure, transparency of the ocular components, and retinal physiology.
- OPT-V 521 Geometric and Visual Optics I (4 cr.) Fundamentals of geometric and physical optics. Optical analysis of myopia, hyperopia and astigmatism. Components of the eyes and their optical properties. Clinical instrumentation for optical measurement and diagnosis of eyes.
- OPT-V 523 Geometric and Visual Optics II (4 cr.) P: V521 or permission of instructor. Continuation of application of the principles of geometric and physical optics to the optical description and correction of the eye. Schematic optical models of the eye. Measurement of light. Higher-order aberrations and their impact on vision.
- OPT-V 540 Ocular Biology I (5 cr.) Head and neck neuroanatomy related to the normal functioning of the eye and visual system. Detailed anatomy/histology and physiology of the eye and adnexa. Maintenance of optical transparency and intraocular pressure. Phototransduction, retinal physiology, and the basis for the electroretinogram and electro-oculogram.
- OPT-V 542 Systems Approach to Biomedical Sciences I (4.5 cr.) First of a three semester sequence that presents basic science information organized into specific organ systems. The first module will cover common processes: basic biochemistry, cell and molecular biology, fundamentals of physiology, pharmacology, immunology/infection and oncology.
- OPT-V 543 Systems Approach to Biomedical Science II (4 cr.) Second of a three semester sequence which presents basic science information organized into specific organ systems. This module will discuss the structure, function, pathology and therapy for each organ system.
- OPT-V 550 Clinical Sciences I (3 cr.) Introduction to clinical history and interview techniques, health history content, and medical record documentation as applied to the optometric setting; optometric and medical terminology, interview techniques for special populations, legal aspects of medical records, differential diagnosis of visual symptoms, introduction to physical assessment, slit lamp biomicroscopy and ophthalmoscopy.
- OPT-V 551 Clinical Sciences II (4 cr.) Vision examination techniques, ocular diagnostic techniques, and theory and application of vision testing instrumentation, with emphasis on preliminary tests, refractive tests, and the ocular health exam; study of the principles involved in the measurement, epidemiology and treatment of ametropia, oculomotor imbalances and associated conditions.
- OPT-V 560 Vision Science I (3.5 cr.) This course provides an understanding of how visual performance is determined by the underlying biology of the eye and the brain. Topics include visual pathway neuroanatomy and physiology with special emphasis on the roles of receptive fields and neural sampling.
- OPT-V 574 Introduction to Epidemiology & Optometric Research (2 cr.) Introduction to epidemiology and biostatistics, principles of epidemiological inquiry and research design, and the application of statistical methods to clinical data
- OPT-V 601 Integrated Optometry 3 (2 cr.) Overall goal is to provide an integrated perspective of optometry in the paradigm of problem-based learning (PBL). The problems will be clinical cases that relate to the contents of courses taught contemporaneously in optics, biomedical, and ocular biology modules.
- OPT-V 602 Integrated Optometry 4 (2 cr.) Overall goal is to provide an integrated perspective of optometry in the paradigm of problem-based learning (PBL). The problems will be clinical

cases that relate to the contents of courses taught contemporaneously in optics, biomedical, and ocular biology modules.

- OPT-V 631 Optics III Ophthalmic and Advance Clinical Optics (4 cr.)P: V523 or permission of instructor. Design and application of ophthalmic spectacles and materials. Optics of low vision. Objective refractions, fundus imaging, optics of diseased eyes, wavefront-based treatments.
- OPT-V 632 Optics IV: Optics of Ophthalmic and Contact Lenses (4 cr.)P: V631 or permission V632 Optics IV: Advanced Clinical Optics (4cr) Continuation of design and application of ophthalmic spectacles and materials. Optics of low vision. Clinical aberrometry. Optics of refractive surgery. Optics of diseased eyes. Wavefront-guided refraction and treatments.
- OPT-V 633 Contact Lenses (4 cr.)Theory and practice of contact lenses. General principles of lens materials, design, care; examination, selection, fitting; diagnosis and treatment of lens wear problems; introduction to specialty fitting. Practical laboratory on lens handling, modification and fitting.
- OPT-V 644 Ocular Disease/Pharmacology I (3 cr.)P: V543. A detailed description of the signs, symptoms, differential diagnosis, and management of ocular disease of the anterior segment integrated with the principles and application of ocular pharmacology.
- OPT-V 648 Neurophysiology of Vision (2 cr.)Introduction to the functional organization of the visual system and the physiological basis of vision. This course treats the visual system as a biological image processor to reveal how the structure and function of the retina and brain determine visual performance and constrain the quality of vision.
- OPT-V 654 Clinical Sciences IV (4 cr.)P: 652 Advanced clinical analysis, procedures, and protocols for examinations of patients in the clinical setting, and comprehensive eye and vision examinations with scheduled patients; patient assessment and plan, patient communication; introduction to clinical ocular disease and protocols.
- OPT-V 663 Physiological Optics I: Visual Optics (3.5 cr.)P: V522 Geometric Optics II, or equivalent. The eye as an optical instrument.
- OPT-V 664 Physiological Optics II: Visual Function (2.5 cr.)The basic aspects of monocular vision, including light and dark adaptation, color vision, and both spatial and temporal resolution. The science of measuring visual performance and its application to clinical optometry.
- OPT-V 665 Vision Science II: Ocular Motility (3.5 cr.)Characteristics, control, and deficits of the five somatic eye-movement systems (convergence, saccadic version, pursuit version, fixation maintenance, vestibular reflex) and the autonomic systems subserving accommodation and pupillary diameter reflexes.
- OPT-V 666 Physiological Optics IV: Binocular Function (2.5 cr.)Binocular sensory mechanisms of vision. Summary of the geometry of three-dimensional space and stereo vision, underlying neuroanatomy and physiology of binocular vision,

prerequisites for normal stereopsis, and commonly encountered anomalies of binocular vision.

## Relevant Courses

### Biology

L586 Cell Biology (4.5 cr.)

### Statistics

S501 Statistical Methods I: Introduction to Statistics (3 cr.)

S503 Statistical Methods IIb: Generalized Linear Models and Categorical Data (3 cr.)

## Bulletins

### School of Natural Science and Mathematics

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff use those requirements contained only in the University Graduate School Bulletin.)

### Degrees Offered

Master of Arts for Teachers

### Master of Arts for Teachers (online collaborative)

The online collaborative M.A.T. in Mathematics is offered by multiple IU campuses in partnership with IU Online.

See the Online Collaborative Mathematics program section for information and requirements.

### Master of Arts for Teachers

#### Track 1 - Leads to Teacher Certification

If you have a Bachelor's degree in Mathematics, and would like to earn a teaching license, Track 1 of our M.A.T. offers a combination of 18 credit hours of Mathematics, followed by a year-long, intense teacher preparation program. This part of the program coincides with the Transition to Teaching program (Elementary or Secondary) at IU East. The first part of the program (18 credits in Mathematics) may be completed online, but the Transition to Teaching program must be completed on-site. This part of the program includes intensive internships.

#### Track 2 - Professional Development for Teachers

If you already have a teaching license, you may use the M.A.T. for the purpose of professional development. This track consists of an 18 credit hour core in Mathematics, and 18 credit hours of electives, at least half of which should be in Mathematics. The other half may be in Education.

### Requirements

#### Common Core

The curriculum for the program consists of a common core (18 credit hours of graduate course work in Mathematics). These courses must come from five areas in mathematics:

- Analysis (e.g., MATH-M 511, MATH-M 512, MATH-M 513, MATH-M 514)
- Algebra (e.g., MATH-M 501)
- Topology/Geometry (e.g., MATH-M 521, MATH-M 522)
- Applications (e.g., MATH-M 571)
- Probability/Statistics (e.g., MATH-M 563)

It should be noted that MATH-M 215 (Calculus I), MATH-M 216 (Calculus II), MATH-M 311 (Calculus III), MATH-M 393 (Bridge to Abstract Mathematics), MATH-M 303 (Linear Algebra), MATH-M 403 (Modern Algebra), and MATH-M 413 (Intro to Real Analysis) are prerequisites for most of these classes. Unless the student has taken MATH-M 393 recently or is familiar with standard proof techniques, he or she will be required to take this class prior to enrolling in any of the graduate-level classes. Some of the mathematics courses are also offered in an online format, which would be open to students of the proposed program.

*Track 1: Licensure (18 credits)*

Students who do not have a current teaching license are required to participate in the existing Transition to Teaching program of the Indiana University East School of Education. This program meets as a year-long cohort program, beginning in May of each year and includes an internship during Fall and Spring semesters at secondary schools. This program is separately accredited and is included here only for information purposes.

- EDUC-E 555 Human Diversity in Education
- EDUC-J 538 Practicum/Internship
- EDUC-P 510 Educational Psychology
- EDUC-K 500 Topical Exploration in Special Educ.
- EDUC-J 500 Instruction in the Context of Curriculum
- EDUC-S 503 Secondary Content Methods
- EDUC-J 538 Internship/Student Teaching (20 hours per week)
- Track 2: Professional Development and Mathematics Focus (18 credits)

*Track 2: Professional Development and Mathematics Focus (18 credits)*

Students who already have a teaching license may choose the remaining courses in consultation with the Director of Graduate Programs in Mathematics. All elective courses must be at the graduate level, and students are expected to complete at least 50% of the available elective hours in Mathematics and the remaining courses in Education.

Students will take a capstone seminar MATH-T 590 (Seminar for Mathematics Teachers) in their last year of the program. As part of the seminar, students will describe how they implemented a curricular change as a result of their coursework in mathematics and education.

## Courses

### **ENG-G 500 Introduction to the English Language (4 cr.)**

An introduction to the English language: its nature, structure, and development.

### **ENG-W 500 Teaching Composition: Issues and Approaches (4 cr.)**

Consideration of fundamental issues in the teaching of writing and the major approaches to composition instruction. Specific topics include teaching invention and revision, diagnosing errors, teaching style and organization, making assignments, and evaluating student writing.

### **ENG-W 501 Teaching College Composition in College (4 cr.)**

Practical teaching of composition, current theories and policies.

### **ENG-L 506 Introduction to Methods of Criticism and Research (4 cr.)**

The conditions and assumptions of studying English, with emphasis on criticism and research on a culturally and historically diverse range of texts.

### **ENG-W 507 Graduate Creative Non-Fiction Writing (4 cr.)**

W507 is a workshop in the craft of creative non-fiction, with special attention given to defining the genre and its craft, as well as looking at, analyzing and imitating works in specific subgenres of creative non-fiction such as memoir and travel writing.

### **ENG-L 590 Internship in English (4 cr.)**

### **ENG-W 511 Writing Fiction (4 cr.)**

Either ENG W511 or ENG W513 may be taken twice for the M.A.

### **ENG-W 513 Writing Poetry (4 cr.)**

Poetry writing workshop on the study of prosody and form (including formal elements of free verse) in the context of writing by class members. Course may be taken twice for M.A. credit.

### **ENG-G 552 Linguistics and the Teacher of English (4 cr.)**

Topics in applied English linguistics, intended for English teachers at all levels.

### **ENG-D 600 History of the English Language (3-4 cr.)**

Survey of the evolution of the English language from its earliest stages to the present, with reference to its external history and to its phonology, morphology, syntax, and vocabulary.

### **ENG-L 608 History of Literary Criticism from 1750 to 1960 (4 cr.)**

A survey of the history of literary criticism and theory from the late Enlightenment or early Romantic periods to 1960, including a variety of modern literary critics and theorists.

### **ENG-W 609 Directed Writing Projects (4 cr.)**

### **ENG-L 612 Chaucer (4 cr.)**

Critical analysis of The Canterbury Tales, Troilus and Criseyde, and selected shorter poems.

### **ENG-W 620 Advanced Argumentative Writing (4 cr.)**

Examines techniques for analyzing and constructing arguments for different disciplines and professions, especially the use of proofs, evidence, and logic. Considers major issues of argument, such as the ethics of persuading audiences and the use of style.

### **ENG-L 631 English Literature 1660–1790 (4 cr.)**

Extensive reading in poetry and nonfictional prose.

### **ENG-L 641 English Literature 1790–1900 (4 cr.)**

Extensive reading in poetry and nonfictional prose.

**ENG-L 645 English Fiction 1800–1900 (4 cr.)**

**ENG-L 649 British Literature since 1900 (4 cr.)**

Extensive reading in all genres.

**ENG-L 651 American Literature 1609–1800 (4 cr.)**

Intensive historical and critical study of all genres from John Smith through Charles Brockden Brown.

**ENG-L 653 American Literature 1800–1900 (4 cr.)**

Intensive historical and critical study of all genres from Washington Irving through Frank Norris.

**ENG-G 652 English Language Sociolinguistics (4 cr.)**

A survey course in American and British sociolinguistics, this course investigates the theoretical bases, the major works, and the methodological approaches of current sociolinguistics.

**ENG-L 655 American Literature and Culture 1900–1945 (4 cr.)**

Study of American literature and culture from the turn of the century to 1945.

**ENG-G 660 Stylistics (4 cr.)**

Survey of traditional and linguistic approaches to the study of prose and poetic style. Attention will center on the description of the verbal characteristics of texts, what those characteristics reflect about the author, and how they affect the reader.

**ENG-L 666 Survey of Children's Literature (4 cr.)**

Survey of literature written for children and adolescents from the medieval period to the present.

**ENG-L 680 Special Topics: Literary Study and Theory (4 cr.)**

Readings in sociological, political, psychological, and other approaches to literature.

**ENG-W 680 Theory and Craft of Writing (4 cr.)**

Elements of poetic prosody or the major fictive techniques or both: nature of stress, concepts of meter, nature of rhythm, prosodic use of syntax, theories of fictive realism, nature of fictive romance, point of view, etc. Students will do some writing. Open also to graduate students not in the creative writing program.

**ENG-L 682 Topics in Children's Literature (4 cr.)**

Studies in periods, such as contemporary American children's literature or Victorian fantasies for children; or genres such as picture books or children's poetry. Topics will vary.

May be repeated with different topics, for a maximum of 8 credits.

**ENG-W 682 Special Topics: Rhetoric & Composition (4 cr.)**

Variable topics in rhetoric and composition.

## Bulletins

### School of Humanities and Social Sciences

**Departmental URL:** <http://www.iue.edu/hss/english/MA-in-English.php>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Graduate Certificate in Composition Studies, Graduate Certificate in Language and Literature, Graduate Certificate in Literature, Master of Arts

#### Special Departmental Requirements

See also general University Graduate School requirements.

#### Graduate Certificates and Master of Arts (online collaborative)

The online collaborative graduate certificates in Composition Studies; Language and Literature; and Literature and the online collaborative MA English are offered by multiple IU campuses in partnership with IU Online. See the Online Collaborative English program section for information and requirements.

#### Master of Arts

##### Admission Requirements

The Master of Arts in English is designed for students who performed well academically in undergraduate programs in English, Communication, Education, Humanities, or related fields. A bachelor's degree with a 3.0 or higher from an accredited institution is required for admission to the M.A. in English.

#### Master of Arts in English

##### Degree Requirements

The Master of Arts in English program delivers a quality graduate program in a flexible format that offers a choice of both face-to-face and online courses. The program offers expertise in range of English studies including literary analysis, composition and rhetoric, and creative writing. Students design a program of study that meets their professional and personal goals through strategic selection of seven elective courses. The M.A. degree opens opportunities for teaching English in secondary and post-secondary positions. The M.A. degree provides an academic foundation suitable for a wide range of careers in areas such as professional writing, public relations, information industries, and a range of corporations needing writing specialists. The degree also provides continuation of personal enrichment and intellectual study. In order to complete the program, students fulfill the following course requirements detailed below.

#### M.A. Course Requirements (36 credit hours)

- L506 Introduction to Methods of Criticism and Research (4 cr.)

- Seven elective courses, with emphasis in literature or composition and rhetoric
- Capstone: W609 Independent Writing Project (4 cr.)

### Foreign Language Requirement

There is no foreign language requirement.

### Transfer Credits

Candidates may be permitted to transfer up to two graduate courses or 8 credit hours from another graduate institution (or from previous graduate work at IUE) if those courses demonstrably contribute to the work required for the English M.A. Unless transfer courses are clearly equivalent to the required core courses for the M.A., those courses will be counted as electives. Candidates should include in the application a request to transfer courses, a brief description of each course identifying how it contributes to the English M.A., and supporting documentation such as syllabi, assignments, papers, or other relevant material.

### Academic Regulations

Students must confer with their academic advisors on a regular basis to determine an effective course of study. An average grade of B (3.0) is required for graduation, and no course with a grade lower than B– (2.7) will be counted toward the degree. Students are required to maintain good academic standing, i.e., to maintain a G.P.A. of at least 3.0. A student whose G.P.A. drops below 3.0 must restore it to 3.0 within 9 credit hours. Failure to maintain good standing will result in dismissal from the program.

### Faculty

#### Graduate Faculty Professors

Ronnie Carter (Emeritus), Alisa Clapp-Itnyre, Mary Fell (Emerita), Edwina Helton

#### Associate Professors

Jean Harper, Laverne Nishihara

#### Assistant Professors

Sarah Harris, Steven Petersheim, Margaret Thomas-Evans

## East

- Biology
- Chemistry
- Communication Studies
- Criminal Justice and Public Safety
- English
- French
- History
- Liberal Studies
- Mathematics
- Political Science
- Spanish

## Composition Studies

Departmental Email: edhelton @iue.edu

**Departmental URL:** <http://www.iue.edu/online/programs/gradcert-compositionstudies.php>

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### Program Offered

#### Graduate Certificate in Composition Studies

Program offers graduate level education in composition studies for those who already teach English at the high school or post-secondary level or for those who wish to teach writing at the community college or university level that do not hold an M.A. in English.

The purpose of the Graduate Certificate in Composition Studies is to offer students a focused certificate in the teaching of reading and writing. The certificate provides structured learning and a supportive atmosphere for students who do not wish to pursue a traditional master's degree in English or who wish to pursue certification in Composition Studies prior to or after completion of an MA. degree.

The certificate's courses, offered 100% online, provide flexibility in format and scheduling. Our online courses offer individualized instruction by shaping courses to individual student needs. The certificate also provides further professional development at the graduate level for licensed teachers already teaching academic writing at the high school level. The certificate does not lead to Indiana teacher licensure.

#### Certificate Requirements (20 cr)

Students must complete the 20 credit hours from the courses listed below, with 12 of the credit hours earned from IU East. Students must earn a grade of "B" or better for all courses used within the certificate. Optionally, students may incorporate one independent study into their course plan, but it must be approved by the certificate advisor.

#### Transfer Credits

Candidates may be permitted to transfer up to two graduate courses or 8 credit hours from another graduate institution (or from previous graduate work at IUE) if those courses demonstrably contribute to the work required for the Graduate Certificate. Unless transfer courses are clearly equivalent to the required core courses for the Graduate Certificate, those courses will be counted as electives. Candidates should include in the application a request to transfer courses, a brief description of each course identifying how it contributes to the Graduate Certificate, and supporting documentation such as syllabi, assignments, papers, or other relevant material.

#### Course Requirements (20)

- [ENG-W 500](#) Issues in Teaching Writing
- [ENG-G 660](#) Stylistics
- [ENG-W 501](#) Teaching College Writing
- [ENG-W 620](#) Advanced Argumentative Writing
- [ENG-W 682](#) Spec.Topics: Rhetoric & Composition (Capstone)



### Graduate Certification Director

Professor Edwina Helton; Whitewater Hall 269: (765) 973-8460; [edhelton@indiana.edu](mailto:edhelton@indiana.edu)

### Faculty Director

Lynda Bonewald, Ph.D. Director, Indiana Center for Musculoskeletal Health

### Graduate Program Director

Fredrick M. Pavalko, Ph.D., Director, Musculoskeletal Health PhD Program, MS334, Indianapolis, IN 46202-5120, (317) 2784-3140, [fpavalko@iu.edu](mailto:fpavalko@iu.edu)

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Matthew R. Allen\* (ACBP), Rafael Bahaomonde\* (Dean School of Health and Human Sciences), Joseph P. Bidwell\* (ACBP), Lynda Bonewald\* (ICMH Director), Jeff Brault\* (ACBP), Linda DiMeglio (Pediatrics), Michael Econs\* (Distinguished Professor of Medical and Molecular Genetics), Anthony B. Firulli\* (Charleston Buehl McCulloch Professor of Pediatrics), Tatiana Foroud\* (Genetics and Executive Associate Dean for Research Affairs), Ed Greenfield (Surgery and ACBP), Gary Hutchins\* (John W. Beeler Professor of Radiology), Eric Imel (Medicine), Melissa A. Kacena\* (Orthopedic Surgery), Yunlong Liu\* (Computational Biology & Bioinformatics), Patrick Loehrer (Distinguished Professor of Medicine), Todd McKinley (Orthopedic Surgery), Sharon Moe (Medicine and Associate Dean for Clinical and Translational Research), Brian H. Mullis (Orthopedic Surgery), Fredrick M. Pavalko\* (ACBP), Brian Pierchala (ACBP), Lilian I. Plotkin\* (ACBP), Jamie L. Renbarger (Caroline Symmes Professor of Pediatric Cancer Research), Alex G. Robling\* (Chair, ACBP), G. David D. Roodman\* (Distinguished Professor of Medicine), Todd Skaar\* (Medicine), Ed Srour\* (Rober J and Annie S. Rohn Professor of Leukemia Research, Medicine), Joseph Wallace (Biomedical Engineering), Stuart J. Warden\* (Physical Therapy, Health and Human Sciences), Kenneth E. White\* (Chancellors Professor of Medical and Molecular Genetics), Hiroki Yokota (Engineering), Teresa A. Zimmers (H.H. Gregg Professor of Cancer Research, General Surgery)

### Associate Professors

Andrea Bonetto (Surgery), Angela Bruzzaniti\* (Dentistry), Andrew Coggan\* (Kinesiology), Robin Fuchs\* (Health and Human Sciences), Monica Hubal\* (Kinesiology), Jiliang Li (Biology), Terry LOghmani (Physical Therapy), Margaret McNulty\* (ACBP), Jason Organ\* (ACBP), Ranjani N. Moorthi (Medicine), Niki Munk\* (Health and Human Sciences), Thomas M. O'Connell (Otolaryngology-Head & Neck Surgery), Uma Sankar\* (ACBP), Carol Witzak\* (ACBP)

### Assistant Professors

Erica Clinkenbeard (Medical and Molecular Genetics), Christopher Collier (Orthopedic Surgery), Nilsson Holguin (Engineering and Technology), Roman Natoli (Orthopedic Surgery), Daniel V. Runco (Pediatrics), Steven Schlecht

(Orthopedic Surgery), Lester J. Smith (Radiology and Imaging Sciences), Steven Welc (ACBP)

### Courses

- **MSHS B842 Musculoskeletal Disease and Injury** (3cr., Fall) The overall objective of the course is to present, in the context of experimental research, the biology of major diseases, disorders, and injuries of the muscle and skeletal systems. The course will incorporate lecture, small group problem solving and journal article review. McNulty
- **GRDM G801 Cell Biology of the Neuromusculoskeletal System** (4 cr., Summer) Enrollment requires consent of instructor. The overall objective of this graduate course is to present, in an experimental context, information integrating cell structure with cell function. The specific focus is on topics in which new information on cell function has enhanced or reformulated our understanding of cell biology of the neuromusculoskeletal system. Staff
- **GRDM G819 Basic Bone Biology** (3 cr., Spring, even years only) Prerequisite: one semester of introductory biology. An introduction to basic bone biology, including bone morphology, composition and physiology; cell biology of bone cells; measurement techniques; adaptation to the mechanical and metabolic environments; regulatory factors and mineral homeostasis; and growth and development. Allen
- **GRDM G855 Experimental Design and Research Biostatistics** (1 cr., Fall) This course will provide students with a functional understanding of experimental design and statistical testing in the biological sciences. Students will learn why a thoughtful approach to the design of their experiments and a rigorous, unbiased testing of their results are both important to their work and future careers. Students will receive an introduction to basic statistical theory with a practical focus on interpreting printouts from a variety of statistical programs (rather than a focus on students carrying out their own calculations). Practical examples of experimental design and statistical testing-both good examples and bad-will be worked through for a variety of real situations in biomedical research. Williams
- **MSHS B815 Research in Musculoskeletal Health** (variable cr, hours arranged), Requires consent of the graduate director

## Musculoskeletal Health Sciences

### School of Medicine

Department e-mail: [icmb@iu.edu](mailto:icmb@iu.edu)

Departmental URL: <https://medicine.iu.edu/research-centers/musculoskeletal>

### Curriculum

Curriculum

Courses

Faculty

### Degrees Offered

Doctor of Philosophy

## Doctor of Philosophy Degree

The Musculoskeletal Health (MSH) PhD Program participates in the Indiana Biomedical Gateway (IBMG) Program. The IBMG Program provides a shared first year experience for all of the School of Medicine biomedical science pre-doctoral (Ph.D. program) students. The link for the IBMG program is: <http://grad.medicine.iu.edu/degree-programs/ibmg/>. The MSH PhD program also accepts students that enter the doctoral programs in the School of Health and Human Sciences or through the Biomedical Engineering doctoral degree program. Eligible faculty mentors are members of the Indiana Center for Musculoskeletal Health (ICMH) who are members of the IU Graduate Faculty. Students may arrange to work with a mentor working in range of muscle and skeletal-related research projects.

Students will form an Advisory Committee upon acceptance into the MSH PhD Program.

## Course Requirements

Requirements for a doctoral degree include completion of 90 credits of which at least 30 are from coursework and 45-60 are research (MSHS B815). The minimum 30 course credit hours required for the Ph.D. degree are composed of 12 credits from courses required for the major, 3 credits required skill courses, 3 credits of approved electives and 12 credits that comprise an approved minor.

## Required Major Core Courses (15 cr)

G715 Biomedical Science I (2 cr)  
 G716 Biomedical Science II (2 cr)  
 G717 Biomedical Science III (2 cr)  
 G819 Basic Bone Biology (3 cr)  
 G801 Cell Biology of the Neuromusculoskeletal System (3 cr)  
 G655 Research Communication Seminar (1 cr)  
 G505 Responsible Conduct of Research (1 cr)  
 G855 Experimental Design and Biostatistics (1 cr)

**Electives (3 cr\*)** - additional courses are likely to be added to this list

MSHS B842 Musculoskeletal Disease and Injury (becomes a required major core course in 2021)  
 G749 Introduction to Structural Biology (1 cr)  
 G725 Gene Therapy (1 cr)  
 G848 Bioinformatics, Genomics, Proteomics and Systems Biology (2 cr)  
 G817 Molecular Basis of Cell Structure and Function (2 cr)  
 G727 Animal Models of Human Disease (1 cr)  
 D501 Human Gross Anatomy (5 cr)  
 D502 Basic Histology (4 cr)  
 D851 Histology (4 cr)  
 G737 Introduction to Histology (1 cr)  
 G734 Advanced Molecular Imaging (1 cr)  
 G720 Stem Cell Biology (2 cr)  
 G747 Principles of Pharmacology (1 cr)  
 F503 Human Physiology (5 cr)  
 \*3 credits minimum, student make select more elective course credits, but at least 45 credits must be research (MSHS B815)

## Research

MSHS B815, Research in Musculoskeletal Health (45-60 cr)

GRDM G718, IBMG Students take 6 cr of Laboratory Research Rotation (3 rotations of 8 weeks, 2 cr each)

## Minor

Students will select a minor consisting of 12 credit hours in a related field, e.g., bioinformatics, biostatistics, business of biomedical science, cancer biology, cardiovascular sciences, clinical research, diabetes and obesity, health informatics, translational science, or in life science. These credits must be in lecture or laboratory courses other than research and must meet the requirements of the department in which the minor is taken. For the life sciences minor, a minimum of 6 credit hours must be obtained in one department.

## Qualifying Examination

Within the first two years following entry into the Musculoskeletal Health PhD program, the student will submit a written research proposal in the form of a grant application to their advisory committee. The student then has an oral examination administered by the advisory committee and based on the written research proposal and the coursework taken by the student. With consent of the advisory committee, the student can request an extension of up to six months to take the qualifying examination. Doctoral studies are continued if the qualifying examination and other work, including research, are deemed satisfactory by the majority of the advisory and research committees.

## Final Examination

Oral defense of the written dissertation.

## Other Requirements

It is expected that the student's dissertation research will be of sufficient quality to be published in a primary peer-reviewed journal appropriate for the student's research area.

It is the policy of the Musculoskeletal Health PhD program that all the requirements of the PhD degree program must be completed and the final, approved dissertation thesis deposited with the University Graduate School within 5 years of the date of passing the Qualifying Examination. Failure to complete the degree within 5 years of passing the Qualifying Examination will result in dismissal of the program.

## Indianapolis

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- Regenerative Medicine and Technologies

## Bulletins

### School of Liberal Arts

Program E-mail: [haberski@iupui.edu](mailto:haberski@iupui.edu)

Program URL: <https://amst.iupui.edu/graduate/index.html>

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contained only in *The University Graduate School Bulletin*.)

## Curriculum

Curriculum

## Degrees Offered

Ph.D. in American Studies

## Doctor of Philosophy Degree

The Ph.D. American Studies at IUPUI provides an academic infrastructure for a collaborative and applied graduate school experience that addresses contemporary problems through theories and methods from a variety of disciplines.

## Program Goal

The program provides skill sets by requiring students to take courses from varying faculty, in varying disciplines, that emphasize studies encompassing aspects of the US-based "American experience," broadly defined. Students will also be expected to accumulate significant experience collaborating with organizations and institutions throughout the city and region. By mandating a related internship of at least one full year in such agencies, the program will promote the students' application of academic research outside of the academy. The program also will seek to expose students to the best available set of innovative and interdisciplinary mix of methods courses so as to provide them with the knowledge and skills required to thrive in related environments.

## Student Learning Outcomes

- Demonstrate logical problem solving by integrating philosophical and scientific methods
- Summarize literature in a particular field or concentration
- Integrate philosophical and scientific methods in a research design
- Summarize and critique assumptions that prevail in the study of the United States and its institutions
- Analyze and compare different case studies
- Coordinate a project and interact with a team within a non-academic environment as part of an internship
- Produce a project design that integrates web-based material within an interactive
- Contrast institutional differences between the United States and other countries through experiences made possible by study in international centers of American Studies
- Demonstrate applicability of project design
- Test and evaluate research project with a team of experts
- Defend and refine research project

## Admission Requirements

Recruitment of candidates for this program will present opportunities that are somewhat atypical for doctoral programs in the liberal arts. Traditionally, doctoral programs attract students who wish to work with specific faculty members within specific disciplines in order to build expertise and future careers in that discipline. The program proposed here seeks to attract students who believe contemporary problems require understanding and analysis that a research degree anchored in the liberal

arts provides. Rather than recruit students to become future academics, this program uses academic training to develop expertise that can be applied primarily outside of classrooms. To that end, the recruitment of students will depend on establishing clear connections between external partners for internships, research centers at IUPUI, and faculty who will mentor students by helping them build programs that prepare them for fields in which they will intern.

Candidates are not required to hold advanced degrees in any particular discipline but this program will most likely attract students holding either a B.A. or M.A. in liberal arts disciplines or related degrees. Candidates should have a GPA of 3.5 or higher and are required to take the Graduate Record Examination (GRE) General Test (Quantitative, Verbal, and Analytical Writing). While we do not expect to institute a fixed minimum requirement, students shall be advised that successful candidates typically have scores above the 70th percentile in the verbal, quantitative, and analytic writing sections.

For those applicants whose native language is not English, IUPUI requires a 79 on the Internet-based TOEFL or 550 on the paper-based TOEFL or a 6.5 on the IELTS or a G011 or higher on the IUPUI EAP Placement Exam taken from within the last two years. However, because of the importance of writing skills on a program with a dissertation requirement applicants should typically score above the 70th percentile (i.e., 94 on the Internet-based TOEFL). Final decisions on admission shall be made by the American Studies Advisory Committee.

Beyond these measures for admission, the applicants shall submit a written statement of purpose for entering the Ph.D. program, three letters of recommendation from individuals in professional positions able to judge success (at least one from a tenured or tenure-track faculty), original transcripts, and a curriculum vitae.

Applicants should submit the following:

1. Completed application form for Indiana University Graduate School.
2. Personal Statement.
3. Official transcripts of all college level coursework.
4. Three letters of recommendation (from university instructors and/or professional associates) sent directly to the Director of Graduate Studies.
5. \*GRE scores are not required for admission to the program if the applicant has a graduate degree; however GRE scores are required for those applicants who have not completed a graduate degree or who feel their scores will enhance their application.
6. International students must submit TOEFL scores. Information about TOEFL can be obtained from the International Affairs Office, 902 W. New York Street, ES 2126, Indianapolis, IN 46202 or 317- 274-7000.

The following deadlines must be observed in order to receive consideration for admission:

- January 15—priority consideration for fall semester and to be considered for University Fellowships and other financial support
- May 15—Fall regular admission

## Degree Requirements

90 total hours; 60 hours beyond a M.A. or M.S.

Core courses (6 hours)

AMST 601: American Studies in Theory

AMST 602: American Studies in Practice

AMST Doctoral Seminar (Research blog and in person seminar for students)

Methods courses (18 hours)

Most departments consistently teach methods courses as part of their graduate programs. As proposed here, such courses will comprise the foundation for the doctoral program in American Studies. The courses are distributed across three categories: analytical, digital, and quantitative/qualitative. Consultation between a student, the chair of the student's committee, and, if possible, input from the internship director will help determine which courses necessary.

Minor Concentration (12 credits)

Every student will have at least one minor concentration, the list below covers those areas in which minors either already exist or can be easily created. Students also have the option of creating, in consultation with their committee, a minor that brings together courses from a few disciplines.

Electives (24 credit hours)

Because of the interdisciplinary nature of this Ph.D., the student will choose elective courses that compliment this applied doctoral program. The student will work with her/his faculty committee to identify those courses that best complement the research questions of the Ph.D. concentration and that supplement the theories and areas of cultural study within American Studies. Electives can also be satisfied by coursework already completed prior to acceptance in the doctoral program such as a Masters degree or other applicable graduate level work.

International Coursework

Ideally, each student will be strongly encouraged to have at least 6-9 hours in coursework from a foreign university. Such coursework can involve a minor field, methods courses or elective credits.

Qualifying Exam—Written

All students shall take a written qualifying examination that aims to assess the student knowledge and readiness to carry out successful research. This exam will be completed by the semester prior to the start of the student's internship.

Internship and Applied Dissertation (30 credit hours)

### Internship

Among the chief aims of the program is to provide doctoral students in the humanities and social sciences with opportunities to train for careers outside of academia. The doctoral internship required of this program places interns in non-profit, for-profit, and government agencies where they participate full-time in the substantive work of an organization. The AMST program works with the external

organization to cover costs associated with graduate training, including health insurance and monthly stipends. The doctoral internship serves as part of the research for student dissertations and therefore must be guided by the student's research committee.

### Dissertation

The American Studies doctoral program encourages a student to investigate problems connected with the internship; therefore, the final product will be an applied dissertation. The applied dissertation will contribute to the literature in a student's concentration area. The dissertation must be an original contribution to knowledge and of high scholarly merit. The candidate's research must reveal critical ability and powers of imagination and synthesis. The dissertation is written under the supervision of a research director and a research committee and cannot be a collection of unrelated published papers. There must be a logical connection between all components of the dissertation, and these must be integrated in a rational and coherent fashion. It is the responsibility of the student's research committee to determine the kind and amount of published material that may be included in a dissertation.

The student must maintain a B+ average (3.3) or higher in order to graduate. In addition, the student must pass the comprehensive examination and complete either a thesis or an applied learning project in order to complete the degree requirements.

## Anatomy and Cell Biology

### School of Medicine

Departmental E-mail: [anatinfo@iu.edu](mailto:anatinfo@iu.edu)

Departmental URL: <https://medicine.iu.edu/anatomy-cell-biology-physiology>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

### Degrees Offered

Master of Science and Doctor of Philosophy

### Special Departmental Requirements

(See also general University Graduate School requirements.)

### Admission Requirements

Bachelor's degree, preferably with a strong background in the sciences. Candidates should have a minimum grade point average of 3.0 (B) overall, and 3.0 in science courses. The Graduate Record Examination General Test or Medical College Admission Test is optional. Test of English as a Foreign Language is required of international applicants. It is preferable that graduate study be started in the fall semester. A personal interview may be requested. Applicants will be notified of departmental action by April 15.



### Master of Science Degree

The M.S. degree in Anatomy, Cell Biology & Physiology is offered in three different learning tracks that prepare students for successful careers in research, teaching, or the health professions. This is an independent degree and not required as a prerequisite for the doctoral degrees. All M.S. tracks require a total of 30 credit hours for the degree. Students must maintain an overall B (3.0) average in course work and earn and no less than a B- in any required or elective course.

#### Course Requirements for Translational Biomedical Research Track M.S.

This two-year program is designed for individuals who wish to pursue careers in biomedical research and can serve as either a terminal degree or as preparation for Ph.D. studies. Applications for the research M.S. are considered only after the potential student reaches a mentoring agreement with a faculty member with whom the research work will be done. The degree program requires 17-22 credit hours of didactic coursework on the fundamentals of modern research biology and 8-13 credit hours of research.

#### Required Core Courses for the M.S. in Translational Biomedical Research

- GRDM-G715 Biomedical Sciences I (2 cr.)
- GRDM-G716 Biomedical Sciences II (2 cr.)
- GRDM-G717 Biomedical Sciences III (2 cr.)
- One of the following courses
  - PHSL-F503 Human Physiology (5 cr.)
  - ANAT-D501 Human Gross Anatomy (5 cr.)
  - ANAT-D502 Basic Histology (4 cr.)

#### Required Core Electives for the M.S. in Translational Biomedical Research

Students are required to take 3-5 credit hours chosen from the lists of the *Cell and Molecular Biology Core Electives* and/or the *Integrative Systems Core Electives*. Students may use additional/alternative electives in their plan of study with the approval of the graduate adviser and the ACBP Graduate Studies Committee.

#### Cell and Molecular Biology Core Electives for the M.S. in Translational Biomedical Research

- BIOL-57410 Molecular and Cellular Bone Biology (3 cr.)
- GRDM-G720 Stem Cell Biology (2 cr.)
- GRDM-G724 Molecular Cancer Genetics (1 cr.)
- GRDM-G725 Gene Therapy (1 cr.)
- GRDM-G728 Fundamental Concepts of Infection and Pathogenesis (1 cr.)
- GRDM-G729 Introduction to Immunological Systems (1 cr.)
- GRDM-G743 Fundamentals of Electrical Signaling & Ion Channel Biology (2 cr.)
- GRDM-G744 Neuropharmacology of Synaptic Transmission: Receptors and Ligands (2 cr.)
- GRDM-G745 Intracellular Signal Transduction (2 cr.)
- GRDM-G749 Introduction to Structural Biology (1 cr.)
- GRDM-G761 Molecular & Cellular Physiology of Ion Channels (1 cr.)

- GRDM-G782 Physiology and Pathophysiology of Lipid Rafts (1 cr.)
- GRDM-G801 Cell Biology of the Neuromusculoskeletal System (4 cr.)
- GRDM-G807 Structural and Chemical Biology (2 cr.)
- GRDM-G817 Molecular Basis of Cell Structure and Function (2 cr.)
- GRDM-G819 Basic Bone Biology (3 cr.)
- GRDM-G848 Bioinformatics, Genomics, Proteomics, and Systems Biology (2 cr.)
- GRDM-G852 Concepts of Cancer Biology (2 cr.)
- PHAR-G751 Advanced Concepts in Cytosolic and Nuclear Signal Transduction (2 cr.)

#### Integrative Systems Core Electives for the M.S. in Translational Biomedical Research

- ANAT-D501 Human Gross Anatomy (5 cr.)
- ANAT-D502 Basic Histology (4 cr.)
- ANAT-D527 Neuroanatomy: Contemporary and Translational (3 cr.)
- ANAT-D701 Translational Neuroscience (5 cr.)
- ANAT-D853 Human Developmental Anatomy (3 cr.)
- ANAT-D856 Advanced Histology (1-5 cr.)
- ANAT-D864 Advanced Gross Anatomy (1-5 cr.)
- ANAT-D875 Advanced Neuroanatomy (1-5 cr.)
- GRDM-G703 Physiology of the Coronary Circulation (1 cr.)
- GRDM-G707 Physiology of Smooth Muscle (1 cr.)
- GRDM-G708 Cardiac and Coronary Physiology of Exercise (1 cr.)
- GRDM-G727 Animal Models of Human Disease (1 cr.)
- GRDM-G740 Translational Systems Physiology and Pharmacology (2 cr.)
- GRDM-G747 Principles of Pharmacology (1 cr.)
- GRDM-G748 Principles of Toxicology 1 (1 cr.)
- GRDM-G762 Renal Physiology (1 cr.)
- GRDM-G830 Advanced Cardiovascular Physiology (3 cr.)
- GRDM-G831 Concepts and Controversies in Cardiovascular Physiology (2 cr.)
- PHSL-F504 Human Physiology Simulation Lab (2 cr.)
- PHSL-F513 Human Systems Physiology (6 cr.)
- PHSL-F603 Integrated Medical Physiology (3 cr.)
- PHAR-F828 Principles of Pharmaceutical Toxicology in the 21st Century (2 cr.)

#### Required Research Skill Courses for the M.S. in Translational Biomedical Research

- GRDM-G505 Responsible Conduct of Research (1 cr.)
- GRDM-G855 Experimental Design and Biostatistics (1 cr.) or PBHL-B561 Introduction to Biostatistics (3 cr.)
- ANAT-D861 Seminar (1 cr.). Note: Enrollment in D861 is required each year in the program, which would be 2 credits assuming two years for degree completion.

#### Required Research Credits for the M.S. in Translational Biomedical Research



Students will take ANAT-D860 Research to obtain a total of 8-13 credits.

**Total credits required for degree = 30 credit hours**

**Thesis: Optional**

### Final Examination

An oral defense is required with the thesis option. Students who elect not to write a traditional thesis will be required to present a brief written report of their research, using a scientific manuscript format, to three members of the ACBP graduate faculty.

### Course Requirements for Clinical Anatomy & Physiology Track M.S.

This one-year non-thesis program provides students with a rigorous background in the traditional anatomical and physiological disciplines, coupled with training in pedagogy and curriculum as well as supervised experiences teaching anatomy and physiology.

### Required Core Courses for the M.S. in Clinical Anatomy & Physiology

- ANAT-D501 Human Gross Anatomy (5 cr.)
- ANAT-D502 Basic Histology (4 cr.)
- ANAT-D527 Neuroanatomy: Contemporary and Translational (3 cr.)
- ANAT D853 Human Developmental Anatomy (3 cr.)
- PHSL-F503 Human Physiology (5 cr.)
- EDUC-J500 Instruction in the Context of Curriculum (3 cr.) or EDUC-P540 Learning and Cognition in Education (3 cr.)

### Required Core Electives for the M.S. in Clinical Anatomy & Physiology

Students are required to take 5 credit hours from the elective list below. Students may use additional/alternative electives in their plan of study with the approval of the graduate adviser and the ACBP Graduate Studies Committee.

- ANAT-D700 Educational Research Practicum (2 cr.)
- ANAT-D710 History of Anatomy (2 cr.)
- ANAT-D861 Seminar (1 cr.)
- ANAT-D856 Advanced Histology (1-5 cr.)
- ANAT-D864 Advanced Gross Anatomy (1-5 cr.)
- ANAT-D875 Advanced Neuroanatomy (1-5 cr.)
- BIOC-B500 Introductory Biochemistry (3 cr.)
- BIOL-55900 Endocrinology (3 cr.)
- BIOL-56100 Immunology (3 cr.)
- BIOL-57410 Molecular and Cellular Bone Biology (3 cr.)
- BIOL-69700 Special Topics Frontiers of Biology (1-3 cr.)
- EDUC-C750 Topical Seminar (1-6 cr.)
- EDUC-P507 Assessment in Schools (3 cr.)
- EDUC-P514 Life Span Development: Birth to Death (3 cr.)
- EDUC-P540 Learning and Cognition in Education (3 cr.)
- EDUC-W531 Technology for Teaching and Learning (3 cr.)
- GRDM-G747 Principles of Pharmacology (1 cr.)

- GRDM-G748 Principles of Toxicology 1 (1 cr.)
- GRDM-G801 Cell Biology of the Neuromusculoskeletal System (4 cr.)
- MSCI-M620 Pedagogical Methods in the Health Sciences (3 cr.)

### Required Teaching Practicum for the M.S. in Clinical Anatomy & Physiology

- ANAT-D878 Teaching Practicum (2 cr.), one enrollment required

**Total credits required for degree = 30 credit hours**

### Course Requirements for the Pre-Professional Track M.S.

This one-year non-thesis program provides students with a rigorous background in the traditional anatomical and physiological disciplines. The curriculum is designed for students with the ultimate goal of earning a professional degree in medically related fields, including allopathic medicine (M.D.), osteopathic medicine (D.O.), dental, or physician assistant programs. Students have the option of obtaining supervised research experience (4 cr. elective).

### Required Core Courses for the Pre-Professional M.S.

- BIOC-B500 Biochemistry (3 cr.)
- PHSL-F503 Human Physiology (5 cr.)
- ANAT-D502 Basic Histology (4 cr.)

### Required Core Electives for the Pre-Professional M.S.

Students are required to take 14 credit hours from the elective list below. Students may use additional/alternative electives in their plan of study with the approval of the graduate adviser and the ACBP Graduate Studies Committee.

- ANAT-D501 Human Gross Anatomy (5 cr.)
- ANAT D527 Neuroanatomy: Contemporary and Translational (3 cr.)
- ANAT-D853 Human Developmental Anatomy (3 cr.)
- BIOL-51600 Molecular Biology of Cancer (3 cr.)
- BIOL-55900 Endocrinology (3 cr.)
- BIOL-56100 Immunology (3 cr.)
- BIOL-57410 Molecular and Cellular Bone Biology (3 cr.)
- GRDM-G724 Molecular Cancer Genetics (1 cr.)
- GRDM-G725 Gene Therapy (1 cr.)
- GRDM-G727 Animal Models of Human Disease (1 cr.)
- GRDM-G728 Fundamental Concepts of Infection and Pathogenesis (1 cr.)
- GRDM-G729 Introduction to Immunological Systems (1 cr.)
- GRDM-G745 Fundamentals of Intracellular Signal Transduction (1-2 cr.)
- GRDM-G747 Principles of Pharmacology (1 cr.)
- GRDM-G748 Principles of Toxicology 1 (1 cr.)
- GRDM-G749 Introduction to Structural Biology (1 cr.)
- GRDM-G756 Radiation and Cancer Biology (3 cr.)
- GRDM-G761 Molecular and Cellular Physiology of Ion Transport (1 cr.)
- GRDM-G807 Structural & Chemical Biology (2 cr.)
- GRDM G817 Molecular Basis of Cell Structure and Function (2 cr.)

- GRDM-G819 Basic Bone Biology (3 cr.)
- GRDM-G852 Concepts of Cancer Biology: Signaling Gone Awry (2 cr.)
- GRDM-G855 Experimental Design and Biostatistics (1 cr.)
- MICR-G729 Immunology I - Introduction to the Immune System (1 cr.)
- MICR-J510 Infectious Microbes and Host Interactions (3 cr.)
- PHSL-F504 Human Physiology Laboratory Simulations (3 cr.)
- PHSL-F603 Integrated Medical Physiology (3 cr.)
- PHSL-F701 Research in Physiology (4 cr.)\*

#### **Required Research Skill Courses for the Pre-Professional M.S.**

- PBHL-B561 Introduction to Biostatistics (3 cr.)\*\*
- ANAT-D861 Seminar (1 cr.)

\* Students must register for this course to have research appear on their transcript

\*\* Online course offered in Fall, Spring and Summer terms

**Total credits required for degree = 30 credit hours**

#### **Doctor of Philosophy Degree**

The Department of Anatomy, Cell Biology & Physiology offers two Ph.D. tracks. The Research Track is for students intending to pursue careers in laboratory research and most students enter through the Indiana BioMedical Gateway Program (IBMG), or through the direct admit portal if interested in pursuing a research-based program in the classical anatomical sciences. The Education Track is for students who desire a career focus in teaching and educational research. Both Ph.D. tracks require a total of 90 credit hours for the degree.

#### **Course Requirements for the Research Track Ph.D.**

The Research Track Ph.D. is available in two curricular concentrations: Translational Biomedical Research and Anatomical Sciences. A total of 90 credit hours are required for both concentrations. A minimum of 30 credit hours (Translational Biomedical Research) or 34 credit hours (Anatomical Sciences) must be in courses other than dissertation research and lab rotations. The student will devise a Study Plan based on the Required Core Courses, Required Core Electives, Required Research Skill Courses, Required Minor Courses, and Required Research Credits. Students should confirm the plan of study with the graduate program advisor. All coursework is designed to be completed during the first two to three years to allow a focus on full-time research for the remainder of the program. Graduation within four to six years is strongly encouraged.

#### **Required Core Courses for the Curricular Concentration of Translational Biomedical Research**

- GRDM-G715 Biomedical Sciences I (2 cr.)
- GRDM-G716 Biomedical Sciences II (2 cr.)
- GRDM-G717 Biomedical Sciences III (2 cr.)

#### **Required Core Courses for the Curricular Concentration of Anatomical Sciences**

- ANAT-D501 Human Gross Anatomy (5 cr.)

- ANAT-D502 Basic Histology (4 cr.)
- ANAT-D527 Neuroanatomy: Contemporary and Translational (3 cr.)

Students following the Translational Biomedical Research concentration must take **6 credit hours** from the lists of *Cell and Molecular Biology Core Electives* and *Integrative Systems Core Electives*, with a minimum of 3 credit hours from each list. Students following the Anatomical Sciences concentration must take **4 credit hours** from these listings with a minimum of 2 credit hours from each list. Students may use additional/alternative electives in their plan of study with the approval of the graduate adviser and the ACBP Graduate Studies Committee.

#### **Required Cell and Molecular Biology Core Electives for the Translational Biomedical Research and Anatomical Sciences Curricular Concentrations**

- BIOL-57410 Molecular and Cellular Bone Biology (3 cr.)
- GRDM-G720 Stem Cell Biology (2 cr.)
- GRDM-G724 Molecular Cancer Genetics (1 cr.)
- GRDM-G725 Gene Therapy (1 cr.)
- GRDM-G728 Fundamental Concepts of Infection and Pathogenesis (1 cr.)
- GRDM-G729 Introduction to Immunological Systems (1 cr.)
- GRDM-G743 Fundamentals of Electrical Signaling & Ion Channel Biology (2 cr.)
- GRDM-G744 Neuropharmacology of Synaptic Transmission: Receptors and Ligands (2 cr.)
- GRDM-G745 Intracellular Signal Transduction (2 cr.)
- GRDM-G749 Introduction to Structural Biology (1 cr.)
- GRDM-G761 Molecular & Cellular Physiology of Ion Channels (1 cr.)
- GRDM-G801 Cell Biology of the Neuromusculoskeletal System (4 cr.)
- GRDM-G807 Structural and Chemical Biology (2 cr.)
- GRDM-G817 Molecular Basis of Cell Structure and Function (2 cr.)
- GRDM-G819 Basic Bone Biology (3 cr.)
- GRDM-G848 Bioinformatics, Genomics, Proteomics, and Systems Biology (2 cr.)
- GRDM-G852 Concepts of Cancer Biology (2 cr.)
- GRDM-G782 Physiology and Pathophysiology of Lipid Rafts (1 cr.)
- PHAR-G751 Advanced Concepts in Cytosolic and Nuclear Signal Transduction (2 cr.)

#### **Required Integrative Systems Core Electives for the Translational Biomedical Research and Anatomical Sciences Curricular Concentrations**

- ANAT-D501 Human Gross Anatomy (5 cr.)
- ANAT-D502 Basic Histology (4 cr.)
- ANAT-D527 Neuroanatomy: Contemporary and Translational (3 cr.)
- ANAT-D701 Translational Neuroscience (5 cr.)
- ANAT-D853 Human Developmental Anatomy (3 cr.)
- ANAT-D856 Advanced Histology (1-5 cr.)
- ANAT-D864 Advanced Gross Anatomy (1-5 cr.)
- ANAT-D875 Advanced Neuroanatomy (1-5 cr.)
- GRDM-G703 Physiology of the Coronary Circulation (1 cr.)

- GRDM-G707 Physiology of Smooth Muscle (1 cr.)
- GRDM-G708 Cardiac and Coronary Physiology of Exercise (1 cr.)
- GRDM-G727 Animal Models of Human Disease (1 cr.)
- GRDM-G740 Translational Systems Physiology and Pharmacology (2 cr.)
- GRDM-G747 Principles of Pharmacology (1 cr.)
- GRDM-G748 Principles of Toxicology 1 (1 cr.)
- GRDM-G762 Renal Physiology (1 cr.)
- GRDM-G830 Advanced Cardiovascular Physiology (3 cr.)
- GRDM-G831 Concepts and Controversies in Cardiovascular Physiology (2 cr.)
- PHAR-F828 Principles of Pharmaceutical Toxicology in the 21st Century (2 cr.)
- PHSL-F504 Human Physiology Simulation Lab (2 cr.)
- PHSL-F513 Human Systems Physiology (6 cr.)
- PHSL-F603 Integrated Medical Physiology (3 cr.)

#### **Required Research Skill Courses for the Translational Biomedical Research and Anatomical Sciences Curricular Concentrations**

- **Ethics:** One of the following research ethics courses:
  - GRDM-G504 Introduction to Research Ethics (2 cr.)
  - GRDM-G505 Responsible Conduct of Research (1 cr.)
  - GRDM-G506 Responsible Conduct of Translational Research (1 cr.)
- **Reagent Validation:**
  - GRDM-G507 Reagent Validation as a Means for Enhanced Research Reproducibility (1 cr.)
- **Statistics:** One of the following statistics courses:
  - GRDM-G855 Experimental Design and Biostatistics (1 cr.)
  - PBHL-B561 Introduction to Biostatistics (3 cr.)
- **Communication:** One of the following research communications courses:
  - COMM-C533 Improvisation for Scientists: Communicating Science (1 cr.)
  - COMM-C534 Distilling Your Message: Communicating Science (1 cr.)
  - ENGL-W533 Science Writing for Public Readers: Communicating Science (1 cr.)
- **Seminar:**
  - ANAT-D861 Seminar (1 cr.). NOTE: 2 credits of D861 are required before the Nomination to Candidacy eDoc can be submitted. Enrollment in D861 is required each year in program until passing the Qualifying Exam.

#### **Required Minor Courses for the Translational Biomedical Research and Anatomical Sciences Curricular Concentrations**

All students must select a Minor, which is intended to provide additional breadth and depth to the student's graduate curriculum. The Minor consists of courses, which are outside the major department and may be in

one of the basic medical sciences (biochemistry, medical and molecular genetics, microbiology and immunology, pathology, or pharmacology) or from one of a number of interdisciplinary minors ([see listing of Minors here](#)). An alternative Minor option is to select the Life Sciences Minor. A Minor in life sciences requires a minimum of 12 credit hours outside of the student's major department; 6 of these credits must be in biological sciences. Most Minors require 12 credit hours of course work, although there is some variation. In cases where less than 12 credit hours are required, the student will take additional elective courses from the elective course lists above. The student's advisory committee must approve the Minor.

#### **Required Research Credits for the Translational Biomedical Research and Anatomical Sciences Curricular Concentrations**

Students will take ANAT-D860 Research to obtain a total of at least 90 credits for the Ph.D. degree. NOTE: All first-year IBMG Ph.D. students complete three, eight-week rotations GRDM-G718 Research in Biomedical Science (2 cr. each). These 6 credits can be applied toward the research credits.

#### **Course Requirements for the Education Track Ph.D.**

A total of 90 credit hours are required.

#### **Required Core Courses for the Education Track Ph.D.**

- GRDM-X620 Human Structure (9 cr.)
- GRDM-X630 Molecules to Cells and Tissues (7 cr.)
- ANAT-D527 Neuroanatomy: Contemporary and Translational (3 cr.) or GRDM-X660 Neuroscience and Behavior (6 cr.) or ANAT-D701 Translational Neuroscience (5 cr.)
- GRDM-X640 Fundamentals of Health and Disease (6 cr.) or PHSL-F503 Human Physiology (5 cr.)

#### **Required Core Electives for the Education Track Ph.D.**

Students must take a minimum of 9 hours of advanced coursework in the biomedical sciences, education, or statistics. Approved electives include:

- ANAT-D700 Educational Research Practicum (2 cr.)
- ANAT-D710 History of Anatomy (2 cr.)
- ANAT-D853 Human Developmental Anatomy (3 cr.)
- ANAT-D856 Advanced Histology (1-5 cr.)
- ANAT-D864 Advanced Gross Anatomy (1-5 cr.)
- ANAT-D875 Advanced Neuroanatomy (1-5 cr.)
- EDUC-C795 Dissertation Proposal Prep (3 cr.)
- EDUC-Y612 Critical Qualitative Inquiry I (3 cr.)
- OLS-53010 Mixed Methods Research (3 cr.)
- PSY-60800 Measurement Theory and the Interpretation of Data (3 cr.)
- STAT-53300 Nonparametric Statistics (3 cr.)
- One of the following research communications courses:
  - COMM-C533 Improvisation for Scientists: Communicating Science (1 cr.)
  - COMM-C534 Distilling Your Message: Communicating Science (1 cr.)
  - ENGL-W533 Science Writing for Public Readers: Communicating Science (1 cr.)

*Students may use additional/alternative electives in their plan of study with the approval of the graduate adviser and the ACBP Graduate Studies Committee.*

### **Required Minor Courses for the Education Track Ph.D.**

A minimum of 18 credit hours of education coursework including the following courses:

- MSCI-M620 Pedagogical Methods in the Health Sciences (3 cr.) or SHRS-W672 Teaching Practicum in Health and Rehabilitation Sciences (3 cr.)
- EDUC-J500 Instruction in the Context of Curriculum (3 cr.) or EDUC-C750 Curriculum in Higher Education (3 cr.)
- EDUC-P540 Learning & Cognition in Education (3 cr.)
- EDUC-Y521 Methodological Approaches to Educational Inquiry (3 cr.) or EDUC-Y520 Strategies for Educational Inquiry (3 cr.)
- EDUC-Y611 Qualitative Inquiry in Education (3 cr.)
- One course selected from the following list:
  - EDUC-Y525 Survey Research Methodology (3 cr.)
  - EDUC-Y603 Statistical Design of Education Research (1-3 cr.)
  - EDUC-C750 Topical Seminar (3 cr.) or another education course if approved by the program advisor

### **Required Teaching Practicum for the Education Track Ph.D.**

- ANAT-D878 Teaching Practicum (2 cr.), three enrollments required. NOTE: Education track students are required to teach Fall, Spring, and Summer terms during the academic year and teaching will be evaluated formally in three different departmental courses. These formally evaluated teaching rotations are required before the Nomination to Candidacy eDoc can be submitted.

### **Required Research Skill Courses for the Education Track Ph.D.**

Students are required to take the following research skill courses:

- **Statistics:** Two courses
  - EDUC-Y502 Intermediate Statistics Applied to Education (3 cr.) or PBHL-B551 Biostatistics for Public Health I (3 cr.)
  - EDUC-Y650 Topics in Inquiry Methodology (3 cr.) or EDUC-Y604 Multivariate Analysis in Educational Research (3 cr.) or PBHL-B562 Biostatistics for Public Health II (3 cr.)
- **Seminar**
  - ANAT-D861 Seminar (1 cr.). NOTE: 2 credits of D861 are required before the Nomination to Candidacy eDoc can be submitted. Enrollment in D861 is required each year in program until passing the Qualifying Exam.

### **Required Research Credits for the Education Track Ph.D.**

Students will take ANAT-D860 Research to obtain a total of at least 90 credits for the Ph.D. degree.

### **Requirements for Both the Research and Education Tracks**

#### **Grades**

Students must maintain an overall B (3.0) average in course work and earn and no less than a B- in any required or elective course.

#### **Advisory Committee**

Each Ph.D. student is required to assemble and meet with their advisory committee at least two times per year for the duration of this graduate training program. At the start of the meeting, the student typically provides the committee with a written progress report (a copy of the presentation, for example) and give a brief (approximately 30 min.) oral presentation of his/her research progress. The presentation should include the original aims and a summary of the progress made toward the completion of those aims.

#### **Qualifying Examination for Ph.D. Candidacy**

The student's Advisory Committee will administer both written and oral exams to assess the student's preparedness to carry out a rigorous program of biomedical or educational research.

#### **Research Committee**

Following the successful completion of the qualifying examination, students and major advisors select a research committee. The composition of the research committee is typically the same as the advisory committee and in most cases the two committees are identical. Approval of research committee members is granted by the graduate school.

#### **Final Examination**

The student's Research Committee will set the date for the student's oral defense of the dissertation. Further details of departmental policies will be made available to the student on request and at the time of enrollment.

#### **Ph.D. Minor in Cardiovascular Sciences**

The objective of the Cardiovascular Sciences minor is to provide students with a comprehensive background and understanding of integrative cardiac, vascular, renal, and pulmonary (patho)biology. This objective will be accomplished by providing students with a wide variety of options to advance their education in the area with advanced didactic coursework as well as student-driven journal clubs.

#### **Course Requirements**

A minimum of 12 credit hours outside the student's major department that would include these requirements: G735 (2 cr.); G830 (3 cr.); G831 (2 cr.). The remaining courses to reach 12 credit hours are to be approved by student's advisory committee. The advisory committee may approve additional and/or substitution of appropriate courses to complete the minor requirements. The minor representative on this Committee will be selected from outside the student's major department.



For more information see: <https://medicine.iu.edu/anatomy-cell-biology-physiology>

## Faculty

### Chairperson

Professor Alexander G. Robling

### Graduate Advisor

Joseph P. Bidwell\*, Ph.D., Chair of Graduate Studies Committee, 635 Barnhill Drive, MS1030, Indianapolis, IN 46202-5120, (317) 278-1142, [jbidwell@iupui.edu](mailto:jbidwell@iupui.edu)

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Matthew R. Allen\*, Patrick W. Bankston (Emeritus), David P. Basile\*, Joseph P. Bidwell\*, Lynda F. Bonewald\*, James J. Brokaw (Emeritus), David B. Burr (Emeritus), Richard N. Day (Emeritus), Taihung Duong\*, Andrew P. Evan (Emeritus), Patricia J. Gallagher (Emeritus), Susan J. Gunst\*, B.P. Herring (Emeritus), Kathryn J. Jones\*, Larry R. Jones (Emeritus), Gary E. Landreth\*, Michael J. Lannoo, Carl F. Marfurt (Emeritus), Bruce J. Martin\*, James A. McAteer (Emeritus), Anthony L. Mescher (Emeritus), Kenneth P. Nephew\*, Brian L. O'Connor (Emeritus), Valerie D. O'Loughlin\*, Frederick M. Pavalko\*, Brian A. Pierchala, Lilian L. Plotkin\*, Alexander G. Robling\*, Margaret A. Schwarz, Mark F. Seifert (Emeritus), Michael S. Sturek\*, John J. Turek, Joel A. Vilensky (Emeritus), James C. Williams\*, Frank A. Witzmann (Emeritus), Zao C. Xu (Emeritus), Feng C. Zhou (Emeritus)

### Associate Professors

David R. Bell, Derron L. Bishop, Jeffrey J. Brault, Kenneth E. Byrd\*, Andrew S. Deane, Christine M. Eckel, Jeffrey S. Elmendorf\*, John G. Foley\*, Roger C. Hoversland (Emeritus), Polly R. Husmann\*, Brian G. Kennedy (Emeritus), Xiaoming Jin\*, Il-Man Kim\*, Tatiana Y. Kostrominova, Margaret M. Moga, Alexander G. Obukhov\*, Jason M. Organ\*, Uma Sankar\*, Dale W. Saxon, Robert D. Sweazey, William A. Truitt\*, Tracy C. Vargo-Gogola, Carol A. Wiczak\*, Donald Wong (Emeritus)

### Assistant Professors

Elizabeth R. Agosto, Jessica N. Byram\*, Scott C. Canfield, Stephanie M. Gardner, Leslie A. Hoffman, Samar Khirallah, Christian A. Lasagna Reeves, Joshua E. Mangum, Jose L. Mas, Margaret A. McNulty\*, Elwood K. Walls, Steven S. Welc

## Courses

- **BIOL-N461 Cadaveric Human Anatomy** (5 cr.) P: BIOL N261 Human Anatomy or permission of instructor. This course is designed for upper-level undergraduate students who desire an advanced understanding of Human Anatomy; especially those who intend to pursue a career in the health professions. Through the use of cadaveric dissection, prosected materials, and digital images,

the student will explore the structural details of the human body, with a particular emphasis on functional anatomy and clinical correlations. This course will be an intensive learning experience for motivated undergraduate students.

- **GRDM-X620 Human Structure** (9 cr.) The Human Structure course is designed to provide students with an integrated microscopic-to-macroscopic understanding of the structural organization underlying many of the functions of the human body. In addition, students are exposed to the developmental processes responsible for the unique structural and spatial relationships associated with the various organ systems of the body. On completion, students will have a sound framework of anatomical knowledge on which to build their future understanding of disease and treatment. Note: Enrollment is restricted to medical students and graduate students in the Education Track PhD Program in Anatomy, Cell Biology & Physiology.
- **ANAT-D501 Human Gross Anatomy** (5 cr.) Enrollment requires consent of instructor. Gross anatomy lecture and laboratory course. Introduction to the concepts, terminology, and basic structure of the human body. Dissection of the body will use a regional approach. Emphasis on providing fundamental knowledge of the structure/function of major organ systems, musculoskeletal system, peripheral nervous system, and vascular supply to the trunk, head and neck, limbs, and back.
- **ANAT-D528 Gross Anatomy for Health Care Professionals** (5 cr.) Enrollment requires consent of instructor. A graduate level anatomy course for students in the physician assistant, physical therapy, and occupational therapy programs. This course is an intensive introduction of human gross anatomy with lecture and a full gross dissection laboratory. This course also has an emphasis on clinical application of anatomy.
- **ANAT-D502 Basic Histology** (4 cr.) Lecture and laboratory instruction on the microscopic structure of the basic tissues and organs of the body. Previous exposure to gross anatomy principles and dissection encouraged.
- **ANA-D853 Human Developmental Anatomy** (3 cr.) P: D501 or D528 or concurrent registration. A correlative study of prenatal and neonatal form and function.
- **ANAT-D701 Translational Neuroscience** (5 cr.) Enrollment requires consent of instructor. This graduate course uses a multidisciplinary approach to integrate the basic with the clinical neurosciences in understanding the human nervous system and select neurological disorders. Particular emphasis will be placed on deficits of motor function resulting from injury or disease. The functional anatomy of the brain and spinal cord will be studied using histologic atlas cross-sections and neuroradiologic images. Working as interdisciplinary teams, doctoral students in the biomedical sciences and rehabilitation sciences will explore relevant clinical cases in team-based activities.



- **ANAT-D527 Neuroanatomy: Contemporary and Translational** (3 cr.) Graduate level neuroscience course providing an introduction to terminology, pathways, organization, and current research-based concepts of the human nervous system. Emphasis on providing fundamental knowledge of the structure, neurochemistry, and molecular mechanisms of the central and peripheral nervous systems in health and disease.
- **ANAT-D710 History of Anatomy** (2 cr.) This graduate seminar course will survey the development of the anatomical sciences—gross anatomy, histology, neuroanatomy, and embryology—from antiquity to the present. Through assigned readings, lectures, and discussions, students will explore the work of the great anatomists and their discoveries. Particular emphasis will be placed on the evolution of anatomy as a discipline and the cultural influences, scientific controversies, and ethical dilemmas facing its practitioners.
- **PHSL-F503 Human Physiology** (5 cr.) P: Introductory biology (K101, K103), and organic chemistry (C341, C342), and physics (P201, P202), or equivalent. Advanced course in human physiology designed for students with no prior exposure to the discipline. Emphasis on basic physiological mechanisms of control with regard to membrane, neural, endocrine, reproductive, muscle, cardiovascular, respiratory, gastrointestinal, renal, and multi-systems physiology.
- **PHSL-F504 Human Physiology Simulation Lab** (2 cr.) Students will use computer simulations to study and understand fundamental concepts in human physiology. The areas covered include cardiovascular, skeletal, neural, muscular, respiratory, bone, exercise, renal, endocrine and reproduction
- **PHSL-F513 Human Systems Physiology** (6 cr.) Neurophysiology, physiology of muscular activity, respiration, circulation, gastrointestinal physiology, excretion, metabolism, and endocrinology. Emphasis on basic physiological mechanisms and control systems.
- **PHSL-F603 Integrated Medical Physiology** (3 cr.) P: PHSL-F 503 Human Physiology. This course will provide students and fellows with the opportunity to extend their knowledge of human physiology by investigating the mechanisms of human diseases and understanding how physiological systems interact in order to maintain homeostasis in health and disease. A combination of lectures and team-based learning will be integrated with discussion of articles from the primary literature to develop the students understanding of how diseases affect the integrated physiology of humans.
- **ANAT-D856 Advanced Histology**(1-5 cr.) P: X620 or D502. In depth consideration of selected topics on the microscopic anatomy of cells, tissues, and organs.
- **ANAT-D864 Advanced Gross Anatomy**(1-5 cr.) P: X620, D501, or D528. Functional, clinical, and developmental gross morphology of specific regions of the human body; special topics may vary.
- **ANAT-D875 Advanced Neuroanatomy**(1-5 cr.) P: D527 or D701. Examination of the anatomy and related physiology and neurochemistry of selected brain areas. Topics will include regional structures (in spinal cord, brain stem, diencephalon, or telencephalon) or specific neurological systems (sensory, motor, or autonomic-visceral). Area of study to be arranged with instructor.
- **PHSL-F595 Advanced Physiology** (1-4 cr.) Consent of instructor. This course focuses on in depth study of particular aspects of physiology; to be arranged with members of faculty.
- **PHSL-F701 Research in Physiology** (cr. arr.) Students cover fundamental concepts of cellular and integrative physiology of tissues and organ systems. Basic physiology of the neural, musculoskeletal, cardiovascular, respiratory, renal, endocrine, and gastrointestinal systems is included. At the end of the course, students should have a basic understanding of the physiologic functions of cells, tissues, and organ systems and should understand modern approaches for the measurement and interpretation of physiologic functions.
- **GRDM-G703 Physiology of the Coronary Circulation** (1 cr.) P: Graduate physiology. Advanced study of the physiology, pharmacology, and pathophysiology of the coronary circulation using contemporary methods. Overall goal is to provide a rational basis for functional genomics and modern therapy.
- **GRDM-G707 Physiology of Smooth Muscle** (1 cr.) P: Graduate-level physiology course. Advanced study of the physiology of the smooth muscle tissues with focus on the normal physiology and pathophysiology of airway smooth muscle and the airways. Biochemical and physiologic mechanisms in the regulation of contraction, growth, and phenotypic expression in smooth muscle tissues will be explored.
- **GRDM-G708 Cardiac and Coronary Physiology of Exercise** (1 cr.) P: Graduate integrative physiology. Exercise stimulus, quantification of work, and in vivo responses and adaptations involved in cellular and molecular mechanisms of myocardial and coronary artery responses and adaptations to exercise.
- **GRDM-G761 Molecular and Cellular Physiology of Ion Channels** (1 cr.) P: Graduate cellular physiology. Advanced ion transport topics selected from current research on channels, pumps, and exchangers. Topics include transporter biophysical characteristics, long-term regulation, and electrophysiological and optical methods for study.
- **GRDM-G762 Renal Physiology** (1 cr.) P: Graduate physiology. Reading and discussion of classical papers in renal physiology. Laboratory experiences will include measurement of renal functions using

clearance methods and demonstrations of micro-puncture and in vivo techniques.

- **GRDM-G782 Physiology and Pathophysiology of Lipid Rafts** (1 cr.) P: Graduate cell biology. To acquire a core of essential principles about lipid raft structure and comprehensive insight into the functional process of these membrane domains by means of introductory lectures, review of current literature, and group discussions with an emphasis on experimental techniques used to examine membrane physiology.
- **GRDM-G801 Cell Biology of the Neuromusculoskeletal System** (4 cr.) Enrollment requires consent of instructor. The overall objective of this graduate course is to present, in an experimental context, information integrating cell structure with cell function. The specific focus is on topics in which new information on cell function has enhanced or reformulated our understanding of cell biology of the neuromusculoskeletal system.
- **GRDM-G819 Basic Bone Biology**(3 cr.) P: one semester of introductory biology. An introduction to basic bone biology, including bone morphology, composition and physiology; cell biology of bone cells; measurement techniques; adaptation to the mechanical and metabolic environments; regulatory factors and mineral homeostasis; and growth and development.
- **GRDM-G830 Advanced Cardiovascular Physiology** (3 cr.) P: Graduate physiology. Advanced (3 cr.) study of the physiology, pharmacology, and pathophysiology of the cardiovascular system using contemporary methods is emphasized. Concepts of cardiovascular structure, function, hemodynamics, excitation-contraction coupling, signal transduction and electrophysiology are reinforced.
- **GRDM-G831 Concepts and Controversies in Cardiovascular Science** (3 cr.) P: Graduate physiology. Reading and in-depth discussion of current concepts and controversies in the field. Classes involve student presentations of relevant manuscripts in journal club like format.
- **GRDM-G855 Experimental Design and Research Biostatistics** (1 cr.) This course will provide students with a functional understanding of experimental design and statistical testing in the biological sciences. Students will learn why a thoughtful approach to the design of their experiments and a rigorous, unbiased testing of their results are both important to their work and future careers. Students will receive an introduction to basic statistical theory with a practical focus on interpreting printouts from a variety of statistical programs (rather than a focus on students carrying out their own calculations). Practical examples of experimental design and statistical testing-both good examples and bad-will be worked through for a variety of real situations in biomedical research.
- **ANAT-D700 Educational Research Practicum** (2 cr.) P: Consent of instructor. This course is designed to provide students with structured and

supervised educational research experiences, as well as critical reviews of individual performance. May be repeated for credit.

- **ANAT-D878 Anatomy Teaching Practicum** (2 cr.) P: Consent of instructor. This course is designed to provide each student with supervised teaching experiences in gross anatomy, histology, and neuroscience, as well as critical reviews of all teaching duties. May be repeated for credit.
- **ANAT-D899 Senior Elective in Anatomy**(cr. arr.) A variety of medical student electives are offered within the department. Specific information on each elective is available in the Senior Elective Program Course Listing, which is published in February each year. These electives are offered in the Medical Center facilities and in approved programs in clinics and hospitals throughout the state.
- **PHSL-F898 Senior Elective in Physiology** (cr. arr.) This course provides students with focused special topic to be arranged by student's mentor with consent of program director.
- **ANAT-D861 Seminar**(1 cr.) Required of all graduate students in residence. Presentations of papers by students, staff, and invited distinguished visitors. Includes post-seminar discussion.
- **ANAT-D860 Research**(cr. arr.) Enrollment requires consent of instructor.
- **ANAT-G901 Advanced Research (6 cr.) P: Admission to PhD candidacy. Enrollment requires** completion of over 90 credit hours and consent of instructor.
- **PHSL-G901 Advanced Research (6 cr.) P: Admission to PhD candidacy. Enrollment requires** completion of over 90 credit hours and consent of instructor.

## Anthropology

### School of Liberal Arts

**Email:** Admin: [dmward@iupui.edu](mailto:dmward@iupui.edu); or Graduate Program Director: [wilsojer@iupui.edu](mailto:wilsojer@iupui.edu)

**Departmental URL:** [liberalarts.iupui.edu/anthropology](http://liberalarts.iupui.edu/anthropology)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

- M.A. in Applied Anthropology
- Ph.D. minor in Applied Anthropology

#### Master of Arts in Applied Anthropology Program Overview

The M.A. in Applied Anthropology at IUPUI offers students the opportunity to use anthropological theories and methods toward the goals of solving real-world problems. The program is constructed around a set of core courses together with mentored research projects and internships with community stakeholders. The degree

takes advantage of our long-standing departmental strengths in Public Archaeology, Urban Anthropology, International Development, Globalization, Medical Anthropology and Museum Studies. Students may choose to follow a targeted curriculum, focusing on a particular aspect of the discipline; all students will also be well-trained in a broad range of anthropological approaches.

### Admission

In line with the criteria established by the Indiana University Graduate School, students wishing to be admitted to the MA program in Anthropology must – at a minimum – have a Bachelor's degree from an accredited institution, with a GPA of at least 3.0 (on a scale of 4.0). We use as a guideline for admissions GRE scores averaging at least 50th percentile in verbal reasoning, 30<sup>th</sup> percentile in quantitative reasoning, and a 4.0 for the analytical writing score; students who demonstrate other strengths and good preparation for the program may be accepted at the discretion of the Anthropology Department Graduate Committee and with the approval of the Graduate School. Appropriate work experience and undergraduate coursework will also be taken into account in making decisions about admission. For applicants whose native language is not English, or who have not received a degree from a certified American university, a minimum TOEFL score of 79 on the current IBT examination (equivalent to scores of 550 and 213 on prior versions of the examination) would be required. An IELTS score of 6.0 or above may substitute for the TOEFL.

Applicants are required to submit a statement of interest, three letters of recommendation, an undergraduate transcript, and GRE scores. Admission decisions will be made by the Anthropology Department Graduate Committee, and approved by the Graduate Office at IUPUI on behalf of the Graduate School.

### Course Requirements:

A total of 36 credit hours, including a core curriculum consisting of 6 credits of required core courses (E501; A565); 3 credits of a methods course in the student's sub-disciplinary area; 21 credits of elective courses; and 6 internship or thesis credits. Course electives may be chosen both from within and outside of Anthropology including appropriate cognate courses from programs that are already well-developed at IUPUI including Museum Studies, Urban Policy (SPEA), Urban Education, Geographic Information Systems (GIS), Community Nursing, and Public History.

### Courses:

**A532 The African Diaspora** (3 cr.) This course examines the cultural formation of the African Diaspora in the Americas, the Caribbean, Europe and Africa. The course focuses specifically on the theorization of the African Diaspora within the discipline of Anthropology.

**A560 Graduate Topics in Anthropology** (3 cr.) This seminar course provides a conceptual examination of selected topics in the field of anthropology. May be repeated for up to 9 credits.

**A565 Anthropological Thought** (3 cr.) This course traces the development of anthropological theory from the early

20th century up to the present. Students will examine what is distinctive about an anthropological perspective and will analyze how anthropological ideas have shifted over the last century in accordance with the emergence of new social and political imperatives.

### A594 Independent Learning in Applied

**Anthropology** (2-4 cr.) P: Authorization of instructor.

Independent research/training using anthropological perspectives/methods in addressing social issues. The project must be a discrete activity with a concrete product, conducted in conjunction with the student's anthropology advisor and the member of the organization where s/he will be located.

**B526 Human Osteology** (3 cr.) Descriptive and functional morphology of the human skeleton with emphasis on the identification of fragmentary remains. Determination of age, sex, and stature; craniology; and research methods in skeletal biology. Guided research project in the identification of skeletal material required.

### E501 Fundamentals of Applied Anthropology

(3 cr.) This is a graduate-level introduction to the history and underlying principles of Applied Anthropology. We will examine how understanding a specifically anthropological perspective can provide new insights into the workings of contemporary social policies and programs.

**E507 Popular Culture** (3 cr.) This course studies how traditional anthropological insight can analyze social and political complexities of contemporary popular cultural phenomena. Focuses on how anthropological subjects such as class, racism, and regionalism lurk within popular cultural phenomena including post-1950 music subcultures, civil religion, and consumer culture.

**E509 Modern Material Culture** (3 cr.) This course examines how contemporary social experience is impacted by material culture ranging from toys to theme parks. Focuses on how consumers perceive themselves and others in modern consumer culture through the medium of commodities and examines systems of inequality that are reproduced and subverted through consumption.

**E521 Indians of North America** (3 cr.) Assesses the complexities of the academic study of the Indigenous peoples of North America, emphasizing the diversity of Native cultures, representations of them by the public and by scholars, and examining cultural adaptations from Pre-Contact to Contemporary.

**E606 Research Methods in Cultural Anthropology** (3 cr.) This course provides an introduction to the use of ethnographic field work methods, including participant-observation, semi-structured interviewing, and use of mapping, among others. Every year this course will focus on a community-based research project.

**E681 Seminar in Urban Anthropology** (3 cr.) Seminar in cross-cultural urban social organization, emphasizing recruitment manifestations of urbanism in various cultural contexts and techniques of investigation. Practical work required.

**P501 Community Archaeology** (3 cr.) Community archaeology implies direct collaboration between a community and archaeologists. Collaboration implies substantial adjustment in archaeological methods and

epistemologies incorporating community members in setting research agendas, working on excavations, and interpreting results. This course examines a wide range of issues and looks at both successful and unsuccessful projects to arrive at an assessment of best practices.

**Capstone:** To earn the M.A., students are required to complete either an internship, which involves writing a report for the organization or agency, submit an article for peer review to a reputable academic journal, or complete a more traditional M.A. thesis.

**Internship Option (6 cr.)** A student will be placed with a non-governmental organization, a city or county agency, a museum or other Cultural Resource Management organization, or a community-based organization and will arrange with the sponsoring organization to complete a project that will be mutually agreed upon by the student's committee in the Anthropology Department and the organization. Note: The internship may be taken for variable credits depending on the amount of contact hours with the equivalence of 50 hours per credit hour unless constructed as a graduate assistantship in accordance with Anthropology Department policy in which case the contact hours may be greater.

**Thesis Option (6 cr.)** A student would develop and write a thesis supervised by a three-member committee of full-time faculty. In most cases, the thesis would explore a research question related to some aspect of the urban setting of greater Indianapolis and Central Indiana or archaeology and heritage management in the Midwest, and would demonstrate the ability of a student to work independently on that topic, and to apply both theoretical insight and methodological skills to a substantive issue. A student would be required to successfully defend the thesis before his/her committee.

**Evidence of Publishable and Professional Research Option (6 cr.)** Rather than producing a traditional M.A. thesis, in accordance with the student's advisor, students will be allowed to write a research paper that is assessed to be publishable in a refereed journal. Alternatively, for students primarily interested in a focus on Museums or in Cultural Resource Management, the advisor might suggest that the student develop and produce a public exhibit in Indianapolis or Central Indiana. Lastly, students may be permitted to produce a report that contributed significantly to a policy issue in Indianapolis or Central Indiana. Student articles may be submitted for publication to a variety of peer-reviewed journals and scientific merit will also be assessed by the student's committee.

#### **Other Courses:**

For a complete description and list of other graduate courses, consult the departmental webpage.

#### **Ph.D. Minor in Anthropology**

Students who are candidates for the Ph.D. degree in other programs or departments may obtain a minor in Anthropology at IUPUI. The intent of the minor is to develop interdisciplinary skills, exposing students to theories and methods outside of their major department. The Ph.D. minor in Anthropology has a semi-structured curriculum that can provide students with a foundation in basic areas in Anthropology and the opportunity to study advanced anthropological theory and research methods.

Requirements for the Ph.D. minor in Anthropology consists of completing 12 credits including:

- Anthropology 501, Fundamentals of Applied Anthropology.
- An additional three courses at the 500 level or above.
- An average grade of B (3.0 on a 4.0 scale) or above in all 4 courses.
- All of these courses must be taken in the Anthropology Department on the IUPUI campus.

Students wanting to minor in Anthropology should initially meet with an advisor in their home department and should then contact the Director of Graduate Studies in Anthropology. For more information, please contact our departmental Web page at: <http://liberalarts.iupui.edu/anthropology/>

#### **Faculty**

##### **Director**

Jeremy J. Wilson\*, Cavanaugh Hall 413, (317) 274-5787

##### **Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

##### **Professors**

Susan Hyatt\*, Paul R. Mullins, Elizabeth B. Kryder-Reid, Susan Buck Sutton (Emeritus), Rick E. Ward (Emeritus), Larry Zimmermann (Emeritus)

##### **Associate Professors**

Holly Cusack-McVeigh, Jeanette Dickerson-Putman\* (Emeritus), Gina (Sanchez) Gibau, Wendy Vogt, Jeremy J. Wilson

##### **Senior Lecturer**

Kathryn C. Glidden, Hilary Kahn, Audrey Ricke

##### **Adjunct Associate Professors**

Andrew S. Deane (Anatomy and Cell Biology)

##### **Adjunct Assistant Professors**

Jason M. Organ (Anatomy and Cell Biology), Nick A. Rattray (Veterans Affairs Medical Center)

##### **Research Scientists**

Edward W. Herrmann (Earth & Atmospheric Sciences, IU-Bloomington)

#### **Courses**

##### **Courses Relevant to the MA in Applied Anthropology**

- **ANTH-A 532 The African Diaspora (3 cr.)** This course examines the cultural formation of the African Diaspora in the Americas, the Caribbean, Europe and Africa. The course focuses specifically on the theorization of the African Diaspora within the discipline of Anthropology
- **ANTH-A 560 Graduate Topics in Anthropology (3 cr.)** P: May be repeated for up to 9 credits. This

seminar course provides a conceptual examination of selected topics in the field of anthropology.

- **ANTH-A 565 Anthropological Thought (3 cr.)** This course traces the development of anthropological theory from the early 20th century up to the present. Students will examine what is distinctive about an anthropological perspective and will analyze how anthropological ideas have shifted over the last century in accordance with the emergence of new social and political imperatives.
- **ANTH-B 526 Human Osteology (3cr.)** Descriptive and functional morphology of the human skeleton with emphasis on the identification of fragmentary remains. Determination of age, sex, and stature; craniology; and research methods in skeletal biology. Guided research project in the identification of skeletal material required.
- **ANTH-E 501 Fundamentals of Applied Anthropology (3 cr.)** This is a graduate-level introduction to the history and underlying principles of Applied Anthropology. We will examine how understanding a specifically anthropological perspective can provide new insights into the workings of contemporary social policies and programs.
- **ANTH-E 507 Popular Culture (3 cr.)** This course studies how traditional anthropological insight can analyze social and political complexities of contemporary popular cultural phenomena. Focuses on how anthropological subjects such as class, racism, and regionalism lurk within popular cultural phenomena including post-1950 music subcultures, civil religion, and consumer culture.
- **ANTH-E 509 Modern Material Culture (3 cr.)** This course examines how contemporary social experience is impacted by material culture ranging from toys to theme parks. Focuses on how consumers perceive themselves and others in modern consumer culture through the medium of commodities and examines systems of inequality that are reproduced and subverted through consumption.
- **ANTH-E 521 Indians of North America (3 cr.)** Assesses the complexities of the academic study of the Indigenous peoples of North America, emphasizing the diversity of Native cultures, representations of them by the public and by scholars, and examining cultural adaptations from Pre-Contact to Contemporary.
- **ANTH-E 606 Research Methods in Cultural Anthropology (3 cr.)** This course provides an introduction to the use of ethnographic field work methods, including participant-observation, semi-structured interviewing, and use of mapping, among others. Every year this course will focus on a community-based research project.
- **ANTH-E 681 Seminar in Urban Anthropology (3 cr.)** Anthropological perspectives on contemporary American cities. Topics to be covered include (among others): changes in nature of cities from manufacturing sites to spaces for consumption and

tourism; gentrification; racial and ethical diversity in cities; urban social movements and new models for social services.

- **ANTH-P 501 Community Archaeology (3 cr.)** Community archaeology implies direct collaboration between a community and archaeologists. Collaboration implies substantial adjustment in archaeological methods and epistemologies incorporating community members in setting research agendas, working on excavations, and interpreting results. This course examines a wide range of issues and looks at both successful and unsuccessful projects to arrive at an assessment of best practices.

## Applied Communication

School of Liberal Arts

Departmental E-mail: [commdept@iupui.edu](mailto:commdept@iupui.edu)

Departmental URL: <http://www.liberalarts.iupui.edu/comm/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff use those requirements contained only in The University Graduate School Bulletin).

### Curriculum

#### Degrees Offered

##### M.A. in Applied Communication

The Department of Communication Studies offers a master's program in Applied Communication with optional concentrations in corporate communication, health communication, media studies and public communication.

#### Program Goal

The overarching goal of this unique program in Applied Communication is to provide students with the competencies and skills necessary to address specific communication issues and problems that are socially relevant and to suggest or implement change. The primary intellectual goal of the program is to increase our students' understanding of the theoretical implications of discipline-specific knowledge and to enhance their ability to understand and predict human interaction relative to realistic, applied outcomes associated with contemporary social problems. A practical goal of the program is to educate professionals who grasp the complexities of communication problems and who are able to develop and execute strategies and create programs to address such issues.

#### Student Learning Outcomes

Students completing the Applied Communication M.A. curriculum will:

- communicate both orally and in writing for professional and academic audiences
- synthesize, critique, and apply theoretical constructs in communication studies
- select and evaluate appropriate methodologies for conducting communication research
- propose and justify solutions to real-world communication problems



- design and conduct guided communication research

### Admission Requirements

Our Department prides itself on the diversity of majors from which students enter our program of study. Prior to entering our master's program, students should have (1) a baccalaureate degree from an accredited institution, (2) an introduction to research methods, (3) experience in the analysis of communication phenomena, and (4) experience with writing in an academic context. Students who do not have this preparatory work may be admitted provisionally with additional coursework required prior to admission, and/or additional credit hour requirements imposed as a part of the minimum requirements for the Master of Arts degree.

The Admissions Committee will evaluate an applicant's preparation and goals to ensure that the applicant meets the requirements of Indiana University Graduate School and that the applicant's needs and goals are compatible with the Department's program. The Department seeks applicants who have strong analytical and writing skills, a strong liberal arts background, an interest in communication, and applicable work-related experiences. Generally, successful applicants will have cumulative grade point averages of 3.0 or higher at the undergraduate level. The Admissions Committee considers all indicators of the applicant's ability to complete the degree successfully.

Applicants should submit the following:

1. Completed application form for Indiana University Graduate School.
2. Personal Statement.
3. Official transcripts of all college level coursework.
4. Three letters of recommendation (from university instructors and/or professional associates) sent directly to the Director of Graduate Studies.
5. \*GRE scores are not required for admission to the program; however GRE scores may be submitted if an applicant feels the scores will enhance his/her application and an applicant wishing to be considered for scholarships or fellowship support should note that strong scores on the GRE General Test ARE REQUIRED and may have a positive impact on his/her application.
6. International students must submit TOEFL scores. Information about TOEFL can be obtained from the International Affairs Office, 902 W. New York Street, ES 2126, Indianapolis, IN 46202 or 317- 274-7000.

The following deadlines must be observed in order to receive consideration for admission:

- January 15—Priority consideration for fall semester
- May 15—Fall regular admission

### Degree Requirements

Completion of **30** credit hours including:

- 12 credit hours of core requirements. These include:
  - COMM-C500 Advanced Communication Theory
  - COMM-C501 Applied Quantitative Research Methods

- One of COMM-C502, COMM-C680, COMM-C530 or COMM-C531
- COMM-C503 Applied Learning Project, or COMM-C597 Thesis

- 18 additional hours
- Each student may take 3 credit hours of interdisciplinary electives from outside of the Department of Communication Studies, as approved by the student's advisor. However, this is not
- The student must maintain a B+ average (3.3) or higher to graduate.
- The student must complete either a thesis or an applied learning project to complete the degree requirements.

### 5-Year BA/MA in Applied Communication

The Department of Communication Studies also offers a 5-year BA/MA in Applied Communication. The program, which is only available to majors in IUPUI's Department of Communication Studies, allows students to complete a BA and an MA in five years instead of six. The program consists of three years of undergraduate coursework, a fourth year of combined undergraduate and graduate coursework, and a fifth year of exclusively graduate coursework. The Program Goals and Student Learning Outcomes of the 5-Year BA/MA in Applied Communication are identical to the goals and learning outcomes of the M.A. in Applied Communication.

### Admission Requirements

- Qualified Communication Studies majors may apply for the program in the second semester of their junior year. To be eligible to apply, students should have completed at least 60 credit hours overall and 12 hours in the major, including the 9-hour core (G100, G201, and G310). They should have a minimum GPA of 3.3 overall and a 3.5 in their major coursework.
- As part of the application process, students are required to submit two (2) faculty letters of recommendation (at least 1 from a member of the IUPUI Department of Communication Studies faculty) and a single-authored writing sample.
- If students maintain at least a B average in all of the graduate courses taken during their senior year, they will automatically be allowed to continue in the MA program, and the graduate courses completed during their senior year will double count towards completion of the MA requirements.

### Program Structure

- Students accepted into the program will be able to take up to 15 hours of graduate courses in Communication Studies (COMM) during their senior year. During the senior year, students will be required to take COMM-C500 (Advanced Communication Theory) and COMM-C501 (Quantitative Research Methods). In addition, students may enroll in up to 9 additional hours of 500-level COMM classes. These courses will count towards the student's B.A. (NOTE: All courses counting to the B.A. major must be completed with a grade of C or higher).
- In Year 5, after earning their B.A., students will complete the remaining hours of course work

required for the M.A. in Applied Communication as well as their ALP (Applied Learning Project) or Thesis. Students may elect to take classes during the summer between the 4th and 5th year or to write the ALP/Thesis in the summer after the 5th year.

### Sample Curriculum

This sample curriculum provides an example of the Communication Studies courses a student could take to complete the major requirements for their B.A. and their M.A. in 5 years, based on the current curriculum map for the B.A. in Communication Studies.

Sophomore Year-Fall:

- G100: Introduction to Communication Studies

Sophomore Year-Spring:

- G201: Introduction to Communication Theory

Junior Year-Fall:

- G310: Introduction to Communication Research
- Communication Studies Elective (i.e., M150: Media in Contemporary Society)

Junior Year-Spring:

- Communication Studies Elective (i.e., R321: Persuasion)
- Communication Studies Elective (i.e., R310: Rhetoric, Society & Culture)

NOTE: During this semester, qualified students should apply for the Dual BA/MA program

Senior Year-Fall:

- C500: Advanced Communication Theory
- Graduate Communication Studies Elective (i.e., C580: Advanced Organizational Communication)

Senior Year-Spring:

- C501: Applied Quantitative Research
- Graduate Communication Studies Elective (i.e., C528: Group Communication and Organizations)
- Graduate Communication Studies Elective (i.e., C544: Advanced Relational Communication)

NOTE: At the end of this semester, the student must have completed all of the requirements for a B.A. with a major in Communication Studies. One of the graduate-level courses will substitute for the B.A. Capstone requirement.

Fifth Year-Fall:

- Second Core Methods class (i.e., C531: Media Theory and Criticism)
- Graduate Communication Studies Elective (i.e., C594: Comm. & Conflict Management in Org.)
- Graduate Communication Studies Electives (i.e., C582: Intercultural Communication)

Fifth Year-Spring:

- Graduate Communication Studies Elective (i.e., C520: Advanced Public Communication)
- ALP (Applied Learning Project) or Thesis (3 credit hours)

## Faculty

### Chairperson

Associate Professor Kristine Karnick\*

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Linda G. Bell\*, John Parrish-Sprowl\*, Sandra Petronio\*, Kristina Horn Sheeler\*, Elizabeth Goering\*

### Associate Professors

Maria Brann\*, Jennifer J. Bute\*, Catherine A. Dobris, Kristine Karnick\*, Marianne Matthias\*, Kim White-Mills\*

### Assistant Professors

Katharine Head, Krista Hoffman-Longtin

### Director of Graduate Studies

Marianne Matthias, Department of Communication Studies, Cavanaugh Hall 309B, IUPUI, (317) 278-3154, [mmatthia@iupui.edu](mailto:mmatthia@iupui.edu)

## Courses

- **COMM-C 500 Advanced Communication Theory (3 cr.)** Students explore how scholars from various traditions have described and explained the universal human experience of communication. Students develop an understanding of a variety of communication theories to more completely interpret events in more flexible, useful, and discriminating ways.
- **COMM-C 501 Applied Quantitative Research Methods in Communication Studies (3 cr.)** The course is designed to offer an opportunity to examine, assess, and conduct quantitative research that employs communication theory and quantitative research methods as a means to test theory in applied settings and/or as a means to applied ends (i.e., problem-solving policy analysis).
- **COMM-C 502 Applied Qualitative Research Methods in Communication Studies (3 cr.)** P: 6 credits (at any level) of coursework in Communication Studies. Inductive (data-to-theory) approach to knowledge, and associated sequential and non-sequential methods for studying communication in applied everyday situations, e.g., friendships and other close personal dyads, families, small groups, organizations, and public, media, historical, computer mediated, or health-related contexts.
- **COMM-C 503 Applied Learning Project (3 cr.)** An applied learning project that provides students with a culminating educational experience. The project gives students the opportunity to apply their knowledge of communicative processes to real-life organizational problems, and provides the opportunity to produce a body of work reflecting their abilities.
- **COMM-C 504 Professional Seminar in Communication Graduate Studies (3 cr.)** The course provides an orientation to graduate school

expectations and a stronger grasp of the diverse approaches (methods) to constructing knowledge via Communication Studies Research. Students will be expected to perform at graduate level standards in: 1) writing for an academic audience; 2) thinking and arguing critically; and 3) analyzing and synthesizing published research.

- **COMM-C 505 Proseminar in Communication Studies Pedagogy (3 cr.)** This course is designed to provide students with a survey of the concepts and strategies for effective pedagogy in communication. Emphasis is placed on building skills and confidence in designing lessons, using appropriate instructional and assessment strategies, and developing a unique and coherent teaching philosophy.
- **COMM-C 510 Health Provider-Consumer Communication (3 cr.)** Designed to teach communication skills and practices related to health care talk by examining transactional communication within health care contexts. Topics covered in this course focus directly upon interpersonal dialogue between health care providers and patients.
- **COMM-C 520 Advanced Public Communication (3 cr.)** Theory and application of oral communication integral to institutional and corporate professionals. Critical analysis of representative manuscripts of American speechmaking, and development and presentation of forms and types of public address for professionals.
- **COMM-C 521 Family Comm in Health Contexts (3 cr.)** This interdisciplinary seminar focuses on communication involving families in health care settings, addressing significant issues for graduate/professional students who will work with families, including students in Comm. Studies, Nursing, Psychology, Social Work, Public Health, and Medicine. Topics include communication with families about health care concerns and family-patient-health provider systems
- **COMM-C 526 Effective Media Strategies (3 cr.)** This course specifically focuses on the effective use of media as a means of persuasion. This course explains how ideas are expressed through techniques unique to the language of radio, television, film, and the Internet.
- **COMM-C 528 Group Communication and Organizations (3 cr.)** This seminar-format course examines the ways in which informal groups and communication networks facilitate a variety of organizational processes (i.e., socialization, diffusion of innovation). Emphasis is placed on developing theoretical understanding of informal groups in organizations as well as on methodological issues involved in studying communication networks in organizations.
- **COMM-C 530 Communication Criticism (3 cr.)** This course will introduce students to criticism as a method of studying persuasive messages in speeches, fiction, mass media, musical lyrics, political campaign literature, art, and other modes of communication in contemporary culture.
- **COMM-C 531 Media Theory and Criticism (3 cr.)** A course organized primarily around theories and critical strategies commonly considered within the broad category of contemporary criticism. The course utilizes primary theoretical texts to introduce students to a variety of methodologies employed in analyzing media messages, and emphasizes the application of theoretical frameworks on the analysis of specific media texts.
- **COMM-C 544 Advanced Relational Communication (3 cr.)** An introductory course in interpersonal communication. Applications of communication theory/research in such areas as relational culture and relationship development. Includes a scholarly project on a real relationship, and applications of research to areas such as pedagogy and couple/family therapy.
- **COMM-C 580 Advanced Organizational Communication (3 cr.)** The course provides a solid foundation of concepts for understanding and discussing human organizations. Students will analyze, evaluate, and apply the theories and practices related to organizational issues. Through case studies, readings, and practical applications, this course combines a theory-based understanding of communication in organizations with real-world applications.
- **COMM-C 582 Advanced Intercultural Communication (3 cr.)** Exploration of issues related to the intercultural communication process. Consideration of the role of social, cultural, and historical contexts in intercultural interactions. Examination of the relationship between culture and communication from the socio-psychological, interpretive, and critical perspectives.
- **COMM-C 591 Topics/Seminar in Applied Communication (3 cr.)** This is a revolving topics course. The changing nature of the topic allows graduate students to explore, synthesize, and integrate knowledge of the field of communication and the particular discipline of applied communication while focusing on a single topic not otherwise addressed in the course of study.
- **COMM-C 592 Advanced Health Communication (3 cr.)** A course designed to teach communication skills and practices related to health care by examining health care communication theory. Topics range across communication levels (interpersonal, intrapersonal, group, organization, mass media, and mediated communication) within a variety of health care contexts.
- **COMM-C 593 Advanced Family Communication (3 cr.)** Applications of theory and research on the role of communication in creating and maintaining marriages/committed couples and families. Includes a scholarly term paper on a real couple or family's communication.
- **COMM-C 594 Communication and Conflict Management in Organizations (3 cr.)** This seminar-format course examines the communication exchanges that facilitate conflict management within organizational contexts. Specific attention is focused on negotiation and mediation; however, the communication of alternative means of conflict and dispute resolution are also discussed. In addition, students will be introduced to methods for assessing conflict interaction in organizations.

- **COMM-C 597 Thesis (3 cr.)** Applied communication students who choose the thesis option will identify a research topic and develop it under the guidance of the student's thesis director (IUPUI professor). The thesis topic will be related to the field of applied communication in its foci and method.
  - **COMM-C 598 Internship (1-3 cr.)** This course integrates applied communication theory and practice in a practice setting. Students will apply theoretical concepts and research tools, conduct projects, and interact with communication professionals in the designated setting. In concert with the student's chosen area of concentration, he or she will address issues of importance to that particular organization.
  - **COMM-C 599 Independent Study (1-6 cr.)** This course provides students with the opportunity to synthesize and apply knowledge acquired through course work and professional experience into a completed research project in applied communication. Students will work independently on a topic/issue of choice under the guidance of graduate faculty.
  - **COMM-G 598 Communication Studies Thesis Research (0 cr.)** Master's students who have enrolled in 30 or more hours of graduate course work applicable to the degree and who have completed all other requirements of the degree except the thesis of the final project of performances may enroll in COMM G598. Requires section authorization.
  - **COMM-C 620 Computer-Mediated Communication (3 cr.)** An overview of practical and scholarly approaches to computer mediated communication. The readings address mass communication, discourse, community, gender, intercultural understanding, ethics, interpersonal relationships, identity, organizational communication, and education.
  - **COMM-C 621 Persuasion (3 cr.)** This course takes a rhetorical/critical approach to persuasion in its broadest sense, how it affects our lives everyday and how we can find evidence of persuasive tactics in unexpected places. We will look broadly at theories of persuasion and their application across contexts and fields.
  - **COMM-C 644 Political Communications (3 cr.)** This course will examine the public communication involved in various political contexts. We will consider the communication involved in political campaigns, advertising, and oratory; social media, technology, and popular culture; the news, framing, and political media; citizenship, public deliberation, and decision making in what some argue is a divided political culture. We will read and discuss state of the art research in political communication and meet individuals who are currently working in a communication capacity in public political campaigns.
  - **COMM-C 650 Health Communication Media (3 cr.)** Focus on the effect of media on health behavior. Theories of health behavior change and media effects examined; applications of theory to health campaigns evaluated. Examples of mediated health campaigns and effectiveness discussed.
- Considerations include: interplay among theory, research, practice; how theory informs practice; how research aids in theory construction/refinement.
- **COMM-C 500 Advanced Communication Theory (3 cr.)** Students explore how scholars from various traditions have described and explained the universal human experience of communication. Students develop an understanding of a variety of communication theories to more completely interpret events in more flexible, useful, and discriminating ways.
  - **COMM-C 501 Applied Quantitative Research Methods in Communication Studies (3 cr.)** The course is designed to offer an opportunity to examine, assess, and conduct quantitative research that employs communication theory and quantitative research methods as a means to test theory in applied settings and/or as a means to applied ends (i.e., problem-solving policy analysis).
  - **COMM-C 502 Applied Qualitative Research Methods in Communication Studies (3 cr.)** P: 6 credits (at any level) of coursework in Communication Studies. Inductive (data-to-theory) approach to knowledge, and associated sequential and non-sequential methods for studying communication in applied everyday situations, e.g., friendships and other close personal dyads, families, small groups, organizations, and public, media, historical, computer mediated, or health-related contexts.
  - **COMM-C 503 Applied Learning Project (3 cr.)** An applied learning project that provides students with a culminating educational experience. The project gives students the opportunity to apply their knowledge of communicative processes to real-life organizational problems, and provides the opportunity to produce a body of work reflecting their abilities.
  - **COMM-C 510 Health Provider-Consumer Communication (3 cr.)** Designed to teach communication skills and practices related to health care talk by examining transactional communication within health care contexts. Topics covered in this course focus directly upon interpersonal dialogue between health care providers and patients.
  - **COMM-C 520 Advanced Public Communication (3 cr.)** Theory and application of oral communication integral to institutional and corporate professionals. Critical analysis of representative manuscripts of American speechmaking, and development and presentation of forms and types of public address for professionals.
  - **COMM-C 521 Family Comm in Health Contexts (3 cr.)** This interdisciplinary seminar focuses on communication involving families in health care settings, addressing significant issues for graduate/professional students who will work with families, including students in Comm. Studies, Nursing, Psychology, Social Work, Public Health, and Medicine. Topics include communication with families about health care concerns and family-patient-health provider systems
  - **COMM-C 526 Effective Media Strategies (3 cr.)** This course specifically focuses on the effective use of media as a means of persuasion. This

course explains how ideas are expressed through techniques unique to the language of radio, television, film, and the Internet.

- **COMM-C 528 Group Communication and Organizations (3 cr.)** This seminar-format course examines the ways in which informal groups and communication networks facilitate a variety of organizational processes (i.e., socialization, diffusion of innovation). Emphasis is placed on developing theoretical understanding of informal groups in organizations as well as on methodological issues involved in studying communication networks in organizations.
- **COMM-C 530 Communication Criticism (3 cr.)** This course will introduce students to criticism as a method of studying persuasive messages in speeches, fiction, mass media, musical lyrics, political campaign literature, art, and other modes of communication in contemporary culture.
- **COMM-C 531 Media Theory and Criticism (3 cr.)** A course organized primarily around theories and critical strategies commonly considered within the broad category of contemporary criticism. The course utilizes primary theoretical texts to introduce students to a variety of methodologies employed in analyzing media messages, and emphasizes the application of theoretical frameworks on the analysis of specific media texts.
- **COMM-C 544 Advanced Relational Communication (3 cr.)** An introductory course in interpersonal communication. Applications of communication theory/research in such areas as relational culture and relationship development. Includes a scholarly project on a real relationship, and applications of research to areas such as pedagogy and couple/family therapy.
- **COMM-C 580 Advanced Organizational Communication (3 cr.)** The course provides a solid foundation of concepts for understanding and discussing human organizations. Students will analyze, evaluate, and apply the theories and practices related to organizational issues. Through case studies, readings, and practical applications, this course combines a theory-based understanding of communication in organizations with real-world applications.
- **COMM-C 582 Advanced Intercultural Communication (3 cr.)** Exploration of issues related to the intercultural communication process. Consideration of the role of social, cultural, and historical contexts in intercultural interactions. Examination of the relationship between culture and communication from the socio-psychological, interpretive, and critical perspectives.
- **COMM-C 591 Topics/Seminar in Applied Communication (3 cr.)** This is a revolving topics course. The changing nature of the topic allows graduate students to explore, synthesize, and integrate knowledge of the field of communication and the particular discipline of applied communication while focusing on a single topic not otherwise addressed in the course of study.
- **COMM-C 592 Advanced Health Communication (3 cr.)** A course designed to teach communication skills and practices related to health care by examining health care communication theory. Topics range across communication levels (interpersonal, intrapersonal, group, organization, mass media, and mediated communication) within a variety of health care contexts.
- **COMM-C 593 Advanced Family Communication (3 cr.)** Applications of theory and research on the role of communication in creating and maintaining marriages/committed couples and families. Includes a scholarly term paper on a real couple or family's communication.
- **COMM-C 594 Communication and Conflict Management in Organizations (3 cr.)** This seminar-format course examines the communication exchanges that facilitate conflict management within organizational contexts. Specific attention is focused on negotiation and mediation; however, the communication of alternative means of conflict and dispute resolution are also discussed. In addition, students will be introduced to methods for assessing conflict interaction in organizations.
- **COMM-C 597 Thesis (3 cr.)** Applied communication students who choose the thesis option will identify a research topic and develop it under the guidance of the student's thesis director (IUPUI professor). The thesis topic will be related to the field of applied communication in its foci and method.
- **COMM-C 598 Internship (1-3 cr.)** This course integrates applied communication theory and practice in a practice setting. Students will apply theoretical concepts and research tools, conduct projects, and interact with communication professionals in the designated setting. In concert with the student's chosen area of concentration, he or she will address issues of importance to that particular organization.
- **COMM-C 599 Independent Study (1-6 cr.)** This course provides students with the opportunity to synthesize and apply knowledge acquired through course work and professional experience into a completed research project in applied communication. Students will work independently on a topic/issue of choice under the guidance of graduate faculty.
- **COMM-G 598 Communication Studies Thesis Research (0 cr.)** Master's students who have enrolled in 30 or more hours of graduate course work applicable to the degree and who have completed all other requirements of the degree except the thesis of the final project of performances may enroll in COMM G598. Requires section authorization.
- **COMM-C 620 Computer-Mediated Communication (3 cr.)** An overview of practical and scholarly approaches to computer mediated communication. The readings address mass communication, discourse, community, gender, intercultural understanding, ethics, interpersonal relationships, identity, organizational communication, and education.
- **COMM-C 621 Persuasion (3 cr.)** This course takes a rhetorical/critical approach to persuasion in its broadest sense, how it affects our lives everyday and how we can find evidence of persuasive tactics in unexpected places. We will look broadly at



theories of persuasion and their application across contexts and fields.

- **COMM-C 644 Political Communications (3 cr.)**  
This course will examine the public communication involved in various political contexts. We will consider the communication involved in political campaigns, advertising, and oratory; social media, technology, and popular culture; the news, framing, and political media; citizenship, public deliberation, and decision making in what some argue is a divided political culture. We will read and discuss state of the art research in political communication and meet individuals who are currently working in a communication capacity in public political campaigns.
- **COMM-C 650 Health Communication Media (3 cr.)** Focus on the effect of media on health behavior. Theories of health behavior change and media effects examined; applications of theory to health campaigns evaluated. Examples of mediated health campaigns and effectiveness discussed. Considerations include: interplay among theory, research, practice; how theory informs practice; how research aids in theory construction/refinement.
- **COMM-C 680 Qualitative Research Methods (3 cr.)** Qualitative Research Methods is an introduction to qualitative research methods in communication studies, with an emphasis on health communication research. This course provides a survey of qualitative methodology, including metatheoretical foundations, planning a qualitative study, and gathering and analyzing qualitative data.

## Applied Statistics

### School of Science

#### Contact Information

Department of Mathematical Sciences, LD 270, IUPUI,  
(317) 274-6918

**Program Email:** [mathgrad@iupui.edu](mailto:mathgrad@iupui.edu)

**Program URL:** M.S. Applied Statistics: <http://math.iupui.edu/graduate/degrees/ms/stats>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Ph.D. Minor in Applied Statistics

The Department of Mathematical Sciences in the School of Science at IUPUI offers a master's degree program and a Ph.D. degree program in mathematical sciences with a specialization in applied statistics. Accordingly, some doctoral students on the IUPUI campus may find it useful to have a minor in applied statistics as an additional option in their program of study. The Department of Mathematical Sciences also offers a Ph.D. in Statistics and Biostatistics in conjunction with the IU School of Public Health.

#### Other Degree Offerings

The Department also offers a Ph.D. in mathematics focusing on mathematical statistics as well as a Ph.D. degree in biostatistics which is offered jointly with the

Department of Biostatistics of the Richard M. Fairbanks School of Public Health and the IU School of Medicine.

### Course Requirements

Twelve credit hours in courses approved for the minor in applied statistics, including STAT 51100, STAT 51200, and six additional credit hours chosen in consultation with the minor representative. For students in medical and molecular genetics, a common option would be to take two of the courses from 52300, 52400, 52500 and 53300. Statistical Quality Control (51300) might be a desirable elective for students in pharmacology and toxicology. Students who have successfully completed GRAD G651 Introduction to Biostatistics I and GRAD G652 Introduction to Biostatistics II in the School of Medicine will be exempted from STAT 51100.

### Examinations

The exact requirements for the minor and the examination procedure prior to admittance to candidacy are determined by the student's minor representative on his or her advisory committee from the Department of Mathematical Sciences.

### Faculty

Curriculum Courses Faculty

#### Director

Chancellor's Professor Benzion Boukai\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Professors

Benzion Boukai\*, Jyotirmoy Sarkar\*

#### Associate Professors

Hanxiang Peng\*, Fang Li\*, Fei Tan\*, Wei Zheng\*

#### Assistant Professors

Zuofeng Shang, Honglang Wang\*

### Courses

Curriculum Courses Faculty

#### Core Courses

- **STAT 51100 Statistical Methods (3 cr.)**
- **STAT 51200 Applied Regression Analysis (3 cr.)**

#### Other Courses

- **STAT 51300 Statistical Quality Control (3 cr.)**
- **STAT 51400 Design of Experiments (3 cr.)**
- **STAT 51500 Statistical Consulting Problems (3 cr.)**
- **STAT 51900 Introduction to Probability (3 cr.)**
- **STAT 52000 Time Series and Applications (3 cr.)**
- **STAT 52100 Statistical Computing (3 cr.)**
- **STAT 52200 Sampling and Survey Techniques (3 cr.)**
- **STAT 52300 Categorical Data Analysis (3 cr.)**
- **STAT 52400 Applied Multivariate Analysis (3 cr.)**
- **STAT 52501 Generalized Linear Model (3 cr.)**
- **STAT 52800 Mathematical Statistics I (3 cr.)**

- **STAT 52900 Bayesian Statistics and Applied Decision Theory (3 cr.)**
- **STAT 53200 Elements of Stochastic Processes (3 cr.)**
- **STAT 53300 Introduction to Survival Analysis (3 cr.)**
- **STAT 53600 Nonparametric Statistics (3 cr.)**

## Biochemistry and Molecular Biology

### School of Medicine

Departmental E-mail: [biochem@iupui.edu](mailto:biochem@iupui.edu)

Departmental URL: <https://medicine.iu.edu/biochemistry-molecular-biology/education-programs/graduate-degrees>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Science and Doctor of Philosophy; Ph.D. Minor in Diabetes and Obesity

#### Special Departmental Requirements

(See also general University Graduate School requirements and departmental website.)

#### Admission Requirements

Typically, a baccalaureate degree in biology, chemistry, or physics that includes calculus and organic chemistry is required for admission.

Master of Science in Biochemistry and Molecular Biology

#### Thesis Option

A minimum of 30 credit hours, including two of the following courses – GRDM-G715, GRDM-G716, BIOC-B500, or GRDM-G865. Each student will also take GRDM-G505 and two of the seven 2-credit Biochemistry core courses (BIOC-B811, GRDM-G805, GRDM-G807, GRDM-G817, GRDM-G848, GRDM-G852, GRDM-G825); and at least nine credit hours in research. In addition, each student will complete the research communication course BIOC-B890. A thesis will be written and successfully defended to the thesis committee.

#### Final Examination

An oral examination is administered, covering thesis and course work.

#### Non-thesis option

In lieu of research credits (BIOC-B855, the second semester of GRDM-G828), and a thesis, students can opt to take GRDM-G865, BIOC-B811, GRDM-G910, or PBHL-B651 to fulfill the requirements for a non-thesis Masters. Elective courses approved by the Graduate Advisor would be taken to reach a total of 30 hrs. For the non-thesis Master's students, the Graduate Advisor will oversee students, review their progress, and provide mentoring and course advice. These students will meet with the Graduate Advisor upon their arrival on campus

and develop a plan of study. Students will meet with the Graduate Advisor after receiving their fall semester grades to evaluate progress toward their degree and to make adjustments to their plan of study if necessary. Students will also meet with the Graduate Advisor early in the next summer to ensure that their progress will lead to completion of the program by the end of the summer or to adjust their plan of study if necessary.

### Doctor of Philosophy in Biochemistry and Molecular Biology

Students are admitted through the IBMG (Indiana University School of Medicine BioMedical Gateway) open enrollment program and will take a common curriculum in the first semester. They will commit to the Biochemistry and Molecular Biology program after the second semester.

### CURRICULUM FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY Ph.D. PROGRAM

#### Required General Courses

- GRDM-G507: Reagent Validation as a Means of Enhancing Research Reproducibility (1 cr.)
- GRDM-G855 Experimental Design and Research Biostatistics (1 cr.)
- A course in "Responsible Conduct in Research", e.g. GRDM-G504, GRDM-G505, GRDM-G506
- A course in Science Communication: Students take one of the following: COMM-C524, COMM-C533, or ENG-W533

#### Required Biochemistry and Molecular Biology Courses

- BIOC-B803: Advanced Biochemistry (1 cr.)
- BIOC-B890: Seminar (1 cr., students must complete 4 semesters of B890 before they may advance to candidacy)

**Biochemistry Major Electives** Students must take at least two of the eight 2-credit Biochemistry "core" courses (GRDM-G805, GRDM-G807, BIOC-B811, GRDM-G817, GRDM-G825, GRDM-G826, GRDM-G848, GRDM-G852,) shown below. These classes are usually taken during the spring term of year one, year 2, or occasionally during year 3.

- GRDM-G805 Diabetes and Obesity (2 cr.)
- GRDM-G807 Structural and Chemical Biology (2 cr.)
- BIOC-B811 Advanced Intermediary Metabolism (1-3 cr.)
- GRDM-G817 Molecular Basis of Cell Structure and Function (2 cr.)
- GRDM-G825 Advanced Topics in Molecular Biology (2 cr.)
- GRDM-G826 Heterologous of Production of Proteins and Small Molecules (2 cr.)
- GRDM-G848 Bioinformatics, Genomics, Proteomics and Systems Biology (2 cr.)
- GRDM-G852 Concepts of Cancer Biology: Signaling Gone Awry (2 cr.)

**Bioc-B803-** This course in grant writing will culminate in the submission and oral defense of an "NIH or NSF style" grant proposal on the students intended research topic. The assigned grade for this course is dependent on the successful defense of the proposal that will serve

as a qualifying exam and be required for Advancement to Candidacy.

### Years 2-5

During years 2 through 5, the student will take didactic courses as needed to fulfill either requirements for the biochemistry major or their chosen minor. The student will typically register for a total of 10 cr. hours each fall and spring, including 1 cr. hour of BIOC-B890 for four semesters. The student will advance to candidacy upon completion of 30 or more didactic hours of coursework and successful defense of their thesis proposal.

Work will begin in the field of the candidate's thesis. Emphasis on ability to pursue research with relative independence and responsibility.

### Notes:

- Students will be questioned on topics outside of their thesis work during the oral defense of their thesis proposal. Passing of this defense (with B/3.0 grade or better) will be required for advancement to candidacy.
- Students will present a seminar twice while enrolled in B890 as well as attend all student and faculty seminars. Students will present one of the following: a research seminar, a proposal seminar (3rd year students preparing for their qualifying exams are encouraged to consider this type of presentation), or a "literature club" type of seminar (open to students at any level), where the student presents a paper from the literature. Students enrolled in BIOC-G901 are encouraged to consider giving a research presentation in BIOC-B890, even though they are not enrolled in the course.
- After choosing a laboratory for thesis research, an advisory committee consisting of at least two Biochemistry and Molecular Biology faculty members and one external faculty member will be formed with the approval of the thesis advisor and departmental chairperson. Upon advancement to candidacy, a thesis research committee will be similarly formed that may consist of different faculty. The Research Committee must consist of at least three Biochemistry and Molecular Biology faculty members and one external faculty member.
- Students must score at least B- on each course and maintain at least a B average (3.0 minimal GPA).
- The minor representative will be selected from outside the student's major department.

### Grades

A minimum grade point average of 3.0 (B) must be maintained in all non-research course work.

### Advancement to Candidacy

BIOC-B803 Advanced Biochemistry is a course in grant writing which will culminate in the submission and oral defense of an "NIH- or NSF-style" grant proposal on the student's intended research topic.

Students meet at least once every six months with an advisory committee to review progress in course work. Continuation in the program depends upon satisfactory performance and progress in each phase of the program. The final examination in the series is an oral defense of

a written research proposal, which constitutes the written examination.

### Dissertation

A minimum of 45 credit hours in research, completed with a grade point average of 3.0 (B) or above. It is expected that the dissertation will qualify for publication in a recognized journal.

### Final Examination

Oral, covering dissertation, major, and minor coursework.

### Ph.D. Minor in Cancer Biology

The Ph.D. Minor in Cancer Biology is administered by the Department of Microbiology & Immunology. Cancer Biology Training Program (CBTP) faculty are members of the Indiana University Cancer Center, the matrix organization for an extensive range of cancer efforts and activities. Ongoing NIH- and ACS-funded research programs focus on regulation of cell growth, hematopoiesis, experimental therapeutics, adult oncology, and pediatric oncology. CBTP students will fulfill the requirements of their individual basic science departments and complete the cancer biology minor.

### Ph.D. Minor in Diabetes and Obesity

A minimum of 12 credit hours beyond the requirements of the student's major Ph.D. program. The minor must include GRDM-G805 Diabetes and Obesity and GRDM-G505 Responsible Conduct of Research. If G805 has been taken to fulfill other requirements, it may be substituted by elective course(s) from the list below with the approval of the student's advisory committee.

The remainder of the Minor will be selected from the following courses:

GRDM-G655 Research Communication Seminar (1 cr.)  
 GRDM-G855 Experimental Design and Research Biostatistics (1 cr.)  
 GRDM-G715 Biomedical Science I; Biochemical Basis of Biological Processes (3 cr.)  
 GRDM-G716 Biomedical Science II; Molecular Biology and Genetics (3 cr.)  
 GRDM-G717 Biomedical Science III; Cellular Basis of Systems Biology (3 cr.)  
 GRDM-G805 Structural and Chemical Biology (2 cr.)  
 GRDM-G817 Molecular Basis of Cell Structure and Function (2 cr.)  
 GRDM-G825 Advanced Topics in Molecular Biology (2 cr.)  
 GRDM-G848 Bioinformatics, Genomics, Proteomics and Systems Biology (2 cr.)  
 GRDM-G852 Concepts of Cancer Biology: Signaling gone awry (2 cr.)  
 GRDM-F782 Physiology and Pathology of Lipid Rafts (1 cr.)  
 GRDM-G640 Epithelial Cell Biology (1 cr.)  
 GRDM-G703 Physiology of the Coronary Circulation (1 cr.)  
 GRDM-G704 Physiological Proteomics (1 cr.)  
 GRDM-G706 Designer Mice (1 cr.)  
 GRDM-G707 Physiology of Smooth Muscle (1 cr.)  
 GRDM-G708 Cardiac and Coronary Physiology of Exercise (1 cr.)  
 GRDM-G712 In Vivo Microcirculatory Physiology (1 cr.)  
 GRDM-G713 Angiogenesis (1 cr.)

GRDM-G736 Endocrine and Gastrointestinal Function in Health and Disease (1 cr.)  
 GRDM-G761 Molecular and Cellular Physiology of Ion Channels  
 MGEN-Q580 Basic Human Genetics (3 cr.)  
 MGEN-Q612 Molecular and Biochemical Genetics (3 cr.)  
 MGEN-Q620 Human Cytogenetics (3 cr.)  
 MGEN-Q630 Population Genetics (3 cr.)  
 GRDM-G725 Gene Transfer Approaches to Clinical and Basic Research (Gene Therapy) (1 cr.)  
 GRDM-G727 Animal Models of Human Disease (1 cr.)  
 MICR-J807 Current Topics in Immunity (2 cr.)  
 MICR-J829 Current Topics in Molecular Genetics of Microorganisms (2 cr.)  
 GRDM-G720 Stem Cell Biology (2 cr.)  
 GRDM-G728 Fundamentals of Infection and Pathogenesis (1 cr.)  
 GRDM-G729 Immunology I: Introduction to the Immune System (1 cr.)  
 GRDM-G747 Principle of Pharmacology (1 cr.)  
 GRDM-G748 Principles of Toxicology 1 (1 cr.)  
 GRDM-G748 Principles of Toxicology 2 (1 cr.)  
 GRDM-G748 Principles of Toxicology 3 (1 cr.)  
 GRDM-G745 Fundamentals of Intracellular Signal Transduction (2 cr.)  
 GRDM-G751 Advanced Concepts in Cytosolic and Nuclear Signal Transduction (2 cr.)

The Minor program must be approved by the student's Advisory Committee, which will take into consideration the student's total didactic experience. In the case of combined M.D./Ph.D. students, the Committee may approve substitution of appropriate medical school courses. The minor representative on this Committee will be selected from outside the student's major department and must be a member of the Diabetes and Obesity Training Program.

More information is available on the Diabetes and Obesity Research Training Program at the Center for Diabetes Research website: <http://biochemistry.iu.edu/resources/center-for-diabetes-research/diabetes-and-obesity-research-training-program/>

## Faculty

### Chairman

Michael Weiss\*

### Associate Chair for Chemical Biology

Millie Georgiadis\*

### Associate Chair for Education

Mark Goebel\*

## Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

## Primary Biochemistry Faculty

### Distinguished Professors

Howard Edenberg\*, Peter J. Roach\*, Michael Weiss

### Chancellor's Professors

Howard Edenberg\*, Thomas D. Hurley\*, Peter Roach\*

## Professors

Charlie (Xiaocheng) Dong\*, Millie Georgiadis\*, Mark G. Goebel\*, Maureen A. Harrington\*, Lawrence A. Quilliam\*, Ronald C. Wek\*

## Associate Professors

Quyen Hoang\*, Steven Johnson\*, Samy Meroueh\*, Amber Mosley\*, Yuro Takagi\*, Clark Wells\*

## Assistant Professors

Scott Aoki, Evan Cornet, Jaeyeon, Kim\*, Edward Motea, Hyun Cheol Roh, Jonah Vilseck, Wen Zhang

## Associate Research Professors

Erik Bey, Mark Jarosinski, Alexandre Skurat, Yanwu Yang

## Assistant Research Professors

Arunangsu Dey, Ann Kimble-Hill, Jingwei Meng, Kirk Staschke, Lifan Zeng

## Assistant Scientists

Khuchtumur Bum-Erdene, EmmaDoud

## Adjunct Senior Research Professors

Josef Heuer, Jirong Lu

## Adjunct Professor

Terence Yen, Zhong-Yin Zhang

## Adjunct Associate Professor

Andy Hudmon

## Adjunct Assistant Professors

Teresa Mastracci, Melissa Winget-Reardon

## Primary Emeritus Faculty Professors

William Bosron, Anna A. DePaoli-Roach, Keith Dunker, David M. Gibson, Jean Hamilton-Steinrauf, Edwin Harper, Robert Harris

## Associate Research Professor

Jeannette McClintick

## Secondary Biochemistry Faculty Professors

Gianfranco Alpini\* (Medicine), Gustavo Arrizabalaga\* (Pharmacology and Toxicology), Wade Clapp\* (Pediatrics), Robert Considine\* (Medicine), Kenneth W. Dunn\* (Nephrology), Joseph Dynlacht\* (Radiation Oncology), Carmella Evans-Molina\* (Medicine), Anthony Firulli\* (Pediatrics), Heather Francis\* (Medicine), Mark Kaplan\* (Microbiology and Microbiology), Reuben Kapur\* (Pediatrics), Mark Kelley\* (Pediatrics), Suthat Liangpunsakul (Medicine), Harikrishna Nakshatri\* (Surgery), G. David Roodman\* (Medicine), Weinian Shou\* (Pediatrics), John Turchi\* (Hematology/Oncology), Teresa Zimmers-Koniaris\* (Surgery)

## Associate Professors

Timothy Corson\* (Ophthalmology), Jeffrey S. Elmendorf\* (Physiology), Yan Liu\* (Pediatrics), Tao Lu\* (Pharmacology and Toxicology), Weiming



Mao\* (Ophthalmology), Lindsey Mayo\* (Pediatrics), Fanyin Meng\* (Medicine), Nuria Morral\* (Medical and Molecular Genetics), Shannon Hawkins\* (Obstetrics and Gynecology), Fabiana Perna\* (Medicine), James P. Walsh\* (Medicine), Bo Zhao\* (Otolaryngology-Head & Neck Surgery)

#### Assistant Professors

Eric Benson (Medicine), Arupratan Das (Ophthalmology), Amelia Linnemann (Pediatrics), Padmanabhan Pattabiraman (Ophthalmology), Emily Sims (Pediatrics), Jason Spaeth (Pediatrics)

#### Adjunct Professor

Michael McLeish\* (Chemistry), Stephen Randall\* (Biology), David Skalnik\* (Biology), James Stevens (Informatics), Terence Yen

#### Senior Research Professor

Mark Marshall (Pediatrics), Xiaoling Xuei (Medical and Molecular Genetics)

#### Associate Research Professor

Mark Wagner (Nephrology)

#### Assistant Research Professor

Dan Spandau (Dermatology)

#### Secondary Emeritus Faculty Professor

David Crabb (Medicine)

#### Center Faculty Professors

Michael W. King\* (IUSM—Terre Haute), Claire Walczak\* (IUSM-Bloomington), Theodore Widlanski\* (IU-Bloomington)

#### Associate Professor

David Daleke\* (IUSM—Bloomington), Dipika Gupta (IUSM - Northwest), Peter Hollenhorst\* (IUSM-Bloomington), Heather Hundley (IUSM-Bloomington)

#### Assistant Professors

Richard Carpenter (IUSM-Bloomington), Jennifer Proseri (IUSM-South Bend), G. Seetharamaiah (IUSM-Evansville),

#### Assistant Research Professor

Stephanie Ems-McClung (IUSM-Bloomington), Sumegha Mitra (IUSM-Bloomington)

#### Adjunct Professor

James Forney (IUSM-West Lafayette), Larry Fromm (IUSM-Muncie)

#### Adjunct Associate Professors

Scott Briggs (IUSM- West Lafayette),

#### Adjunct Assistant Professor

Yuk Fai Leung (IUSM-West Lafayette)

#### Adjunct Clinical Associate Professor

Andrew Brightman (IUSM-West Lafayette)

#### Visiting Associate Professor

Fang Liu (IUSM-Bloomington)

#### Adjunct Associate Scientist

Saleha Vuyyuri (IUSM-Bloomington)

#### Adjunct Senior Scientist

Keith Davis (IUSM-Bloomington)

#### Center Emeritus Faculty

Walter Balcavage\* (IUSM—Terre Haute), Barth Ragatz (IUSM-Fort Wayne)

#### Courses

- **BIOC-B 500 Introductory Biochemistry (3 cr.)**P: C341 or equivalent. Structures of carbohydrates, proteins, lipids, and nucleic acids. Basic principles of enzyme catalysis, protein synthesis, intermediary metabolism, and nutrition.
- **BIOC-B 800 Medical Biochemistry (3 cr.)**P: One semester of organic chemistry. Structure and function of biological molecules, regulation of cellular processes by nutrients and hormones, biochemical and molecular basis of disease. NOT CURRENTLY OFFERED.
- **BIOC-B 803 Advanced Biochemistry (arr-3 cr.)**Tutorial instruction in biochemistry.
- **BIOC-B 808 Physical Biochemistry (3 cr.)**P: Two semesters of physical chemistry; two semesters of calculus; one semester of biochemistry. Thermodynamics and biophysical chemistry of protein, enzymes, nucleic acids, and membranes. NOT CURRENTLY OFFERED.
- **BIOC-B 809 Advanced Organic Chemistry (1-3 cr.)**P: Two semesters of organic chemistry; two semesters of physical chemistry; B807 or consent of instructor. Tutorial instruction in organic chemistry, as applied to biochemistry. NOT CURRENTLY OFFERED.
- **BIOC-B 810 Cellular Biochemistry and Regulation (3 cr.)**P: Two semesters of organic chemistry; one semester of biochemistry. Mechanisms of signal transduction and the control of cellular function by hormones, growth factors, and other extracellular regulators.
- **BIOC-B 811 Advanced Intermediary Metabolism (1-3 cr.)**P: B810. Tutorial instruction in specialized areas of metabolism.
- **BIOC-B 814 Advanced Enzymology (1-3 cr.)**P: B807 or B810. Tutorial instruction in enzyme isolation and kinetics. NOT CURRENTLY OFFERED.
- **BIOC-B 821 Scientific Writing and Communication in Biotechnology (1 cr.)**P: B807 or B810. Discussion and individual instruction in the preparation of a research proposal and thesis in the biotechnology track of the M.S. in Biochemistry and Molecular Biology. NOT CURRENTLY OFFERED.
- **BIOC-B 822 Research in Biotechnology (1-5 cr.)**Research for biotechnology track in M.S. thesis. NOT CURRENTLY OFFERED.
- **BIOC-B 835 Neurochemistry (3 cr.)**P: Two semesters of organic chemistry; one semester of biochemistry, or consent of instructor. Metabolism



of nervous system tissue. Neurochemical techniques. NOT CURRENTLY OFFERED.

- **BIOC-B 836 Advanced Topics in Neurochemistry (2 cr.)**P: B835 or equivalent. Selected topics in neurochemistry dealing with specialized functions of the nervous system. NOT CURRENTLY OFFERED.
- **BIOC-B 842 Instrumentation and Methods of Analysis II (3 cr.)**P: Two semesters of organic chemistry; one semester of biochemistry. NOT CURRENTLY OFFERED.
- **BIOC-B 854 Introduction to Research (1 cr.)**P: Two semesters of organic chemistry; two semesters of physical chemistry, one semester of biochemistry, or consent of instructors. Tutorial and laboratory instruction in biochemistry. Purpose is to introduce students in biochemistry to three different research programs.
- **BIOC-B 855 Research (arr cr.)**
- **BIOC-B 868 Advanced Molecular Biology (1-3 cr.)**P: G865 or equivalent. Tutorial instruction in specialized area of molecular biology. NOT CURRENTLY OFFERED.
- **BIOC-B 890 Seminar (1 cr.)**
- **GRDM-G 749 Introduction to Structural Biology (1 cr.)**An introduction to structural biology including the fundamentals of macromolecular structure and interactions, methods used to determine three-dimensional structures, the relationship between protein sequence and structure, and prediction and analysis of macromolecular structure.
- **GRDM-G 804 Cellular and Molecular Biology (3 cr.)**P: One semester of organic chemistry. Cellular and molecular biology that emphasizes the structural organization, biochemistry, and molecular biology of cells. Includes cellular processes, development, and differentiation and their relationship to medicine. NOT CURRENTLY OFFERED.
- **GRDM-G 805 Diabetes and Obesity (2 cr.)**P: One semester of biochemistry. Biochemistry, cell biology, molecular biology, genetics, immunology, and pathophysiology of diabetes and obesity. Topics include metabolic regulation, signal transduction, insulin resistance, insulin production, beta-cell function, animal models, complications, nutrition, prevention, and therapy.
- **GRDM-G 807 Structural and Chemical Biology (2 cr.)**Fundamentals of structural and chemical biology focused on state-of-the-art approaches to inhibitor discovery, use of inhibitors in elucidating biological function, and computational and structural approaches to rational inhibitor design.
- **GRDM-G 817 Molecular Basis of Cell Structure and Function (2 cr.)**Organization and function of subcellular structures. Intracellular coordination of cell activities, including protein and RNA processing/trafficking/quality control, chromatin dynamics, and cell division.
- **GRDM-G 825 Advanced Topics in Molecular Biology (2 cr.)**The course will highlight selected topics adjusted each year to reflect the most current advancements in molecular biology and will include lectures and paper discussions on: chromatin structure and regulation; transcriptional control; RNA structure and processing; RNAi and miRNA; RNA

decay; translational control and its integration in gene expression.

- **GRDM-G 826 Heterologous Production of Proteins and Small Molecules (2 cr.)** This course will explore the cellular, molecular, and metabolic changes that must be introduced into models systems to allow both faithful expression and high abundance of both heterologous proteins and heterologous small molecules (synthetic biology).
- **GRDM-G 828 Concepts in Biotechnology (3 cr.)**P: B500 or equivalent. Case studies exploring topics on the cutting edge of biotechnology and tutorials in biotechnology calculations.
- **GRDM-G 848 Bioinformatics, Genomics, Proteomics, and Systems Biology (2 cr.)**Biology has been transformed by various high-throughput technologies (genomics, proteomics, metabolomics, etc.), which in turn have led to a large number of massive databases and software analysis packages. This course focuses on the "omics" technologies, on the resulting databases, and on the computational tools used to analyze the data.
- **GRDM-G 852 Concepts of Cancer Biology: Signaling Gone Awry (2 cr.)**Fundamentals of cancer biology; the signaling of events that regulate cell growth, survival, and differentiation; how mutation/dysregulation of signaling molecules leads to cancer and might be exploited for treatment.
- **GRDM-G 865 Fundamental Molecular Biology (3 cr.)**P: B800 or equivalent. Principles of molecular structure, function, and biosynthesis; core information regarding prokaryotic and eukaryotic gene continuity and metabolic coordination; introduction to multicellular systems and problems. (Joint program: biochemistry, medical genetics, microbiology.)
- **GRDM-G 890 Methods in Molecular Biology and Pathology (3 cr.)**P: G865 and/or J838, and consent of instructor. Basic principles and techniques in molecular biology and pathology. Particular emphasis will be on molecular techniques that can be used to study problems related to biochemistry and pathology.
- **GRDM-G 910 Advanced Molecular Biology Methods (3 cr.)**P: G865 and/or G890 and consent of instructor. Advanced theory and techniques in molecular biology. The focus of the course will be on techniques related to manipulation of cloned DNA to study their expression, structure, and function.

## Biomedical Sciences

### School of Medicine

Departmental E-mail: [gradism@iupui.edu](mailto:gradism@iupui.edu)

Departmental URL: <http://grad.medicine.iu.edu>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

Programs Offered

- IU School of Medicine Biomedical Gateway Program (doctoral admissions and gateway program)
- Business of Biomedical Science PhD Minor
- Policy Analysis for Biomedical Science PhD Minor

### **IU School of Medicine Biomedical Gateway (IMBG) Program**

#### **Overview**

The Indiana University School of Medicine BioMedical Gateway (IBMG) Program for Ph.D. study is the first year of study in the PhD program at Indiana University. As part of the student's enrollment, the student will take part in research and course work as part of the IBMG Program and is considered full-time. The curriculum for this experience is built around foundational courses leading to a choice of modular electives that match the student's research interest, a variety of laboratory research experiences, and strong support and mentoring. The following programs participate in the IBMG Program:

- Anatomy, Cell Biology, and Physiology (Translational Biomedical Research Track)
- Biochemistry and Molecular Biology
- Medical and Molecular Genetics
- Medical Neuroscience
- Microbiology and Immunology
- Musculoskeletal Health
- Pathology
- Pharmacology
- Toxicology

The IBMG Program serves as an open enrollment admissions program for our nine biomedical science programs. For more information on the application process and admissions criteria, contact the IBMG Program for PhD Study at [biomed@iupui.edu](mailto:biomed@iupui.edu) or find out more information at <https://medicine.iu.edu/education/graduate-degrees/phd/>.

#### **Program Requirements**

As a first year IBMG Program student, students take a shared curriculum with core first semester components, core required courses in the second and third semester, and many options to focus your studies in the second semester. During this time, emphasis is placed on the advising and mentoring of all first year students. Faculty mentors are advised and strongly encouraged to document their participation in the NIH NRMN-based IUSM workshop "Unlocking Your Inner Mentor" or the program offered by the IUPUI Mentoring Center

At the end of the first year, laboratory assignments will be made and you will then join the biomedical science Ph.D. degree program of your choosing. After choosing your program, you will then be responsible to complete the requirements listed in this Bulletin for your chosen program. Students will then each conduct an individual research project and complete the requirements of their respective degree programs.

For more information on the courses that are available as part of the program, visit the IU School of Medicine website at <http://grad.medicine.iu.edu>.

#### **Business of Biomedical Science PhD Minor**

*Students are not currently being admitted to this program*

#### **Overview**

The Business of Biomedical Sciences minor allows our trainees to be highly competitive for the careers in the 21st century biomedical workforce that require doctoral education. We take advantage of the existing structure of the IBMG Program for PhD study for the minor. The ten (10) credit hour "Business of Life Sciences" minor requires that students utilize existing courses in the Schools of Business, Law and Medicine. These courses are listed below in the doctoral minor plan of study.

#### **Admissions**

To be admitted to the Ph.D. minor in Business of Biomedical Sciences, you must be a currently enrolled doctoral student in good academic standing in any IU or IUPUI school. Students in any IU school or department are also welcome to apply.

Students who would like to apply to the Ph.D. minor in the Business of Biomedical Sciences, must submit via email to the Associate Dean for Research and Graduate Studies and minor contact for this minor, the following:

- Documentation of the approval of the student's pursuit of this minor by his/her PI and advisory committee.
- A one-page personal statement explaining the student's reason for pursuing this minor, including the relevance of the minor to their program and goals

Accepted students will be notified promptly via email by the minor contact.

#### **Course Requirements**

##### **Required Courses (8 credits total):**

- GRDM-G791 – Internship in Biomedical Science (2 cr.)
- BUS-X518 – Global Trends and Events (1.5 cr.)
- BUS-X519 – Business of Life Sciences (1.5 cr.)
- BUS-W511 – Venture Strategies (3 cr.)

##### **Choose one of the following courses (2 credits total):**

*[Note: these four courses are normally offered for 2 or 3 credit hours. Students should register for 2 credits.]*

- LAW-D/N 693 – Life Sciences Compliance Law (2 cr.)
- LAW-D/N 698 – Intellectual Property of Pharmaceutical Products and Medical Devices (2 cr.)
- LAW-D/N 635 – Drug Innovation and Competition Law (2 cr.)
- LAW-D/N 838 – Bioethics and Law (2 cr.)

Note that a minimum grade of B (3.0) is required in each course that is to count toward the minor. If a minimum of B (3.0) is not earned in a course, that course must be retaken. A course may only be retaken once. Students who fail to achieve the minimum grade of B (3.0) the second time they take a course will not be able to earn the Ph.D. minor.

The Ph.D. minor in Business of Biomedical Science does not require a Qualifying Exam

## Policy Analysis for Biomedical Science PhD Minor Overview

The doctoral minor in policy analysis for biomedical science is a 12 credit hour minor designed to provide Ph.D. students in the IU School of Medicine Graduate Division and any program throughout IU the opportunity to learn more about the fundamentals of policy analysis for those individuals pursuing a career in science policy (policy development, advocacy, and lobbying, for example). This program blends classroom learning opportunities offered by the IU School of Public and Environmental Affairs (SPEA) and a practicum that allows students to integrate this knowledge with their scientific training into a science policy context.

### Admissions

To be admitted to the Ph.D. minor in Policy Analysis for Biomedical Sciences, you must be a currently enrolled doctoral student in good academic standing in any IU or IUPUI school.

Students who would like to apply to the Ph.D. minor in Policy Analysis for Biomedical Sciences must submit an email to the Associate Dean for Research and Graduate Studies, and contact for this minor, the following:

- Documentation of the approval of the student's pursuit of this minor by his/her PI and advisory committee
- A one-page personal statement explaining the student's reason for pursuing this minor, including the relevance of the minor to their program and goals

Accepted students will be notified promptly via email by the minor contact.

### Course Requirements

#### Required Courses (6 credits total):

- SPEA-V512 – Public Policy Process
- SPEA-V663 – Policy Analysis

#### Choose one of the following courses (3 credits total):

- SPEA-V507 – Data Analysis and Modeling for Public Affairs
- SPEA-V562 – Public Program Evaluation
- SPEA-V654 – Public Program Management and Contracting

#### Required Practicum (3 credits total):

- GRDM-G792 – Practicum for Biomedical Sciences

A minimum of B (3.0) is required in each course that is to count toward the minor. If a minimum of B (3.0) is not earned in a course, that course must be retaken. A course may be retaken only once. Students who fail to achieve the minimum grade of B (3.0) the second time they take a course, will not be able to earn this Ph.D. minor.

The Ph.D minor Policy Analysis for Biomedical Sciences does not require a Qualifying Exam

### Courses

- **GRDM-G504 Introduction to Research Ethics (2-3 cr)**

Introduction to the basic concepts of research ethics. The course will cover the historical development of concern with ethics in science as well as practical information needed by students working in science today. Format will be lecture and discussion.

- **GRDM-G505 Responsible Conduct of Research (1 cr)** The purpose of this course is to provide its students with a formal setting to learn about the basic rules and acceptable standards required for anyone conducting scientific research. It will help its students obtain knowledge and develop skills for dealing with potential ethical problems in the research laboratory on their own. This course is designed for all beginning graduate students working in the life sciences or related fields and other researchers who require basic training in the responsible conduct of research.
- **GRDM-G506 Responsible Conduct of Translational Research (1 cr)** This course provides an introduction to the responsible conduct of research (RCR), which the NIH defines as follows, "the practice of scientific investigation with integrity. It involves the awareness and application of established professional norms and ethical principles in the performance of all activities related to scientific research." While RCR is required for all types of research, this course focuses on issues that arise in relation to clinical and translational research, mostly involving human subjects. Completion of this course fulfills the NIH requirements for instruction in RCR for trainees and students.
- **GRDM-G507 Reagent Validation as a Means for Enhanced Research Reproducibility (1 cr)** "Reagent Validation as a Means for Enhanced Research Reproducibility" is designed to provide training for pre-doctoral students in the area of appropriate reagent utilization by focusing on biological variables, with particular attention to murine models, and on biological and chemical resources, with particular attention to cell line authentication, plasmid verification, and antibody utilization. This course will entail a traditional didactic lecture series accompanied by relevant whole-class practical exercises allowing students to implement basic methods of reagent verification.
- **GRDM-G510 MD/PhD Special Options Course (0 cr)** This course is being created for a group of MD/PhD students who are in the Biomedical Engineering program, through IUSOM and Purdue. This group of students must enroll at Purdue while maintaining their student status on the IUPUI campus, due to PI location.
- **GRDM-G700 Translating Foundational Science to Contemporary Knowledge (1 cr)** G700 is designed to complement the learning of the foundational principles in biomedical sciences in courses G715, G716, and G717, in the form of a 1 credit, once per week class session. Faculty will guide the students through a background discussion of the assigned topic, and then through discussion of an assigned paper from the primary literature.
- **GRDM-G702 Entering Biomedical Research (1 cr)** Entering Biomedical Research is a mentee training curriculum designed to help first year graduate

trainees develop the skills get the most from their mentored research experience. Through activities, case studies and discussion, mentees are introduced to important topics and concepts organized around five key areas of trainee development: research skills, interpersonal skills, psychosocial skills, professional development skills, and culturally focused skills.

- **GRDM-G709 Foundations of Stem Cells in Physiology, Pathophysiology, and Clinical Utilization (1 cr)**  
GRDM-G709 is designed to introduce learners to the foundational concepts of the types, language, techniques, biology and clinical applications of all types of stem cells from embryonic to somatic.
- **GRDM-G715 Biomedical Science I: Biochemical Basis of Biological Processes (2 cr)**  
One of three biomedical science courses intended for incoming doctoral graduate students in the School of Medicine or other graduate students.  
Covers molecular and metabolic aspects of cellular function. The course will explore topics in the biochemical basis of biological systems, including biological macromolecules, protein ligand interactions, cell-signaling, and metabolic processes.
- **GRDM-G716 Biomedical Science II: Molecular Biology and Genetics (2 cr)**  
Second of three biomedical science courses intended for incoming doctoral graduate students in the School of Medicine or other graduate students.  
Topics covered include DNA structure and replication, recombination and repair, genomics and processes of inheritance, gene expression, eukaryotic systems, and molecular genetics and disease.
- **GRDM-G717 Biomedical Science III: Cellular Basis of Systems Biology (2 cr)**  
Third of a group of three biomedical science core courses intended for incoming doctoral graduate students in the School of Medicine or other graduate students. Organization and function of cells, tissues and physiologic systems using disease examples.  
Topics include neurophysiology, musculoskeletal, renal, cardiovascular, gastrointestinal, endocrine and pulmonary systems, and cancer.
- **GRDM-G718 Research in Biomedical Sciences (2 cr)**  
A laboratory research rotation course. Allows incoming basic science doctoral graduate students in the School of Medicine programs to take research rotation in laboratories affiliated with all of the School graduate programs.
- **GRDM-G720 Stem Cell Biology (2 cr)**  
This course will cover the self-renewal, proliferative, survival, differentiation, and migration/homing characteristics of hematopoietic and embryonic stem cells, how these functions are regulated by cytokines/chemokines and other external other external stimuli, and what their clinical capabilities are and might be.
- **GRDM-G724 Molecular Cancer Genetics (1 cr)**  
An introduction to cancer focusing on genetics. Topics include causes and effects of chromosome instability (including centromere/telomere failures and chromosomal translocation), epigenetic changes and genetic risk factors during cancer progression.
- **GRDM-G725 Gene Transfer Approaches to Clinical and Basic Research (1 cr)**  
A lecture-based course of basic principles involved with the transfer and expression of genetic material. Focus on technical aspects of each vector system, followed by applications to human diseases/experimental animal models. Practical understanding of non-viral and viral gene transfer to utilize these techniques in research studies.
- **GRDM-G727 Animal Models of Human Disease (1 cr)**  
This class explores advantages and limitations of animal models of human disease. Topics include models for diabetes, psychiatric disorders, cancer, osteoporosis, polycystic kidney and cardiovascular disease. The goal of the course is to provide a framework for students to select experimental animal models in their future research careers.
- **GRDM-G728 Fundamental Concepts of Infection and Pathogenesis (1 cr)**  
This course will cover concepts of host-pathogen interactions ranging from pathogen entry, growth and spread in the host to pathogen and mediated injury, immune evasion, pathogen survival strategies and transmission to new hosts. Basics of bacterial, viral and parasitic structures will be considered as they relate to pathogenesis.
- **GRDM-G729 Introduction to Immunological Systems (1 cr)**  
An introductory biomedical science, lecture-based core course intended for all incoming basic science graduate doctoral students in the School of Medicine programs or other interested graduate students. The course will cover components of the immune system development of the immune system, the immune response to pathogens and immunological disease.
- **GRDM-G733 Introduction to Biological Microscopy (2 cr)**  
Introduces key concepts and capabilities of modern biological microscopy, covering basic concepts that carry through all microscope imaging modalities and providing examples of how these concepts apply in the real world at the level of cellular and molecular imaging using transmitted light and fluorescence and in EM.
- **GRDM-G734 Advanced Molecular Imaging (2 cr)**  
Introduces imaging methods and concepts used in molecular structure as dynamics analysis.  
The course emphasizes general principles of macromolecular structure and dynamics applied to ensemble and single molecules. Methodologies use visible light, electrons and atomic force mapping.
- **GRDM-G735 Cardiovascular, Renal, and Respiratory Function in Health and Disease (2 cr)**  
The course will advance fundamental elements of cardiovascular function including basic hemodynamic cardiac function, respiratory function, ventilator mechanics, gas exchange and kidney function, including control of excretion and regulation of body fluid dynamics. An emphasis will be placed on integrative function of different organ systems.
- **GRDM-G736 Endocrine and Gastrointestinal Function in Health and Disease (1 cr)**

The course emphasizes the use of modern experimental techniques to study mechanisms underlying the physiological function of the gastrointestinal tract and endocrine system. Lectures highlight the molecular and cellular basis for diseases of the gastrointestinal and endocrine systems and how they impact whole animal function.

- **GRDM-G737 Introduction to Histology (1 cr)** This course is designed to introduce graduate students in the biomedical sciences to the microscopic structure of the tissues and organs of the body. It is the first unit of ANAT-D 851 Histology. Lectures will focus on the structural basis of normal physiology processes, with emphasis of the contribution of the basic tissues (epithelium, nerve, muscle, connective tissue) to simple organ systems (i.e. blood vessels and integument).
- **GRDM-G740 Translational Systems Physiology and Pharmacology (2 cr)** This course is designed to teach students the basics of physiological systems and therapeutics used to target those systems for the management of known human diseases. Faculty will lecture on the assigned topic, and lead discussion within the class period.
- **GRDM-G743 Fundamentals of Electrical Signaling & Ion Channel Biology (2 cr)** Experimental basis for cellular and molecular concepts of electrical excitability and membrane transportation through ion channels. The goals are to foster an understanding of how we accumulate information and to provide students with tools to evaluate hypotheses and to define unanswered questions, rather than provide current facts to memories.
- **GRDM-G744 Neuropharmacology of Synaptic Transmission: Receptors and Ligands.** Experimental basis for current cellular and molecular concepts of postsynaptic receptors and signals involved in chemical synaptic transmission in the nervous system. The goals are to foster an understanding of how we accumulate information and to evaluate hypotheses and to define unanswered questions, rather than provide current "facts" to memorize.
- **GRDM-G745 Fundamentals of Intracellular Signal Transduction (2 cr)** Experimental basis for cellular and molecular concepts of intracellular signaling cascades activated by multiple processes. The goals are to foster an understanding of how we accumulate information and to provide students with tools to evaluate hypotheses and to define unanswered questions, rather than provide "facts" to memorize.
- **GRDM-G746 Chromosome Instability and Disease (1 cr)** Exploration of the mechanisms of chromosome instability and the clinical impact of this problem. Topics will include chromosome structure and function and how failures in these functions promote chromosome instability in meiosis and mitosis. Other topics include the clinical consequences of chromosome instability in miscarriage, birth defects, and cancer.
- **GRDM-G747 Principles of Pharmacology (1 cr)** This course is intended for incoming, basic science doctoral graduate students in the

School of Medicine Pharmacology & Toxicology programs of other interested graduate students.

This course covers the basic of drug receptor interactions, drug metabolism, pharmacokinetics, and pharmacokinetics. This course will include PowerPoint presentations and student presentations.

- **GRDM-G748 Principles of Toxicology I (1 cr)** This course will present the fundamental concepts of toxicology necessary to understand the effects of chemicals on human health. Cellular and molecular mechanisms involved in toxic responses elicited by pharmaceutical and environmental agents, activation and detoxification of drugs and chemicals, and the principles of carcinogenesis and mutagenesis will be presented.
- **GRDM-G749 Introduction to Structural Biology (1 cr)** An introduction to structural biology including the fundamentals of macromolecular structure and interactions, methods used to determine three-dimensional structures, the relationship between protein sequence and structure, and prediction and analysis of macromolecular structure.
- **GRDM-G751 Advanced Concepts in Cytosolic and Nuclear Signal Transduction (2 cr)** Cellular signal transduction mechanisms comprise a complex communication network that governs cellular function and responses. These networks include communication between cells as well as that within cells. Signaling networks govern the ability of cells to perceive and correctly respond to their surroundings and are therefore critical in organ development, tissue repair, and homeostasis. Errors in signaling responses can result in diseases including cancer, neurodegeneration, pain, osteoporosis, autoimmunity, and diabetes. The potential modulation of cellular signaling networks is the basis of current research in disease in the 21st century. This course is designed to give graduate students in biological sciences a state-of-the-art education in cellular signaling mechanisms and the methodology used to study them. Landmark and breaking scientific journal articles in various signaling fields will be discussed and critically evaluated. Emphasis is given to both experimental design and results interpretation. Prior education in biochemistry and cell biology is required. By the end of this course, students will have a state-of-the-art current knowledge of the cytosolic and nuclear mechanisms of cellular signaling pathways. Students will have a working to design experiments to study signaling pathways, and how to interpret results. Students will have gained the skill of how to read, interpret, and critically evaluate published journal articles in the fields of cellular signaling mechanisms.
- **GRDM-G754 Principles of Toxicology 2 (1 cr)** Xenobiotic-induced target organ toxicity will be discussed with respect to the biological and/or chemical factors that influence toxicity at a tissue site, the modes of action for producing damage, and the methodology used to measure injury. This course is designed to provide a foundation for understanding the complex interactions between toxicants and biological systems from a basic science approach.
- **GRDM-G755 Principles of Toxicology 3 (1 cr)** The effects associated with specific classes of chemicals,



including chemical agents that either demonstrate a great chance for injury and/or pose significant potential for human exposure will be presented. The chemical classes covered will include selective metals, solvents and alcohols, pesticides, plastics and gases.

- **GRDM-G756 Radiation and Cancer Biology (3 cr)** This is a graduate level course covering the effects of ionizing radiation at the cellular/molecular, tissue, and organismal level relevant to radiation oncology, radiology, and radiation protection. Topics include acute and late effects in normal tissue, and tumors, apoptosis, cell cycle checkpoints, DNA repair, tumor kinetics heritable effects, and carcinogenesis.
- **GRDM-G760 Epithelial Cell Biology (3 cr)** An integrated approach to epithelial structure and function and the role of subcellular organization in organ physiology and pathophysiology.
- **GRDM-G761 Molecular & Cellular Physiology of Ion Channels (1 cr)** Ion channels and transporters are crucial for life. Without these proteins, the heart will stop beating, and we will be unable to flex our muscles, see, smell, hear, taste, and think. The goal of this course is to introduce the fundamental concepts of molecular physiology of ion channels and transporters. The emphasis will be on the electrophysiological and optical methods used for investigating ion transport proteins. Specific topics will include ion channel biophysical characteristics and ion channel/transporter modulation and function. Two laboratory demonstrations will help students to master the learned concepts in a real experimental setting.
- **GRDM-G762 Physiology and Pathophysiology of Lipid Rafts.** To acquire a core of essential principles about lipid raft structure and comprehensive insight into the functional process of these membrane domains by means of introductory lectures, review of current literature, and group discussions with an emphasis on experimental techniques used to examine membrane physiology.
- **GRDM-G 771 Analysis of Large Data Sets for Biologists (1 cr)**  
This course will provide graduate students in biomedicine disciplines a foundation to apply the programming language R in a biological research analytics environment. After a primer on R programming, it then focuses on data processing and analysis specifically in the context of biomedical science research.
- **GRDM-G780 Foundations of Neuroscience (6 cr)**  
This course will provide an introduction to the nervous system and its disorders. Specifically, the course will provide a broad-based introduction to the structure of the nervous system, its cellular composition and mechanisms through which neurons communicate and ultimately regulate behavior and cognition. The course incorporates an in-depth analysis of the current literature and methodology.
- **GRDM-G790 Special Topics in Biomedical Science (1-3 cr)** This special topics course will focus on new, cutting-edge, and/or timely issues, ideas, and skills in the biomedical sciences. These courses will include a combination of lecture, independent reading and work, and interaction with course content, instructor, and/or peers.
- **GRDM-G791 Internship in Biomedical Science (1-3 cr)** Prerequisites: Permission of Instructor. An internship course allowing incoming basic science doctoral graduate students enrolled in programs (minors, etc.) that require internships.
- **GRDM-G792 Practicum in Biomedical Science (1-3 cr)** Prerequisites: Permission of Instructor. A course allowing basic science doctoral graduate students enrolled in programs (minors, etc.) to complete practica experiences as required by a program. Required as part of the Policy Analysis for Biomedical Sciences doctoral minor. Permission of course director(s) is required.
- **GRDM-G793 Career Experiential Learning in Biomedical Science (1-2 cr)** A field-based career experiential learning experience, this course allows PhD students who are in a PhD program (usually second year students, if entering through the IBMG Program for PhD study) to investigate career options in-depth. This experience can range from shadowing (observation only) to a short-term internship experience (not exceeding six weeks).  
Permission of instructor and the IU School of Medicine Graduate Division required.
- **GRDM-G801 Experimental Approaches to Cell Structure and Function** The overall objective of this graduate course in Cell Biology is to present in an experimental context, information integrating cell structure with cell function. The focus is on topics in which new information on cell structure has enhanced or re-formulated our understanding of cell function.
- **GRDM-G803 Research (1-4 cr)** Mentored research for MD/PhD students.
- **GRDM-G807 Structural and Chemical Biology (2 cr)** Fundamentals of structural and chemical biology focused on state-of-the-art approaches to inhibitor discovery, use of inhibitors in elucidating biological function, and computational and structural approaches to rational inhibitor design.
- **GRDM-G817 Molecular Basis of Cell Structure Function (2 cr)** Organization and function of subcellular structures. Intracellular coordination of cell activities including protein and RNA processing/trafficking/quality control, chromatin dynamics, and cell division.
- **GRDM-G819 Basic Bone Biology (3 cr)** An introduction to basic bone biology, including bone morphology, composition and physiology; cell biology of bone cells; measurement techniques; adaptation to the mechanical and metabolic environments; regulatory factors and mineral homeostasis; and growth and development.
- **GRDM-G828 Concepts in Biotechnology (2 cr)** Case studies exploring topics on the cutting edge of biotechnology and tutorials in biotechnology calculations.
- **GRDM-G830 Advanced Cardiovascular Physiology (3 cr)** Advanced study of the cardiovascular system using contemporary methods is emphasized. Concepts of cardiovascular structure, function, hemodynamics, excitation-contraction

coupling, signal transduction and electrophysiology are reinforced. The format of the course will include faculty lectures and facilitated interactive student discussion.

- **GRDM-G848 Bioinformatics, Genomics, Proteomics, and Systems Biology (2 cr)** Biology has been transformed by various high-throughput technologies (genomics, proteomics, metabolomics, etc.), which in turn have led to a large number of massive databases and software analysis packages. This course focuses on the "omics" technologies, on the resulting databases, and on the computational tools used to analyze the data.
- **GRDM-G852 Concepts of Cancer Biology: Signaling Gone Awry (2 cr)** Fundamentals of cancer biology; the signaling of events that regulate cell growth, survival and differentiation; how mutation/dysregulation of signaling molecules leads to cancer and might be exploited for treatment.
- **GRDM-G855 Experimental Design and Biostatistics (1 cr)** This course will provide students with a functional understanding of experimental design and statistical testing in the biological sciences. Students will learn why a thoughtful approach to the design of their experiments and a rigorous, unbiased testing of their results are both important to their work and future careers. Students will receive an introduction to basic statistical theory with a practical focus on interpreting printouts from a variety of statistical programs (rather than a focus on students carrying out their own calculations). Practical examples of experimental design and statistical testing—both good examples and bad—will be worked through for a variety of real situations in biomedical research.
- **GRDM-G890 Applied Molecular Biology (3 cr)** Basic principles and techniques in molecular biology and pathology. Particular emphasis will be on molecular techniques used to study pathogenesis of diseases.
- **GRDM-G910 Advanced Molecular Biology Methods (3 cr)** Advanced theory and techniques in Molecular biology - the focus of the course will be on techniques related to manipulation of cloned DNA to study their expression, structure and function.

## Biostatistics

**Richard M. Fairbanks School of Public Health,  
Indianapolis, and Purdue School of Science**  
**Contact Information**

Department of Biostatistics, HITS 3000, IUPUI

or IU Fairbanks School of Public Health, RG 6057, IUPUI

or Department of Mathematical Sciences, LD 270, IUPUI

**Program E-mail:** [fsphinfo@iu.edu](mailto:fsphinfo@iu.edu)

**Program URL:** <https://fsph.iupui.edu/academics/doctors/biostatistics/index.html>

### Curriculum

#### Degree Offered

Doctor of Philosophy (Ph.D.), Master of Science (M.S.), and doctoral minor in Biostatistics

### MS in Biostatistics

The Master of Science (M.S.) in Biostatistics provides a solid grounding in study design and data collection, management, and analysis, as well as appropriate interpretation and communication of study findings. Graduates will have competencies in three areas, public health, biostatistics, and data management and computation.

Through this program, students receive highly focused training in statistical theory and biostatistical methods, with an emphasis on application in a broad array of health sciences. Students are trained to be professional biostatisticians who are well qualified for employment in government and private health agencies, industry and research institutes. The MS program also serves as excellent preparation for doctoral programs in biostatistics.

#### Admission Requirements

All applicants must have a bachelor's degree from an accredited university or college, show evidence of satisfactory preparation in math and computer skills and have acceptable academic record.

#### Application Deadlines

##### Fall Semester

US Applicants: July 15

International Applicants: July 15

Any applicant who has a Bachelor's or a Master's degree from an accredited institution and shows promise for successfully completing all the degree requirements will be considered for admission to this program.

In addition to satisfying general Indiana University Graduate School requirements for admission, applicants must have at least a B (3.00 GPA) average in courses taken during the last two years of their earlier degree studies, and a grade of B+ (3.50 GPA) in courses required as prerequisites for the program.

Students entering this program should have a minimal mathematics background consisting of an undergraduate course sequence in univariate and multivariate calculus (equivalent to MATH 16500, 16600 and 26100 at IUPUI) and a course in linear algebra (including matrix theory). In addition, applicants should have had a calculus-based undergraduate level course in probability or statistics. Prospective applicants who do not have this background must acquire it prior to admission to the program.

Applicants who have earned a cumulative undergraduate GPA of below a 3.0 are required to submit official scores from the GRE taken within the past 5 years. Test and those whose native language is not English must also take the Test of English as a Foreign Language (TOEFL) and achieve a score of 570 (or 230 on the computer version of the test, or 79 on the internet-based test). Final admission decisions will be made by a faculty Admission Committee.

#### Supporting Documentation

In addition to completing the IUPUI application, you are also required to submit the following supporting documentation directly to IUPUI:

- **Statement of Purpose and Objectives**— Provide an essay of approximately 750 words describing

your past education, experience, and current professional career objectives. You are encouraged to comment on any or all of the following: plans you have to use your education and training; the needs and/or challenges you perceive as important in your field of study; and any personal qualities, characteristics, and skills you believe will enable you to be successful in your chosen field of study.

- **Résumé or Curriculum Vitae (C.V.)**
- **Official post-secondary transcripts** - Transcripts from all U.S. institutions attended are required (must be sent directly from the institutions to SOPHAS). This includes previous study at Indiana University. It is strongly recommended that all transcripts be submitted no later than December 15 to allow SOPHAS adequate time to verify transcripts. Please note that it can take up to four weeks for transcripts to be verified.
- **International Transcripts**

World Education Services (WES) ICAP evaluation of foreign academic credentials The Indiana University Richard M. Fairbanks School of Public Health requires all applicants with foreign academic credentials to provide a World Education Services (WES) ICAP course-by-course evaluation of those credentials. Applicants should submit their transcripts to WES at least 1 month in advance of the application deadline to ensure that the evaluation is completed in time.

Through special arrangements with SOPHAS, WES will deliver its credential evaluation report directly to SOPHAS by secure electronic transmission. This expedites the delivery of the evaluation report — as well as images of the applicant's verified transcripts — to SOPHAS and allows SOPHAS to process the report most efficiently. Go to [www.wes.org/sophas/](http://www.wes.org/sophas/) for more information.

U.S. applicants, who have attended post-secondary institutions outside of the U.S. as part of a study-abroad program at a U.S. college or university, do *not* need to provide a WES evaluation of their foreign coursework as long as it is noted on their U.S. transcript.

- **Please note:** Upon admission to IUPUI, international students will be required to provide the Indiana University Office of International Affairs with original transcripts from all universities attended in the US and abroad.
- **Three letters of recommendation** from persons qualified to assess your academic work, professional experiences, or leadership potential. These letters should be from professional sources that can provide an unbiased, current and critical assessment of your abilities, skills, strengths and weaknesses related to successfully completing a doctoral program.
- **GRE test scores** GRE Applicants who have earned a cumulative undergraduate GPA of below a 3.0 are required to submit official scores from the GRE taken within the past 5 years. Applicant must submit GRE scores to SOPHAS using the following designation DI Code 0167.
- **TOEFL scores** for applicants whose first language was not English are to be submitted to SOPHAS using the following designation DI Code 5688. IELTS scores can be uploaded SOPHAS application-

- **Resume or CV** For each position on the resume or CV, provide the job title, employing agency, dates employed, and responsibilities held. Indicate any additional strengths or skills such as fluency in foreign languages, research experience, teaching experience, community service and demonstration of leadership skills. Include professional certifications, honors, and awards.
- **Recommendations** Three letters of recommendation are required from professional sources that can provide an unbiased critical assessment of your abilities, skills and strengths and weaknesses. Examples of professional and academic sources are academic advisors, professors, preceptors or immediate supervisors. Examples of sources that are not acceptable include coworkers, colleagues, classmates and relatives.
- **Proof of English Proficiency** Applicants whose native language is not English or whose academic study was done exclusively at non-English speaking institutions, must prove English proficiency by providing either official Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) scores. Scores must be less than two years old.

The preferred minimum English language test scores for admission to the Fairbanks School of Public Health are:

- Internet-based TOEFL: minimum score of 79
- Computer-based TOEFL: minimum score of 213
- Paper-based TOEFL: minimum score of 550
- IELTS (total band score): minimum score of 6.5
- **Interview** The interview are invited at the discretion of the Admission Committee. The MSin Biostatistics Admissions Committee conducts interviews using Skype video conferencing for applicants who are unable to travel to Indianapolis for the interview.

### Apply Now

MS in Biostatistics applications and supplemental materials must be submitted to [SOPHAS](http://SOPHAS.org) (Schools of Public Health Application Service). SOPHAS is meant to facilitate the collection of common application materials and general information. For more information and frequently asked questions, please visit [sophas.org](http://sophas.org). In addition to the SOPHAS application, all applicants will be required to complete a short application. All students must apply to IUPUI through Graduate CAS, but applicants do not have to resubmit any of the documents previously submitted to SOPHAS.

### MS in Biostatistics Curriculum

All MS in Biostatistics candidates must satisfactorily complete a minimum of 36 credits. The curriculum includes required public health courses, biostatistics core courses, and biostatistics electives courses.

### Required Coursework

MS Biostatistics Core Courses

*Take all 7 courses for a total of 24 credits*

- STAT 51900 Introduction to Probability or STAT 51600 Basic Probability Applications (3 credits)

- STAT 52800 Mathematical Statistics I or STAT 51700 Statistical Inference (3 credits)
- PBHL B571 Biostatistics Method I-Linear Model in Public Health (4 credits)
- PBHL B572 Biostatistics Method II-Categorical Data Analysis (4 credits)
- PBHL B573 Biostatistics Method III-Applied Survival Data Analysis (4 credits)
- PBHL B574 Biostatistics Method IV-Applied Longitudinal Data Analysis (3 credits)
- PBHL B581 Biostatistics Computing (3 credits) or B552 Fundamentals of Data Management (3 credits)

#### Required Public Health Courses

- PBHL P510 Introduction to Public Health

#### Required Epidemiology Courses

- PBHL E517 Fundamentals of Epidemiology

#### Thesis Option

Register for B711 MS Thesis Research in Biostatistics. No elective courses are required when taking the Thesis Option.

#### Non-Thesis Option

Students taking the Non-Thesis Option are required to take the MS competency exam. After passing the exam, students must then take six hours of electives.

Students who do not pass the MS competency exam will be required to enroll in B711 MS Thesis Research in Biostatistics.

#### Note on MS Examination

The MS competence examination will be given twice a year. The first examination will be offered a week before the fall semester starts and the second exam may be offered a week before the spring semester if necessary. The examination consists of two parts: Theory and Application.

Theory examination covers the materials at the level of Stat 51600 and Stat 51700. Application examination covers the materials from PBHL-B571 and PBHL-B572 (fall) and PBHL B573 (winter). Students are recommended to take the examination in the summer after year one in the program and will be given a second chance to pass the examination after three semesters in the program if they failed to pass in their first attempt.

#### Doctor of Philosophy

The PhD in Biostatistics program at the IU Richard M. Fairbanks School of Public Health combines the statistical theory and modeling strengths of IUPUI's Department of Mathematical Sciences with the exceptional biostatistical methods research, health sciences applications, and public health experience of our own department of Biostatistics. Students benefit from a low student/faculty ratio that promotes close interaction with faculty and targeted guidance of research.

Designed for individuals with strong quantitative and analytical skills and a strong interest in biological, medical and/or health-related sciences, the 90-credit program can be completed on either a full-time or part-time basis. Students will be well prepared to contribute to research,

collaboration, and consulting across a broad spectrum of health and life science problems. The program emphasizes the theory and concepts underlying statistical methods, the interpretation of results from experimental, as well as observational studies, and the practical realities of health-related studies and their analysis.

#### Admission Requirements

Any applicant who has a Bachelor's or a Master's degree from an accredited institution and

Any applicant who has a Bachelor's or a Master's degree from an accredited institution and shows promise for successfully completing all the degree requirements will be considered for admission to this program.

In addition to satisfying general Indiana University Graduate School requirements for admission, applicants must have at least a B (3.00 GPA) average in courses taken during the last two years of their earlier degree studies, and a grade of B+ (3.50 GPA) in courses required as prerequisites for the program.

Students entering this program should have a minimal mathematics background consisting of an undergraduate course sequence in univariate and multivariate calculus (equivalent to MATH 16500, 16600 and 26100 at IUPUI) and a course in linear algebra (including matrix theory). In addition, applicants should have had a calculus-based undergraduate level course in probability or statistics. Prospective applicants who do not have this background must acquire it prior to admission to the program.

Applicants are required to take the Graduate Record Examination (GRE) General Test and those whose native language is not English must also take the Test of English as a Foreign Language (TOEFL) and achieve a score of 570 (or 230 on the computer version of the test, or 79 on the internet-based test). Final admission decisions will be made by a faculty Admission Committee.

#### Fall Semester Application Deadline: January 15

All required application documents must be submitted by the PhD program deadline. It is strongly recommended that all transcripts are submitted no later than December 15 to allow adequate time to verify transcripts.

#### Online Application Steps

You may apply to our Biostatistics PhD program [online via SOPHAS](#), the centralized Schools of Public Health Application Service.

Remember to designate the IU Richard M. Fairbanks School of Public Health as one of your school choices, along with your desired program.

The application deadline for Fall admission is **January 15**. All required application documents must be submitted no later than December 15 and completed by the program deadline.

#### Supporting Documentation

##### Statement of Purpose and Objectives

Provide an essay of approximately 750 words describing your past education, experience, and current professional career objectives. You are encouraged to comment on any or all of the following: plans you have to use your



education and training; the needs and/or challenges you perceive as important in your field of study; and, any personal qualities, characteristics, and skills you believe will enable you to be successful in your chosen field of study.

### Official Post-Secondary Transcripts

Transcripts from all U.S. institutions attended are required (must be sent directly from the institutions to SOPHAS). This includes previous study at Indiana University. It is strongly recommended that all transcripts be submitted no later than December 15 to allow SOPHAS adequate time to verify transcripts. Please note that it can take up to four weeks for transcripts to be verified.

**World Education Services (WES) ICAP evaluation of foreign academic credentials** The Indiana University Richard M. Fairbanks School of Public Health requires all applicants with foreign academic credentials to provide a World Education Services (WES) ICAP course-by-course evaluation of those credentials. Applicants should submit their transcripts to WES at least 1 month in advance of the application deadline to ensure that the evaluation is completed in time.

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U.S. applicants, who have attended post-secondary institutions outside of the U.S. as part of a study-abroad program at a U.S. college or university, do *not* need to provide a WES evaluation of their foreign coursework as long as it is noted on their U.S. transcript.

**Please note:** Upon admission to IUPUI, international students will be required to provide the Indiana University Office of International Affairs with original transcripts from all universities attended in the US and abroad.

### Resume or CV

For each position on the resume or CV, provide the job title, employing agency, dates employed, and responsibilities held. Indicate any additional strengths or skills such as fluency in foreign languages, research experience, teaching experience, community service and demonstration of leadership skills. Include professional certifications, honors, and awards.

### Recommendations

Three letters of recommendation are required from persons qualified to assess your academic work; clinical, public health, or professional experiences; or, leadership potential in public health. These letters should be from professional sources that can provide an unbiased, current and critical assessment of your abilities, skills, strengths and weaknesses related to successfully completing a doctoral program.

### GRE Test Scores

GRE scores are required for Biostatistics PhD applicants. Note: The admissions committee does not list expected

minimum scores. GRE scores can be sent to SOPHAS DI Code 0167.

### Proof of English Proficiency

Applicants whose native language is not English or whose academic study was done exclusively at non-English speaking institutions must:

1. Prove English proficiency by providing either official Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) scores
2. Minimum Requirements for Admission for IU Programs: TOEFL (79) and 6.5 IELTS. Students who are admitted with TOEFL of 79-99 or IELTS of 6.5-7.0 will take the English for Academic Purposes (EAP) placement test. Depending on your EAP test results, you may need to take EAP courses at the same time as your academic major courses for one or two semesters.
3. The preferred minimum English language test scores for admission to the Fairbanks School of Public Health are:
  - Internet-based TOEFL: minimum score of 100
  - Computer-based TOEFL: minimum score of 250
  - Paper-based TOEFL: minimum score of 600
  - IELTS (total band score): minimum score of 7
4. Scores must be less than two years old.
5. TOEFL or IELTS scores must be sent to SOPHAS DI Code **5688**.

### English Language Test Waiver

The English Language test requirement may be waived if an applicant has earned a bachelor's degree or higher from the U.S. or other English-speaking country.

### Interview

The applicants are invited to interview at the discretion of the Admission Committee.

The PhD in Biostatistics Admissions Committee conducts interviews using Skype video conferencing for applicants who are unable to travel to Indianapolis for the interview. Skype is a free software application that allows users to connect through the internet to communicate. Note that applicants will need access to a webcam and microphone for the interview.

### Review of Application

Completed applications will be carefully reviewed by the Biostatistics PhD Admissions Committee after the program deadline. Applicants are notified of their admission status in March. The Admissions Committee will determine each applicant's acceptance or non-acceptance to the Biostatistics PhD program by using the following selection criteria:

- *Scientific Leadership Potential:* Assessed by the applicant's resume / curriculum vita, personal statement, and personal interview.
- *Ability to Engage in Advanced Graduate Work:* Assessed by the applicant's personal interview, evaluation of letters of recommendation, overall grade point average in prior graduate work, and



scores from the GRE or other graduate entrance exams.

- *Learning Goals and Objectives:* Assessed by the applicant's personal statement and personal interview.

### Apply Now

You may apply online to our Biostatistics PhD program [via SOPHAS](#), the centralized Schools of Public Health Application Service. Remember to designate the IU Richard M. Fairbanks School of Public Health as one of your school choices along with your desired program.

The application deadline for Fall admission is January 15. All required application documents must be submitted by the PhD program deadline. It is strongly recommended that all transcripts are submitted no later than December 15 to allow SOPHAS adequate time to verify transcripts. Please note that it can take up to four weeks for transcripts to be verified.

### PhD in Biostatistics Curriculum

To complete this degree, you will take a combination of required Biostatistics courses, public health courses, Biostatistics elective courses, a doctoral minor, further elective courses, independent studies, and directed dissertation research that together total 90 credits. The specific distribution of courses is as follows:

#### Required Coursework

##### Public Health Core Courses

Every student in the program is also required to complete a fundamental epidemiology course and introductory courses in public health for a total of 6 credits:

- PBHL E517 Fundamentals of Epidemiology
- PBHL P510 Introduction to Public Health

##### Required Coursework

Every student in the program is required to complete the following eight courses:

- STAT 51200 Applied Regression Analysis
- STAT 51900 Introduction to Probability\*
- STAT 52500 Generalized Linear Model\*
- STAT 52800 Mathematical Statistics I\*
- STAT 53600 Introduction to Survival Analysis\*
- PBHL B574 Applied Longitudinal Data Analysis\*
- PBHL B582 Introduction to Clinical Trials
- PBHL B584 Biostatistics Practicum

*\*Indicates program core courses*

Any four of the following:

- STAT 61900 Probability Theory
- STAT 62800 Advanced Statistical Inference
- PBHL B616 Advanced Statistical Computing
- PBHL B626 Advanced Likelihood Theory
- PBHL B636 Advanced Survival Analysis
- PBHL B646 Advanced Generalized Linear Models
- PBHL B656 Advanced Longitudinal Data Analysis

In addition, every student must take an additional six credit hours of statistics/biostatistics courses. At least three

credit hours of these electives must be taken from 600-level courses or above.

The remaining 42 credit hours will be taken as additional coursework in a minor area (12 credits), further elective courses, independent studies, and directed dissertation research (at minimum 24 credits). This totals to 90 credit hours for the Biostatistics program. The minor may be completed in any area related to the health and life sciences disciplines, such as pharmacology and toxicology, epidemiology, genetics, biology, physiology, bioinformatics, health policy, translational science and health economics, among many others.

**Transfer Coursework:** Candidates for the PhD degree may petition for up to 30 hours of graduate credit from other institutions. Students should submit the Petition for Approval of Transfer Course form to initiate the process and receive approval to apply a course completed at a different institution toward their degree. Students must provide, at minimum, the syllabus for the course under evaluation. Other documentation may be requested.

**Expired Coursework:** Normally, a course may not apply toward degree requirements if it was completed more than seven years prior to the passing of the preliminary examination. Students must submit the Petition For Course Revalidation form to initiate an appeal process and receive approval to apply an expired course toward their degree. Students must provide, at minimum, the syllabus for the course under evaluation. Other documentation may be requested.

**Elective Coursework:** Students must submit the Petition for Approval of Elective Course form to initiate an appeal process and receive approval to apply a course completed in a different department toward their degree. Students must provide, at minimum, the syllabus for the course under evaluation. Other documentation may be requested.

**Minor Area (12 hours):** In addition to the 48 credit hours of formal statistics/biostatistics and public health coursework, all students must complete a minor in an area related to any of the health and life sciences disciplines. The minor may be obtained in areas such as pharmacology and toxicology, epidemiology, genetics, biology, physiology bioinformatics, public health and health economics, among many others and must be approved by the student's advisor or graduate committee. The minor must contain a minimum of four graduate level courses (12 cr.) in the chosen area and it must comply with the minor requirements of the respective department/unit.

**Dissertation (24 to 30 hours):** At minimum 24 credits hours will be guided research dissertation hours. After passing the oral part of the qualifying examination, the student may officially begin work on the dissertation, which will be original and publishable statistical/biostatistical research originating from and with application to well defined life and health related problems. The student must submit the completed written dissertation to the research committee for reading and evaluation and subsequently will have to present and defend it orally in a public forum before the committee.

### Program Requirements

**Qualifying Examinations - written part (required):**

Students must pass an initial qualifying examination in the areas of Probability, Mathematical Statistics, Generalized Linear Models, Longitudinal Data Analysis and Survival Analysis. The qualifying examination is a written examination offered once a year during a two-day

Qualifier Exam Session the week before classes start in August and is administered in two sections – Theoretical Biostatistics and Applied Biostatistics. The preparation and the administration of the qualifying examination are overseen by the Graduate Examination Committee. Students are expected to have completed and passed both sections of the qualifying examination on or before their qualifier deadline.

**Deadline for full-time students:**

The deadline for passing the written part of the qualifying examination for full-time students who enter the program with a master's degree in statistics/biostatistics is August at the end of their second year. The deadline for full-time students who enter the program without a master's degree in statistics/biostatistics is August at the end of their third year.

**Deadline for part-time students:**

The deadline for passing the qualifying examinations for part-time students who enter the program with a master's degree in statistics/biostatistics is August at the end of their third year; the deadline for part-time students who enter the program without a master's degree in statistics/biostatistics is August at the end of their fourth year.

If students do not pass both sections of the examination by their qualifier deadline, they will have their privilege to continue in the program terminated.

A student will have at most two attempts to pass the examination. The first attempt must include the entire examination, i.e. both the Theoretical and Applied sections. If one or both sections are not passed on the first attempt, then a second attempt on or before the deadline is allowed. During the final attempt, the student may only sit for the section(s) not passed in the first attempt.

A student's first attempt at the qualifying examination will result in one of the following three outcomes:

**Pass Both Sections:** The student has demonstrated fundamental understanding of the core material and the examination committee believes he/she will be successful in completing the Ph.D. program.

**Pass One Section:** The student has demonstrated fundamental understanding of one section, but lacks adequate understanding of the other section. The student must sit for the section not passed at a future examination session.

**Fail:** The student has failed to demonstrate an adequate understanding of the material from the core courses and thus fails the examination. The student must sit for both sections at a future examination session. A student's second and final attempt at the written qualifying examination will result in one of the following two outcomes:

**Pass:** The student has demonstrated fundamental understanding of the core material and the examination

committee believes he/she will be successful in continuing the Ph.D. program.

**Fail:** The student has failed to demonstrate an adequate understanding of the material from the core courses and thus fails the examination, with privilege to continue in the program terminated. Students who failed any part of the written qualifying examinations will be availed within one month of the announced results, the opportunity to review their graded examinations and appeal their grades if they choose to do so. The program Directors will not accept for consideration any appeal beyond this one month period.

**Qualifying examinations - oral part (required):** A student becomes eligible to take the oral part of the qualifying examinations after successfully passing the written qualifying examination. This examination consists of a presentation on an advanced research topic suggested by the student to the student's advisory committee, which administers this examination. In preparation to this examination, the student must provide the committee with a paper (10 – 15 pages) outlining the advanced topic to be covered, clearly indicating the scope and depth of the planned research along with relevant references. In the examination, the student is expected to display an in-depth understanding of the chosen subject matter. The committee may ask the student questions which normally will be directed to the subject matter of the research but may, by natural extension, also cover any other relevant topic including the minor subject. The oral qualifying examinations will normally be completed at the end of all required course work, including the minor area, before the student embarks on the dissertation. The student must pass this examination before passing on to candidacy.

**Admission to Candidacy:** Following the passing of the qualifying examinations and the completion of all required coursework, the student's advisory committee will nominate the student to candidacy. Upon approval of the Dean of the University Graduate School, the student will be admitted to candidacy.

**Final Examination:** Oral Examination, primarily a defense of the dissertation in a public forum.

**Normal Progress and Termination:** Students must maintain satisfactory progress towards their degree objective to ensure their continued good standing in the program and financial support. The minimum criteria for satisfactory progress are a GPA of 3.00 or above, satisfactory research progress, and completion of other degree requirements (written and oral qualifying examinations, minor area requirements, candidacy requirements). If at any time the GPA drops below 3.0, the student will be placed on academic probation. Financial support may be rescinded if the GPA is not increased to 3.0 in a reasonable time period. Further, if the student's GPA in two consecutive semesters is below 3.0 the student's standing in the Biostatistics PhD program will be terminated.

In addition, credit towards the doctoral degree will not be given for any course in which the student obtains a grade of "B-" or below. This includes students' work on their research. If, in the opinion of the research committee, satisfactory research progress is not being made, a meeting of the student's research committee may be

convened. This meeting will include a brief presentation by the student on the work accomplished up to that point, and/or a discussion concerning the problems which have hampered progress. If the consensus of the committee is that the student needs to show improvement, he/she will have 60 days to demonstrate a change in research performance. At the end of this time, financial support may be discontinued, if applicable.

### Doctoral Minor in Biostatistics

**Departmental URL:** <https://fsph.iupui.edu/academics/doctoral/minors/index.html>

**Departmental Email:** [fsphinfo@iu.edu](mailto:fsphinfo@iu.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

The IU Richard M. Fairbanks School of Public Health offers a PhD minor in Biostatistics that teaches advanced statistical analysis that goes beyond the competencies required by most PhD programs. People who possess these special health-focused analytical and database management skills are in high demand due to the value they add to research projects.

The doctoral minor in Biostatistics is comprised of a minimum of 12 credits and serves as a useful complement to many major areas of study. You will learn both the theoretical concepts that underlie the scientific method and how to apply these concepts to perform effective data collection, analysis, interpretation, and reporting of results. This minor emphasizes the design and analysis of experimental and observational studies, the theory of probability and statistics, and statistical computing, making it particularly valuable to students in health-related doctoral programs. The minor is ideal for students from many schools, including the IU schools of Nursing, Dentistry, Medicine, Health and Rehabilitative Sciences, and Public and Environmental Affairs.

Students who wish to obtain a doctoral minor from the IU Richard M. Fairbanks School of Public Health must earn a grade of "B" or better in the coursework for the minor. Courses in which a grade of "B-" or lower is earned will not apply toward completion of the minor. Faculty in the department of Biostatistics will serve as advisors for students choosing this minor.

### Curriculum

The Fairbanks School of Public Health offers a PhD minor in Biostatistics with a minimum of 12 credit hours that will provide significant additional statistical analysis competencies over those required as part of the PhD requirements. The discipline of biostatistics is growing in national and international importance, is integral to many areas of pursuit, enhances analytic and databased management skills that are desirable for many doctoral level research projects, offers population-based research perspectives, offers skills that are of interest to the private and public sectors, and formally acknowledges the quantitative course work that doctoral students often take as electives through the Department of Biostatistics.

Students who pursue a minor in Biostatistics will complement their major area of study with concepts

underlying the scientific method and applications of data collection, analysis, interpretation, and reporting of results. The minor in Biostatistics emphasizes the design and analysis of experimental and observational studies, theory of probability and statistics, and statistical computing.

The minor in Biostatistics would be particularly valuable to students in health related doctoral programs from many schools, including the IU Schools of Nursing, Dentistry, Medicine, Health and Rehabilitative Sciences, Public and Environmental Affairs, and others. Biostatistics faculty in the Department of Biostatistics will serve as advisors for students choosing this minor.

The curriculum for the PhD minor in Biostatistics provides students with a rigorous grounding in the application of biostatistics in health-related research. This minor requires a strong quantitative aptitude and an interest in biomedical and public health applications.

### Prerequisites for the Minor in Biostatistics

Minimum of two semesters of Biostatistics.

- PBHL B551 –Biostatistics I for Public Health or PBHL B561 –Biostatistics I or Equivalent
- PBHL B562 –Biostatistics II for Public Health

### Required Courses

Four (4) Required Courses

- PBHL B571 Biostatistics Method I: Linear Regression Model (4 hours)
- PBHL B572 Biostatistics Method II: Categorical Data Analysis (4 hours)

One of the following Two (2) Options

Option 1:

- PBHL B573 –Biostatistics Methods III: Applied Survival Analysis (4 hours)

Option 2 (two of the following electives)

- PBHL B574 –Biostatistics Methods IV: Applied Longitudinal Data Analysis (3 hours)
- PBHL B582 –Introduction to Clinical Trials (3 hours)
- PBHL B583 –Applied Multivariate Analysis for Public Health (3 hours)
- PBHL B585 –Analysis of Observational Studies (3 hours)
- PBHL-B 586 – Technical Reporting and Scientific Writing (1 hour)

Other courses may be taken if approved by the student's minor advisor. Students who have already completed any of the required courses as part of their MPH or PhD requirements cannot apply these courses toward their minor in Biostatistics. In this case, students must work with their faculty advisor to identify alternate courses in Biostatistics.

The student's minor advisor will monitor satisfactory completion of the requirements for the doctoral minor in Environmental Health Science. Doctoral students must notify the Fairbanks School of Public Health before beginning their course of study for the minor.

### Faculty

**Biostatistics Doctoral Program Director:** Constantin Yiannoutsos, PhD

[Biostatistics Faculty Directory](#)

## Courses

### 500 Level

#### **PBHL –B 561: Introduction to Biostatistics I (3 cr.)**

P: consent of instructor. This course introduces the basic principles and methods of data analysis in public health biostatistics. Emphasis is placed on public health examples as they relate to concepts such as sampling, study design, descriptive statistics, probability, statistical distributions, estimation, hypothesis testing, chi-square tests, t- tests, analysis of variance, linear regression and correlation. SAS software is required for some of the homework questions.

#### **PBHL –B 562: Biostatistics-Public Health II (3cr.) P:**

PBHL –B 561 or equivalent. This course introduces the advanced principles and methods of data analysis in public health biostatistics. Emphasis is placed on public health examples as they relate to concepts such as: Multiple regression, analysis of variance and covariance, logistic regression, nonparametric statistics, survival analysis, epidemiology statistics, and repeated measures analysis.

#### **PBHL –B 571 Biostatistics Method I-Linear Regression Model (4 cr.) P:**

PBHL –B 561 or equivalent. It course covers fundamental methods in Experiment Design, ANOVA, Analysis of Covariance, Simple and Multiple Linear Regressions with applications in biomedical study and public health. The focus of this course is to prepare students with solid skill in data analysis and interpretation of analytic results for numerical outcomes. Extensive use of Statistical software SAS is anticipated.

#### **PBHL –B 572: Biostatistics Method II-Categorical Data Analysis (4 cr.) P:**

PBHL –B 571 or equivalent. This course covers applied statistical methods for the analysis of categorical data with special emphasis on data collected from epidemiologic studies and general biomedical studies in various designs such as prospective cohort and retrospective case-control designs. The focus of this course is to prepare students with solid skill in data analysis and interpretation of analytic results for binary, multilevel and count data. Extensive use of Statistical software SAS is anticipated.

#### **PBHL –B 573: Biostatistics Method III-Applied Survival Data Analysis (4 cr.) P:**

PBHL –B 571, 572 or equivalent This course covers basic components in modern survival data analysis with emphasis on its application in biomedical research and public health. It includes the topics of types of censoring and truncation, life tables and survival function estimation, nonparametric log-rank test, parametric accelerated failure time model, semiparametric Cox proportional hazards model and extended Cox regression for time-dependent variables, competing risks and correlated survival data. The focus of this course is to prepare students with solid skill in data analysis and interpretation of analytic results for time-to-event data. Extensive use of statistical software SAS is anticipated.

#### **PBHL –B 574 Biostatistics Method IV-Applied Longitudinal Data Analysis (3 cr.) P:**

STAT5200 or PBHL –B 571, 572 or permission of instructor. Covers modern methods for the analysis of repeated measures, correlated outcomes and longitudinal data. Topics: repeated measures ANOVA, random effects and growth curve models, generalized estimating equations (GEE) and generalized linear mixed models (GLMMs). Extensive use of statistical software, e.g. SAS, R.

#### **PBHL –B 581 Biostatistics Computing (3 cr.) P:**

consent of instructor. The objective of this course is to prepare students with the necessary SAS skills for general data preparation, description, visualization, and some advanced skills. This course may be viewed as computing preparation for Biostatistics methods courses. Data steps and the following procedures will be covered: IMPORT, SORT, PRINT, FORMAT, TABULATE, REPORT, MEANS, UNIVARIATE, FREQ, CORR, SQL, GPLOT, SGLOT, SGPADEL. SAS macro, ODS and IML will also be briefly introduced.

#### **PBHL –B 582 Introduction to Clinical Trials (3 cr.) P:**

STAT 51200, exposure to survival analysis; or consent of instructor. Prepares biostatisticians for support of clinical trial projects. Topics: fundamental aspects of the appropriate design and conduct of medical experiments involving human subjects including ethics, design, sample size calculation, randomization, monitoring, data collection analysis and reporting of the results.

#### **PBHL –B 583 Applied Multivariate Statistical Methods for Public Health (3 cr.) P:**

PBHL –B 551, 652 or equivalent. This is an introductory applied multivariate statistics course designed specifically for graduate students with a PhD major in epidemiology (or advanced masters epidemiology students). The course can also be taken by other non-statistician majors, for example, PhD students in other medical sciences and health care professionals. Students are expected to have taken two previous courses in statistics (introductory and intermediate) covering up through t-test, ANOVA, ANCOVA, linear regression, and logistic regression. The overall objective of this course is to use public health examples while introducing classic multivariate statistical techniques. The course will focus on applications using the SAS software. Very little attention will be given to matrix algebra. Instead, greater importance will be placed on conceptual understanding and interpretations. Basic bivariate statistics, data screening (e.g., missing data, outliers, assumptions, multi-collinearity), and regression will be reviewed. The following classic multivariate techniques will be covered: canonical correlation, MANOVA, MANCOVA, discriminant analysis, principal components analysis, exploratory factor analysis, confirmatory factor analysis, and structural equation modeling (SEM). Two special topics will be introduced but not tested over: (1) mixed linear models for repeated measures analysis and multi-level modeling of clustered data; and (2) analysis of sample survey data, obtained from complex sampling designs, using the SAS SURVEY procedures with sampling weights.

#### **PBHL –B 584 Biostatistical Practicum (1-3 cr.) P:**

STAT52100; PBHL –B 582, 574; or consent of instructor. Real-world projects in biostatistics involving participation in consulting sessions, directed reading in the literature, research ethics, design of experiments, collection of data



and applications of biostatistical methods. Detailed written and oral reports required. May be repeated up to 6 credits.

**PBHL –B 585 Analysis and Interpretation of Observational Studies (3 cr.)** P: PBHL-B 561, 562 or equivalent. This course examines fundamental aspects of analyzing data generated by observational epidemiology studies. The focus is on developing a solid understanding of contemporary analytical techniques to increase the validity of the study and control for possible confounding factors and biases.

**PBHL -B 587 Nonlinear Mixed Models (3 cr.)** P: STAT52800, 51200 or equivalent. . This course will develop the student's ability to understand the pharmacokinetic/pharmacodynamic model, fit the nonlinear mixed model through the required software package, conduct the diagnosis of model fitting, perform the hypothesis tests, and provide the interpretation of the data.

### 600 Level

**PBHL -B 616 Advanced Statistical Computing (3 cr.)** This course will cover selected computational techniques useful in advanced statistical applications and statistical research. Topics to be covered include methods for solving linear equations, numerical optimization, numerical integration, Expectation-Maximization (EM) algorithm, Monte Carlo method, Bayesian methods, bootstrap methods and stochastic search algorithms.

**PBHL B 626 Advanced Likelihood Theory (3 cr.)** This course covers theoretical foundation of statistical inference with focus on likelihood theory and its application on biomedical studies. It provides a good preparation for advanced biostatistics courses such as Advanced GLM, Advanced Longitudinal Data Analysis, and Advanced Survival Analysis.

**PBHL B 636 Advanced Survival Analysis (3 cr.)** P: STAT 53600, 62800, or PBHL –B 626 or equivalent. Addresses the counting process approach to the analysis of censored failure time data. Standard statistical methods in survival analysis will be examined, such as the Nelson-Aalen estimator of the cumulative hazard function, the Kaplan-Meier estimator of the survivor function, the weighted log-rank statistics, the Cox proportional hazards regression model, and the accelerated failure time model.

**PBHL –B 646 Advanced Generalized Linear Model (3 cr.)** P: STAT52500 or equivalent. This course focuses on the key concepts and theoretical underpinnings of generalized linear models (GLM). It describes the basic modeling structure, theoretical properties of parameter estimates, and model fitting approaches in the context of GLM. It also covers some of the more recent extensions of GLM.

**PBHL -B 656 Advanced Longitudinal Data Analysis (3 cr.)** P: PBHL –B 574 or equivalent. The theory of classical and modern approaches to the analysis of clustered data, repeated measures, and longitudinal data: random effects and growth curve models, generalized estimating equations, statistical analysis of multivariate categorical outcomes, estimation with missing data. Discussion of computational issues: EM algorithm, quasi-likelihood methods, Bayesian methods for both traditional and new methodologies.

**PBHL -B 698 Topics in Biostatistical Methods (1-3 cr.)** P: Consent of instructor. Directed study and reports for students who wish to undertake individual reading and study on approved topics.

**PBHL -B 800 Research-Ph.D. Thesis (1---15 cr.)** P: Must have been admitted to candidacy. See advisor for more information. Research required by the graduate students for the sole purpose of writing a Ph.D. Dissertation.

**PBHL E 517 Fundamentals of Epidemiology (3 cr.)** This course will introduce students to basic epidemiologic concepts including determinants of health and patterns of disease in populations, population health descriptive techniques, use of health indicators and secondary data sources. Students will gain an understanding of the role of Epidemiology in developing prevention strategies and policy. Among the topics to be covered are measures of mortality and morbidity, design and analysis of observational studies, community health assessment and program evaluation.

**PBHL P 510 Introduction to Public Health (3 cr.)** Students will learn the basic foundations and disciplines of public health. Explore the public health impact where populations live, work and play will be covered. Students will develop tools to examine issues and create solutions through a public health lens.

**STAT 51200 Applied Regression (3 cr.)** P: STAT 51100 or equivalent. Inference in simple and multiple linear regression, residual analysis, transformations, polynomial regression, model building with real data, nonlinear regression. One-way and two-way analysis of variance. Use of existing statistical computing package.

**STAT 51900 Introduction to Probability (3 cr.)** P: MATH26100 or equivalent. Algebra of sets, sample spaces, combinatorial problems, conditional probability, independence, random variables, distribution functions, characteristic functions, special discrete and continuous distributions, distributions of function of random variables, limit theorems.

**STAT 52500 Generalized Linear Model (3 cr.)** P: STAT52800 or equivalent or consent of instructor. Generalized linear models, likelihood methods for data analysis, diagnostic methods for assessing model assumptions. Methods covered include multiple regression, analysis of variance for completely randomized designs, binary and categorical response models, and hierarchical log-linear models for contingency tables.

**STAT 52800 Mathematical Statistics I (3 cr.)** P: STAT51900 or equivalent. Sufficiency and completeness, the exponential family of distributions, theory of point estimation, Cramer-Rao inequality, Rao-Blackwell Theorem with applications, maximum likelihood estimation, asymptotic distributions of ML estimators, hypothesis testing, Neyman-Pearson Lemma, UMP tests, generalized likelihood ratio test, asymptotic distribution of the GLR test, sequential probability ratio test.

**STAT 53600 Introduction to Survival Analysis (3 cr.)** P: STAT 51700 or equivalent. Deals with the modern statistical methods for analyzing time-to-event data. Background theory is provided, but the emphasis is on the applications and the interpretations of results. Provides



coverage of survivorship functions and censoring patterns; parametric models and likelihood methods, special lifetime distributions; nonparametric inference, life-tables, estimation of cumulative hazard functions, the Kaplan-Meier estimator; one and two-sample nonparametric tests for censored data; semiparametric proportional hazards regression (Cox Regression), parameters' estimation, stratification, model fitting strategies and model interpretations. Heavy use of statistical software such as Splus and SAS.

**PBHL -B 621 Advanced Statistical Computing (3 cr.)**

P: STAT 52100 or experience with R/Splus programming. This course covers selected computational techniques useful in advanced statistical applications and statistical research, such as methods for solving linear equations, numerical optimization, numerical integration, Bayesian methods, bootstrap methods, and stochastic search algorithms.

**PBHL -B 626 Advanced Likelihood Theory (3 cr.)**

P: STAT51900, STAT52800 or equivalent. This course covers fundamental theory in likelihood-based inferences and their applications in statistical models for various types of data encountered in biomedical research. It prepares students with extensive skills in applying law of large number and central limit theorems to a large range of likelihood related problems and missing data problems.

**PBHL -B 627 Statistics in Pharmaceutical Research (3 cr.)**

P: STAT 51200; PBHL -B 582, PBHL -B 574 or equivalent. An overview of the drug development process, including the various phases of development from pre-clinical to post-marketing. Topics: statistical issues in design, study monitoring, analysis and reporting. Additional topics may include regulatory and statistical aspects of population pharmacokinetics and real world applications.

**STAT 61900 Probability Theory (3 cr.)** P: STAT 51900, 52800 or equivalent. Theory Measure theory based course in probability. Topics include Lebesgue measure, measurable functions and integration. Radon-Nikodym Theorem, product measures and Fubini's Theorem, measures on infinite product spaces, basic concepts of probability theory, conditional probability and expectation, regular conditional probability, strong law of large numbers, martingale theory, martingale convergence theorems, uniform integrability, optional sampling theorems, Kolmogorov's Three series Theorem, weak convergence of distribution functions, method of characteristic functions, the fundamental weak compactness theorems, convergence to a normal distribution, Lindeberg's Theorem, infinitely divisible distributions and their subclasses.

**STAT 62800 Advanced Statistical Inference (3 cr.)** P: STAT 51900, 52800, C: STAT 61900 or equivalent.. Real analysis for inference, statistics and subfields, conditional expectations and probability distributions, UMP tests with applications to normal distributions and confidence sets, invariance, asymptotic theory of estimation and likelihood based inference, U-statistics, Edgeworth expansions, saddle point method.

## Clinical Research

### School of Medicine

#### Curriculum

Departmental URL: <https://www.indianactsi.org/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

#### Curriculum

#### Courses

#### Program Director

Professor Kurt Kroenke\*

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Degree Offered

Master of Science, Graduate Certificate, PhD Minor

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

#### Master of Science in Clinical Research

Indiana University's Master of Science in Clinical Research degree program prepares health care professionals for a career in clinical research. This program offers a combination of course work and practical research experience and is a core component of the Indiana Clinical and Translational Sciences Institute (CTSI). The program also constitutes the formal didactic requirements for certain types of federal training grants (such as K-23s) and other career awards. Following completion of the program, graduates can embark on a career in clinical research with the skills necessary to successfully compete for grant funding, conduct and analyze research findings, and publish work in scientific journals.

#### Course Requirements

The Master of Science program is divided equally between two main components: (1) completion of the formal curriculum and (2) active involvement in clinical research under the mentorship of a faculty scientist. Both elements are critical in preparation of the candidate for successful research following graduation. The curriculum is designed to cover core competency areas through a combination of course work and mentored research. The two-year M.S. program consists of a 30 credit hour curriculum, which includes the following core courses—GRDM-G504, PBHL-B561, GRDM-G660, GRDM-G661, GRDM-G664, and approved electives (9-12 credits).

#### Grades

A grade point average of B (3.0) is required in all coursework.

#### Thesis

Research project (see GRDM-G664 Mentored Clinical Research) is completed in lieu of thesis.

### Graduate Certificate in Clinical Research

This is a 14 credit degree with three required courses (GRDM-G660 Clinical Research Methods, GRDM-G504 Research Ethics and GRDM-G661 Clinical Trials or PBHL-B561: Introduction to Biostatistics I). These three courses will constitute 8-9 credits; the remaining 5-6 credits will consist of graduate-level elective courses that are relevant to the student's clinical interests.

Electives (4-6 cr.) (approved by program director) include graduate-level courses in advanced biostatistics, epidemiology, clinical pharmacology, genetics, molecular biology, computer sciences, or other courses relevant to the individual student's field of clinical research.

### Ph.D. Minor in Clinical Research

The 12-credit PhD Minor in Clinical Research is designed to be of service to a diverse clientele. It will provide PhD students with an overview of clinical research by introducing them to core clinical research concepts and skills, including clinical research methodology, clinical trials, research ethics, and biostatistics. Additionally, each student will complete one elective relevant to their specific area of research interest.

The Clinical Research Minor includes 9 credit hours of core coursework selected from the following list, and one 3-credit graduate level elective:

Clinical Research Methods – GRDM-G660

Clinical Trials – GRDM-G661

Introduction to Research Ethics – GRDM-G504

Introduction to Biostatistics I – PBHL-B551, PBHL-B561, or alternate biostatistics course.

Elective course selections will be approved by the Minor program director in conjunction with the student's PhD program advisor.

### Courses

- GRDM-G 504 Intro to Research Ethics (2-3 cr.)  
An introduction to both the theory and practice of research ethics. The course also covers key ethical principles and concepts.
- GRDM-G 660 Clinical Research Methods (3 cr.)  
This course provides instruction in the major types of study design (other than clinical trials) used in clinical research, including cohort, case-control, cross-sectional, survey, and secondary database studies. Also, fundamental themes and special topics in clinical research are covered.
- GRDM-G 661 Clinical Trials (3 cr.) This course includes topics in conducting clinical trials, including design, recruitment, informed consent, randomization, blinding, data collection and analysis, safety monitoring, study closeout, and alternative designs such as crossover and nonrandomized trials. Some important research areas besides clinical trials are also covered.
- GRDM-G 664 Mentored Clinical Research (7-9 cr.)  
This is an organized research project in the form of an organized scientific contribution or comprehensive analysis conducted under the mentorship of a faculty scientist from the individual

CITE enrollee's core discipline. The capstone experience is submission of an abstract to a scientific meeting, defense of one's research before an advisory committee, and completion of a first-authored paper deemed suitable for publication in a scientific journal.

- PBHL-B 551 Biostatistics - Public Health I (3 cr.)  
This course introduces the basic principles and methods of data analysis in public health biostatistics.
- PBHL-B 561 Introduction To Biostatistics I (3 cr.)  
B561 is an introductory level biostatistics course designed for healthcare professionals. This course will cover the topics on data presentation techniques, describing data with numerical summary measures, probability and probability distributions, sampling distributions, statistical inferences from small and large samples, analysis of categorical data, analysis of variance, correlation and simple linear regression analysis.

## Computer Science

### School of Liberal Arts

Departmental E-mail: [yxia@cs.iupui.edu](mailto:yxia@cs.iupui.edu)

Departmental URL: <http://cs.iupui.edu/graduate/degrees/minor>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in The University Graduate School Bulletin.)

### Curriculum

#### Degree Offered

### Ph.D. Minor in Computer Science

The objective of the graduate minor in computer science is to provide an opportunity for current Indiana University or Purdue University doctoral students in other disciplines at IUPUI to learn and use computer science techniques and tools to solve problems in their academic fields. Such a minor is helpful, as the use of information technology in other academic areas has proliferated; future researchers and faculty members must be familiar with the fundamentals of computer science to aid in their own research and discovery.

Students who are enrolled in any Indiana University or Purdue University doctoral program at IUPUI may apply for admission to the graduate minor. Students must submit an internal application to the department for review. Admissions are done on a rolling basis. Applicants are required to have a background in computer science of at least CSCI 36200 Data Structures or equivalent course. Exceptions to this requirement will be made only in rare cases to otherwise outstanding students.

### Course Requirements

The minor will require coursework totaling 12 graduate credit hours at the 500 level or above. These must include one three-credit hour core course selected from the following list, and three elective computer science courses. Additional CSCI courses at the 500 level or above, such as independent studies, may be substituted

for elective courses with the permission of a student's faculty advisor and the Minor Program Coordinator, Dr. Yuni Xia.

CSCI 50300, Operating Systems

CSCI 56500, Programming Languages

CSCI 58000, Algorithm Design, Analysis, and Implementation

Approved Elective Courses: CSCI 50600, 54100, 54900, 55000, 55200, and these variable title courses: Cryptography & Network Security, Data Mining, Distributed Databases, Pattern Recognition/Data Mining, and Wireless Sensor Networks. These topics courses are offered as CSCI 59000, and may acquire permanent course numbers in the future.

Minimum Overall GPA: Successful completion of the minor requires at least a B (3.0) average over all courses counting toward the minor. The minimum grade that will be accepted in any single course is C. Course grades of C- or below must be repeated and a C or higher grade must be earned.

Maximum Number of Transferable Credits: Applicants who have already earned credit for one or more of the equivalent courses from other institutions and other programs may request to apply up to a maximum of three credits of these coursed toward the minor. Any waivers or substitutions must be approved by the Minor Coordinator in consultation with the Department of Computer & Information Science's Graduate Committee. A maximum of three credits from another institution may be applied to the Graduate Minor.

Maximum Time for Completion: All requirements for the Graduate Minor must be completed within four calendar years. Most students enrolled in this program will be full-time students, and should attempt the minor during the early part of their studies.

Number of Allowable Credit Hours taken Prior to Admission: Up to 6 (six) equivalent credit hours taken prior to admission into the Graduate Minor program may be applied toward the minor. Up to three of these may be from another institution.

## Faculty

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations)

### Program Director

Professor Yuni Xia\*, [yxia@cs.iupui.edu](mailto:yxia@cs.iupui.edu), (317) 274-9738

## Dentistry

### School of Dentistry

Departmental E-mail: [ds-grad@iupui.edu](mailto:ds-grad@iupui.edu)

Departmental URL: <https://www.dentistry.iu.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

## Curriculum

### Degrees Offered

Master of Science and Doctor of Philosophy.

In addition, the School of Dentistry offers the Master of Science in Dentistry and a certificate program in oral and maxillofacial surgery; for details see the School of Dentistry Bulletin.

### Special School Requirements

(See also general University Graduate School requirements.)

The M.S. and Ph.D. programs are designed principally for students who expect to enter dental education and research upon completion of their programs. The M.S.D. program is intended for students interested primarily in the specialty disciplines of dentistry.

### Master of Science Degree

Graduate work in the School of Dentistry leading to the M.S. degree includes advanced laboratory, lecture, library, and seminar courses. (See School of Dentistry Bulletin for M.S.D. and certificate programs offered in the advanced specialty disciplines in dentistry.)

### Admission Requirements

(1) Bachelor's degree with appropriate concentration in science (for applicants, other than dentists, who wish to pursue advanced degrees in dental science); (2) overall B (3.0) average; (3) appropriate level of achievement in course work in the major area of concentration; and (4) evidence of potential for success in advanced graduate work, as attested by letters of recommendation from major professors or others familiar with the applicant's academic performance or professional background. A personal interview may be required in some instances.

### Grades

Students must maintain an academic average of at least 3.0 (B) on a 4.0 scale.

### Course Requirements

A minimum of 30 credit hours of approved courses appropriate to one of the major disciplines given above, including 6 credit hours in an approved minor subject and 6 credit hours of research. See School of Dentistry Bulletin and individual program directors for specific details on curricula.

### Thesis

Students must submit a thesis or a manuscript for publication, depending on the individual program, based on the original research conducted.

### Final Examinations

A comprehensive oral and written examination is taken any time after the first semester. A defense of thesis examination is required upon submission of the thesis or manuscript to the student's graduate committee.

### Doctor of Philosophy (Ph.D.) Degree in Dental Science

The objective of the Ph.D. in Dental Science Program is to provide a core curriculum that offers a solid scientific base for a career in research and/or teaching in the dental sciences. The Ph.D. degree in Dental Science (Preventive

Dentistry, Oral Biology, Dental Materials or Dental Biomaterials track) focuses on basic and clinical science areas as they relate to the human organism and on the effect of dental materials on biological systems. Graduates of this program are ideal candidates for academic teaching and/or research positions in dental schools, medical schools, and other basic science departments as well as for research positions in government institutions and industry.

### **General Information**

#### **Admission Requirements**

The program is open to persons who have earned the Doctor of Dental Surgery degree or its equivalent as well as graduates of bachelor of science degree programs. Applicants must have a minimum grade point average of 3.0 or higher on a 4.0 scale (grade point averages from the dental degree in the case of dental school graduates). Candidates for the Ph.D. degree program must have a minimum score on the Graduate Record Examination (GRE) of 160 in the verbal, 148 in the quantitative, or 3.0 in the analytical section. In addition, a TOEFL score of 79 or higher must be obtained by applicants from non-English speaking countries.

#### **Program Requirements**

The degree requires 90 credit hours with 32–40 required course credits (depending on the choice of track) and 12 credits in a minor. Disciplines included in the program are anatomy, biochemistry, biomedical engineering, biostatistics, cell biology, chemistry, immunology, materials science engineering, mechanical engineering, microbiology, molecular biology, pathology, physics, and physiology. Students are required to enroll in the IUPUI Preparing Future Faculty (PFF) program.

#### **Minor**

The minor consists of 12 credit hours in any one of the advanced basic science courses (anatomy, biochemistry, biomedical engineering, chemistry, materials science engineering, mechanical engineering, microbiology and immunology, pathology, pharmacology, physics, physiology, life science) or their equivalents, as approved by the student's advisory committee and the chairperson of the minor department. Credit hours for the required courses may not count toward the minor courses.

#### **Qualifying Examination (for Admission to Candidacy)**

The qualifying exam consists of two parts: 1) writing and presenting an oral defense of a research proposal, and 2) sitting for a comprehensive written examination.

#### **Core Curriculum**

Descriptions of the following courses that do not appear on the list of graduate courses in this bulletin can be found in this bulletin or in the School of Medicine or School of Education bulletin.

#### **Oral Biology Track**

(The Oral Biology Track core curriculum is listed below plus 12 minor credits are required.)

#### **Required Courses**

##### **Biochemistry**

B500 or B800 and G817

##### **Microbiology**

J822 or J510 or J805

##### **General Graduate**

G651, G504 or G505, G865, G655, and EDUC J500, PSY 608 or other teaching method course recommended by the program director.

##### **Dental/Oral Biology**

R959 or G910 and R956

##### **Research** (remainder of 90 cr.)

R957 and R958

##### **Preventive Dentistry Track**

(The Preventive Dentistry Track core curriculum is listed below plus 12 minor credits are required.)

#### **Required Courses**

R909, R910, R911, G974, and G959

Courses from the following list can be used to complete the total hours required for the major subject: G905, G911,

##### **General Graduate**

G651, G504 or G505, G655 and EDUC J500, PSY 608 or other graduate level teaching method course recommended by the program director.

##### **Dental/Oral Biology**

G910 or R959 and R956

##### **Research** (remainder of 90 cr.)

R958 and G930

#### **Required Dental Sciences Courses for Non-Dental Preventive Dentistry Track Applicants**

Applicants without a dental degree may apply for the Preventive Dentistry Track, but are required to take the following courses in the first two years of the program: G981, G969, G988 or G935.

##### **Dental Materials Track**

(The Dental Materials Track core curriculum is listed below plus 12 minor credits)

#### **Required Courses:**

##### **Biochemistry - Microbiology**

B500 or G959

##### **General Graduate**

G651, G504 or G505, G865, G655, J500 or 608 or other graduate level teaching method course recommended by the program director.

##### **Dental Materials**

G911, G912, G913, G910, R956

##### **Dental Biomaterials Track**

(The Dental Biomaterials Track core curriculum is listed below, plus 12 minor credits.)

#### **Required Courses**



**Biochemistry-Microbiology**

B500 or G959

**General Graduate**

G651, G504 or G505, G865, G655 and EDUC J500, PSY 608 or other graduate level teaching method course recommended by the program director.

**Dental Materials**

G910, G911, G912, G913, and R956

**Elective Classes** (determined by the student's advisory committee)

Offered by the Purdue University School of Materials Science and Engineering (MSE) or Indiana University School of Dentistry. MSE 53000 or MSE 23000, MSE 24000, MSE 33500, MSE 35000, MSE 38200, the MSE Graduate Seminar, G865, or M527.

**Specialty Courses** (determined by the student's advisory committee)

- Polymers (MSE 59700Y, MSE 52500, and MSE 59700B-A and AE 59000M)
- Ceramics (MSE 51000, MSE 51200, MSE 52300, and MSE 55600)
- Metals (MSE 50800, MSE 52200, and MSE 51000)
- Biomechanics (BME 59500C, BME 59500J, and MSE 55600)
- Tissue Engineering (BME 59500E, BMS 52300, BME 60100, BME 60200, and BME 59500B)

**Research** (remainder of 90 cr.)

- R957 and G921, G930

**Faculty****Dean**

Professor John Norton Williams

**Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

**Distinguished Professor**

George Stookey\* (Emeritus)

**Professors**

David R. Avery (Emeritus), , David T. Brown, Timothy J. Carlson, Jie Chen, Arden Christen\* (Emeritus), Michael A. Cochran (Emeritus), T.M. Gabriel Chu\*, Jeffrey Alan Dean, Paul Edwards, Lawrence P. Garetto\* (Emeritus), Lawrence I. Goldblatt (Emeritus), Richard L. Gregory\*, E. Brady Hancock (Emeritus), Steven P. Haug, William F. Hohlt (Emeritus), James Earl Jones, Michael Josef Kowolik\*, Katherine S. Kula, Melvin R. Lund (Emeritus), Esperanza Angeles Martinez Mier\*, Bruce A. Matis (Emeritus), Gerardo Maupome-Carvantes\*, Chris H. Miller\* (Emeritus), B. Keith Moore\* (Emeritus), Dean Morton, Donald H. Newell (Emeritus), Yoshiki Oshida\* (Emeritus), Edwin T. Parks (Emeritus), W. Eugene Roberts Jr.\* (Emeritus), Brian J. Sanders, , James C. Shanks (Emeritus), S. Miles Standish\* (Emeritus), Charles Tomich\* (Emeritus), Margot Van Dis (Emerita), John

Norton Williams, Gail F. Williamson, L. Jack Windsor\*, Karen Masbaum Yoder (Emeritus), Domenick T. Zero\*, Susan L. Zunt

**Associate Professors**

Masatoshi Ando\*, Steven B. Blanchard, Angela Bruzzaniti\*, Christianne Guba Cochran, Simone Duarte, Dominique M. Galli\*, Anderson Hara\*, Suteera T. Hovijitra (Emerita), Richard D. Jackson\*, Vanchit John, Thomas R. Katona\*, Joan E. Kowolik, Wei-Shao Lin, Frank Lippert\*, Jeffrey A. Platt\*, Laura Romito-Cera, Jack Schaaf (Emeritus), Stuart A. Schrader, Armando Soto\*, Mythily Srinivasan, Kelton Stewart, Thankam Thyvalikakath\*, George P. Willis (Emeritus), Juan Yepes

**Assistant Professors**

Achint Utreja, LaQuia Vinson, Chandler Walker

**Associate Dean for Graduate Education and Director of Ph.D. Program**

Richard L. Gregory\*, OH 123, (317) 274-5349

**Earth Sciences****School of Science**Departmental E-mail: [earthsciences@iupui.edu](mailto:earthsciences@iupui.edu)Departmental URL: [www.earthsciences.iupui.edu](http://www.earthsciences.iupui.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

**Curriculum****Degree Offered**

Master of Science in Geology (with concentration in environmental geology), Doctor of Philosophy in Applied Earth Sciences

**Doctor of Philosophy****Special Departmental Requirements**

(See also general University Graduate School requirements.)

The objective of the Ph.D. in Applied Earth Sciences is to provide training at the interface between earth sciences, including water, land, soil, and human welfare. This research degree focuses on the beneficial and harmful interactions between humans and earth systems, and is interdisciplinary in scope and training. The PhD program is organized into four concentration areas (or cores): physical earth, geochemical processes, water resources, and human and environmental systems. Graduates of this program are ideal candidates for academic teaching and/or research, as well as for research positions and science policy positions in government institutions and industry.

**Admission Requirements**

Prospective students should have a bachelor's or master's degree in the physical, biological, or medical sciences, and a minimum of a B (3.0) average in science courses. One year of chemistry and mathematics through college algebra and trigonometry are required. The Graduate



Record Examination (GRE) General Test is required. Each student must submit three letters of recommendation.

### Program Requirements

The degree requires 90 credit hours; we accept up to 30 credit hours of previous graduate course work to satisfy the 90 credit hour requirement. Students will have several required courses, determined by their advisory committee and their research committee, to satisfy the Ph.D. requirements including the concentration area (15 credits), and the minor (12 credits). Within a chosen concentration area, students must take at least 9 credits in the Department of Earth Sciences.

Admitted students are assigned a three-person advisory committee at the beginning of the first year of graduate study. The committee prescribes a study program based on the interests of the student and the principal graduate advisor. By the end of the second semester, the advisory committee appoints a research committee (5 members) to oversee the qualifying exam and the dissertation defense. The research committee includes at least three faculty members from the department of Earth Sciences and the minor advisor (who must be outside the department of Earth Sciences). In order to maintain proper balance in the expertise represented in the research committee, the principal graduate advisor can petition the Graduate Affairs committee to replace one Earth Sciences faculty by an external member, as long as this member has already been approved by the University Graduate School. Upon advancement to candidacy, students must complete all remaining degree requirements within five years.

### Common Core

Because of the interdisciplinary nature of the program and the diverse academic background of admitted students, all students are required to take the common core class, "Applied earth sciences: The human dimension." The advisory committee may recommend one more fundamental earth sciences course to address deficiencies.

### Minor

The minor consists of 12 credit hours of advanced coursework completed either outside of the department of Earth Sciences (ES), or within an Indiana University (IU) approved minor program, as approved by the student's advisory committee and the chairperson of the department hosting the minor. If the IU minor also includes courses within the ES Department, such courses cannot also count toward the required 15 credits for the concentration area (see above).

### Qualifying Examination (for Admission to Candidacy)

The qualifying exam consists of writing and presenting an oral defense of a research proposal. Successful completion of the qualifying exam is one of the requirements for advancement to degree candidacy.

### Grades

A "B" (3.0) average or higher must be maintained; no more than 6 credit hours of "C" are acceptable.

## Master of Science in Geology, with concentration in environmental geology

### Special Departmental Requirements

(See also general University Graduate School requirements.)

### Admission Requirements

Prospective students should have a bachelor's degree in geology, including a summer field course, and a minimum of a "B" (3.0) average in geology courses. One year of chemistry and mathematics through college algebra and trigonometry are required. Individuals with a bachelor's degree in another area of science are also encouraged to apply; the departmental graduate advisory committee will prescribe a plan of study to remove deficiencies. The Graduate Record Examination (GRE) General Test is required. Each student must submit three letters of recommendation.

### Course Requirements

Both thesis and non-thesis options are available. Both options require at least 21 credit hours of non-research course work, with at least 3 credit hours in courses approved for graduate credit from allied disciplines with the approval of the graduate advisor. Up to 6 credit hours of 400-level courses approved for graduate credit may be counted toward the degree with the approval of the graduate advisor. The thesis option requires the completion of 30 credit hours, 6 of which are taken as G810 Research (the thesis). The non-thesis option requires the completion of 36 credit hours, 3 of which consist of a research project taken as G700 Geologic Problems. The departmental graduate committee must approve elective credits outside the Department of Earth Sciences for both options.

Admitted students are assigned a three-person advisory committee at the beginning of the first year of graduate study. The committee prescribes a study program based on the interests of the student and the principal graduate advisor. Students must complete all degree requirements within five years of beginning this study program.

### Grades

A "B" (3.0) average or higher must be maintained; and no grade below "C" is acceptable.

## Faculty

### Chairperson

Professor Kevin Mandernack

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct Doctoral dissertations.)

### Professors

Andrew P. Barth\*, Gabriel Filippelli\*, Pierre-Andre Jacinthe\*, Lin Li\*, Kathy Licht\*

### Associate Professors

Broxton Bird\*, Gregory K. Druschel\*, William P. Gilhooly III\*, Lixin Wang\*

### Assistant Professors

Catherine A. Macris

### Lecturers

Anna Nowicki Jessee, Jennifer Nelson, Thomas Rossbach

### Emeritus Faculty

Frederick Kleinhans\* (Physics), Joseph Pachut Jr. (Earth Sciences)

### Adjunct Faculty

Randy Bayless (USGS), Jennifer Latimer (Indiana State), Marty Risch (USGS), Xianzhong Wang (Biology), Jeffrey Wilson (Geography)

### Graduate Advisor

Professor Pierre-Andre Jacinthe\*, Engineering/Science/Technology Building, SL 118H, (317) 274-7969.

### Courses

- GEOL-G 502 Trace Element and Isotope Geochemistry (3 cr.) P: CHEM C360 or C361 or GEOL G406. Principles governing the distributions of trace elements, radioisotopes, and stable isotopes in igneous, metamorphic, or sedimentary environments. Emphasis on applications to petrology and geochronology.
- GEOL-G 502 Trace Element and Isotope Geochemistry (3 cr.) P: CHEM C360 or C361 or GEOL G406. Principles governing the distributions of trace elements, radioisotopes, and stable isotopes in igneous, metamorphic, or sedimentary environments. Emphasis on applications to petrology and geochronology.
- GEOL-G 519 Phanerozoic Stratigraphy of North America (3 cr.) P: G334 and G404, or equivalent. Lithostratigraphy, biostratigraphy, correlation, tectonic setting, and depositional environment of North American Phanerozoic rocks.
- GEOL-G 525 Glacial Geology (3 cr.) Formation, dynamics, and regimen of glaciers. Erosional and depositional processes and landforms. Glaciation of North America with emphasis on stratigraphy, soils, climates, and physical changes resulting from glacial processes and environments. Field investigations and a student research project required.
- GEOL-G 527 Geological Oceanography (3 cr.) P: Graduate standing, G334, and G413. Geological features and processes operating in the oceans; continental shelf, slope and ocean-basin geomorphology, sedimentology, structure, and composition; origin and geologic history of seawater and ocean basins.
- GEOL-G 535 Quaternary Geology (3 cr.) P: G415 or consent of instructor. Characteristics, distribution, and origin of Pleistocene and recent deposits; stratigraphy and chronology; formation of associated landforms, landscapes, paleosols, and soils; Quaternary environments. Core: environmental geoscience.
- GEOL-G 545 Applied Analytical Techniques in Geology (3 cr.) Principles of advanced analytical techniques including X-ray analysis, electron beam imaging and analysis, and mass spectrometry, with applications in geosciences. Lectures on theory followed by laboratory exercises. Students will complete individual or collaborative research projects.
- GEOL-G 546 Planetary Remote Sensing (3 cr.) P: Previous course in remote sensing, or consent of instructor. Application of multi-spectral data for exploration and mapping of planetary surfaces.
- GEOL-G 550 Surface Water Hydrology (3 cr.) P: G451 and M216, or consent of instructor. Mechanics of surface runoff and open channel flow. Rainfall-runoff equations, probability analysis of stream flow, and watershed simulation models. Chemistry of surface waters and stream pollution. Core: environmental geoscience.
- GEOL-G 551 Advanced Hydrogeology (3 cr.) P: G451. Basic principles and quantitative aspects of physical flow systems and chemistry of ground water and surface water. The relationships between water and geologic materials. Core: environmental geoscience.
- GEOL-G 561 Paleocology (3 cr.) P: Consent of instructor. Introduction to the principles and methods of analyzing fossil and modern organisms and their relation to the physical, chemical and biological environment. Analysis of large-scale, cohesive environmental influences on past life. Application of concepts to extra-terrestrial life.
- GEOL-G 583 Isotope Geochemistry (3 cr.) P: G406 or consent of instructor. Introduction to the theory and application of radiogenic and stable isotopes to a variety of sub-disciplines in the earth sciences. Topics include: geochronology, tracers, mass balance and mixing, hydrology and environmental applications, water-rock interaction, and biogeochemical cycles.
- GEOL-G 585 Environmental Geochemistry (3 cr.) Aquatic and environmental geochemistry, including freshwater and marine systems, natural and human-induced changes to geochemical systems, and the geochemical record of paleoceanographic and paleoclimatic variations.
- GEOL-G 595 Data Analysis Techniques in Geoscience (3 cr.) P: STAT 301 and CSCI 207, or equivalent. Application of statistical and numerical analysis techniques to geoscience data, including sampling methods, confidence intervals, least squares methods, correlation, time series analysis, and multivariate techniques. Emphasis on using a computer to solve geoscience problems.
- GEOL-G 596 Topics in Applied Environmental Geology (3 cr.) P: Consent of instructor. Application of geologic principles to common environmental problems. Topics covered include waste site assessment, flood hazard analysis and mitigation,

slope stability, and hydrogeology. Application of principles to problems pertaining to urban planning, earthquake-resistant design, and waste site/landfill development.

- GEOL-G 600 Advanced Techniques (3 cr.)  
P: Consent of instructor. Training in special geologic methods such as exploration seismology, experimental petrology, x-ray spectroscopy, electron probe microanalysis, isotopic and organic mass spectroscopy. Variable titles, may be taken five times without duplicating title.
- GEOL-G 621 Modeling Hydrological Systems (3 cr.) Introduction to ground water flow and solute transport modeling. Includes development of equations describing ground water flow and applied ground water/contaminant transport modeling using a variety of current software packages.
- GEOL-G 622 Urban Geology (3 cr.) P: Consent of instructor.
- Consideration of geologic factors in land-use planning in the urban setting. Availability and use of geologic resources, building and road materials, water supply, waste disposal, and geologic hazards. Emphasis on applications of principles to problem solving.
- GEOL-G 635 Soil Geomorphology (3 cr.) Application of geomorphic principles in evaluation of weathering and soil formation; systems analysis of soil-landscape models; paleogeomorphology and paleopedology. Lectures and discussion; field and laboratory problems.
- GEOL-G 640 Fluvial Geomorphology (3 cr.) Survey of fluvial processes including sediment transport, bed and bank erosion, and river metamorphosis. Examination of the controls on channel form. Analysis of landform genesis with an emphasis on feature sedimentology and stratigraphy. Application of fluvial geomorphic principles to land management and restoration of riparian ecosystems.
- GEOL-G 645 Carbonate Sedimentology (3 cr.)  
P: G334 or consent of instructor. Course focuses on origin and generation of carbonate grains, description of modern carbonate depositional environments, interpretation of ancient limestone and dolomite sequences, and carbonate diagenesis.
- GEOL-G 686 Advanced Soil Biogeochemistry (3 cr.) P: G406 or equivalent or consent of instructor. This course examines the chemical, biological and physical factors controlling the weathering of minerals and the formation of soils. Topics covered include: biological and chemical properties of soils, soil classification, carbon, nitrogen and phosphorus cycling in relation to food production and environmental quality.
- GEOL-G 690 Advanced Geology Seminar (arr cr.)  
P: Consent of instructor. Seminars on critical research issues and topical themes. S/F grading.
- GEOL-G 700 Geologic Problems (1-5 cr.)  
P: Consent of instructor. Consideration of special

geological problems. \*\*This course is eligible for a deferred grade.

- GEOL-G 810 Research (arr cr.) \*\*This course is eligible for a deferred grade.

## Economics

### School of Liberal Arts

Departmental E-mail: [teamgrad@iupui.edu](mailto:teamgrad@iupui.edu)

Departmental URL: <http://liberalarts.iupui.edu/economics/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Arts, Dual Master of Arts in Economics and Master of Arts in Philanthropic Studies, Doctor of Philosophy

#### Master of Arts

The Master of Arts in economics has a twofold objective: (1) to provide students with analytical capabilities and research skills for careers in business, government, and the nonprofit sector; and (2) to prepare those who wish to pursue a Ph.D.

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

#### Admission Requirements

Applicants should have completed a bachelor's degree from an accredited institution. Ordinarily, applicants should have a minimum grade point average of 3.0 on a 4.0 scale in their undergraduate course work and in their previous economics courses. Before undertaking graduate study in economics, a student should have knowledge of intermediate-level undergraduate economic theory (E321 and E322), statistics (E270), differential and integral calculus (the IUPUI equivalent is M16500 offered by the mathematics department). Students with deficiencies in economics and/or mathematics may be admitted on a conditional basis.

The verbal, quantitative, and analytical portions of the Graduate Record Examination (GRE) are required, and applicants are urged to complete the examination by December of the year before admission. Requests to substitute GMAT scores for GRE scores will be considered.

Three letters of recommendation are required, preferably from those familiar with the applicant's academic career.

Foreign applicants are required to take either the Test of English as a Foreign Language (TOEFL) or the International English Testing System (IELTS). The minimum requirements for admission are 79 on the TOEFL or 6.5 on the IELTS. Students with scores of less than 100 on the TOEFL or 7.5 on the IELTS are required to take an on-campus exam for English proficiency prior to their first semester of course work and may be required to take additional classes in English as a second language.

We also accept successful completion of ELS 112 in lieu of a TOEFL or IELTS score for admission.

### Course Requirements

Students must complete a minimum of 30 credit hours of graduate work. Of the 30 credit hours, 24 come from courses offered within the economics department and the remaining 6 hours are generally outside electives taken in other departments depending on the student's interest and long-term plans upon completion of the M.A.

### Grades

The student must receive at least a C (2.0) in each course and must average at least a B (3.0 on a 4.0 scale) for all courses taken.

### Dual Degree: Master of Arts in Economics and Master of Arts in Philanthropic Studies

The dual master's degree in economics and philanthropic studies substantially benefits students intending to pursue a career in independent research, academia, or practice. Normally, those pursuing a career in research or academia continue in a Ph.D. program in economics, finance, accounting, management, marketing, or public policy. Very few doctoral programs include substantial content on philanthropy or nonprofit organizations. As such, the M.A. in philanthropic studies provides a broad interdisciplinary background that makes the future researcher sensitive to the institutional details, values, and history of the sector, thus leading to better research. For the future nonprofit manager or leader, economics provides the principles and methodologies to make informed decisions on the appreciative level, the policy level, and the managerial level.

Admission requirements for the dual degree program are identical to those for each program separately. Separate application must be made to each of the two programs. Students are expected to take responsibility for learning about and meeting the admission requirements of each school individually, which may differ from each other in application documents required, minimal standards of criteria for admission, and deadline dates. Students must make plans early with advisors in both programs to identify (1) common courses and (2) thesis credit.

Study for the two degrees can be combined for a total of 51 credit hours rather than the 66 credit hours that would be required if the two degrees were taken separately. Two of the required core courses for the M.A. in economics may be selected as electives to meet the Philanthropic Studies Program requirement for two applied electives. One of the required philanthropic studies courses, ECON E514 The Nonprofit Economy and Public Policy, may be taken to meet 3 of the 12 credit hours of economics electives required in the economics program. A common thesis meets the requirements of both departments.

Further information regarding regulations governing advanced degree programs may be obtained from the respective departments.

### 5-year Dual BA-MA Degree

Students entering their senior year as undergraduate economics majors may apply for the 5-year BA-MA degree. This program is also 30-hours and requires many

of the same courses as does the standard MA program. Requirements for admission are the same as those for the standard MA.

### Doctor of Philosophy Degree Program Information

The PhD program is designed to (i) advance knowledge concerning health; (ii) develop the skills essential for our graduates to conduct independent research in this areas.

### Special Departmental Requirements

(See also general University Graduate School requirements.)

### Ph.D. Admission Requirements

Applicants should have completed a bachelor's degree from an accredited institution. Ordinarily, applicants should have a minimum grade point average of 3.0 on a 4.0 scale in their undergraduate course work and in the major. Before undertaking Ph.D. graduate study in economics, a student is required to have completed coursework covering undergraduate univariate and multivariate calculus (equivalent to MATH M16500, M16600, and M26100 at IUPUI), a calculus-based statistics course or a course in Statistics and one in Econometrics (equivalent to ECON E270 and E470 at IUPUI), Intermediate Microeconomic Theory (equivalent to E321 at IUPUI) and Linear Algebra (equivalent to Math M35100 at IUPUI). The verbal, quantitative, and analytical portions of the Graduate Record Examination (GRE) are required, and applicants are urged to complete the examination by December of the year before admission is desired. Requests to substitute GMAT scores for GRE scores will be considered. Three letters of recommendation are required. Students with English as a second language who have not attended school in the U.S. are required to take either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). For IELTS, applicants must take the academic reading and writing modules. A minimum TOEFL score of at least 88 is required though successful applicants generally score at least 100. The minimum acceptable IELTS score is 6.5 though successful applicants generally score at least 7.5.

### Fields of Study

Fields of study currently available within the department are health economics and nonprofit/philanthropic economics. Students must take this field as well as the course sequence in econometrics.

### Course Requirements

A total of 90 credit hours, including the theory sequence E520, E521, E522, E611, E621, and the econometrics-statistics sequence E571, E573, E577, E578, E670, and E673. In addition, starting in their third year, students must formally enroll in a workshop course for a minimum of four semesters. Student may cease to register for the workshop seminar after four semesters if they have either accumulated the required 90 credits or defended their PhD thesis. There is a minimum requirement of 61.5 credit hours of course work, including standard Economics courses, Economics workshop courses, and



minor courses. The remaining courses will be taken as thesis credits.

### Minor

In addition to the formal coursework in Economics the prospective Ph.D. candidate must complete a structured minor in a related area. For those with a primary field in health economics, the minor will usually relate to the health and life sciences disciplines. A minor obtained in areas such as behavioral health sciences, biostatistics, environmental health sciences, epidemiology, or health policy and management would be appropriate, for example. The minor must be approved by the student's Advisor or the graduate director of the program. The minor must contain a minimum of three graduate level courses (9 credits) in the chosen area and it must comply with the minor requirements of the respective department/unit. Typically departments require 12 credit hours for a Ph.D. Minor. In cases where it is appropriate, an interdepartmental minor can be arranged with the consent of the DGS. When appropriate, a student may, with the consent of his/her advisor and/or the DGS, substitute a research tool skill of at least 9 credit hours for the Minor. These research tool skills credits will count toward the 90 credit requirement as long as the courses are approved for graduate credit.

### Grades

The student must receive at least a C (2.0) in each course and must average at least a B (3.0 on a 4.0 scale) for all courses taken.

### Faculty

#### Chairperson

Professor Steven Russell\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Professors

Subir K. Chakrabarti\*, Una O. Osili\*, Peter Coia Rangazas\*, Patrick M. Rooney\*, Anne B. Royalty\*, Steven Russell\*, Richard S. Steinberg\*, Joseph V. Terza\*, Mark O. Wilhelm\*

#### Associate Professors

Marc Bilodeau\*, Jaesoo Kim\*, Henry Y. Mak\*, Gwendolyn Morrison

#### Assistant Professors

Sumedha Gupta\*,

#### M.A. Admissions and Advising

Professor Peter Rangzas

#### Ph.D. Admissions and Advising

Professor Anne Royalty\*

### Courses

- **ECON-E 420 History of Economic Thought (3 cr.)** Examination of main theoretical developments since the beginning of the systematic study of

economics. Theoretical propositions and structures of the earlier writers will be interpreted and evaluated in terms of modern economic analysis.

- **ECON-E 504 Mathematics for Economists (1-3 cr.)** Topics in mathematics that are particularly useful in the application of microeconomic theory, macroeconomic theory, and econometrics. Topics covered include matrix algebra, comparative-static analysis, constrained optimization, difference equations in discrete time, game theory, and set theory as applied to general equilibrium analysis..
- **ECON-E 513 Special Topics in Economic History (3 cr.)** Explicit methodology and economic analysis applied to major issues in American and European economic history (not currently offered).
- **ECON-E 514 The Nonprofit Economy and Public Policy (3 cr.)** P: E201. The role of nonprofit organizations (universities, churches, hospitals, orchestras, charities, day care, research, nursing homes) in mixed economies. Public policy controversies such as regulation of fundraising, antitrust against universities, "unfair" competition with for-profit firms, and the tax treatment of donations. This course may not be taken for credit by anyone who has received credit in ECON E414.
- **ECON-E 515 Institutional Setting for Health Economics in the U.S. (1.5 cr.)** P: completed or concurrent with E521 and E571. Overview of the structure of the U.S. health care system including health care financing, health care delivery, and government programs. Private and public financing mechanisms as well as government regulation. Comparison of the U.S. system to the health care systems of other countries.
- **ECON-E 519 Regional Economics (3 cr.)** Not currently offered. Regional economics is the study of economic behavior in space. The course examines the internal and interregional determinants of growth and decline of a region from supply-and-demand perspectives. Public policies to influence these determinants are considered (not currently offered).
- **ECON-E 520 Optimization Theory in Economic Analysis (3 cr.)** P: Calculus and linear algebra. Introduction to concepts and techniques of optimization theory applied in modern micro and macroeconomics. Theory and application of Lagrange multipliers, comparative statics analysis, value functions and envelope theorems. Elements of dynamic programming and other methods of economics dynamics.
- **ECON-E 521 Theory of Prices and Markets I (3 cr.)** P: E520. Develops the methodology of economic analysis and teaches the tools and language of price theory. Fundamental elements of consumer theory, producer theory, and economics of uncertainty. Emphasis on comparative statics and the duality theory. Topics include welfare analysis, the theory of price indices, revealed preferences, the theory of derived demand, expected utility theory, attitudes toward risk, and various measures of riskiness.
- **ECON-E 522 Macroeconomic Theory I (3 cr.)** P: E504 (MA students only) or E520. Introductory course on macroeconomic dynamics; covers growth models and asset pricing theories,



endogenous growth theories, optimal growth problems, and competitive dynamic equilibrium models. Dynamic programming tools introduced as needed. All models are cast in a discrete time setup; presents deterministic and stochastic theories.

- **ECON-E 528 Economic Analysis of Health Care (3 cr.)**A graduate introduction to health economics. Applications of economic theory to problems in various areas in health care. Applications of econometric techniques to the same. Topics include how physicians, institutions, and consumers respond to economic incentives and what policies contribute maximally to efficiency and welfare (not currently offered).
- **ECON-E 541 Labor Market Analysis (3 cr.)**P: Consent of instructor (Indianapolis). Not currently offered. An analytical approach to the labor market. Theoretical underpinning and statistical testing of issues in demand and supply of labor, household decision making, human capital, contract theories, unionism, minimum wages, and discrimination (not currently offered).
- **ECON-E 545 Applied Labor Economics (3 cr.)**Not currently offered. Discussion of wage rates and working conditions, searches by workers or firms, investment training, quits and layoffs, shirking, discrimination, the division of household labor, retirement, and implicit contracts. The course also examines the impact of institutions such as unions and the government on the efficiency of the labor market (not currently offered).
- **ECON-E 551 Monetary Economics II (3 cr.)**Not currently offered. Introduces alternative models of monetary economies; covers topics in monetary economics such as money and growth and optimal money growth. The course takes a unified approach to macroeconomic policy, treating monetary and fiscal policy as jointly determining macroeconomic equilibria. May include discussion of empirical work on money (not currently offered).
- **ECON-E 568 Public Finance I (3 cr.)**P: E360, E470, E521, E522. Partial equilibrium, microeconomic analysis of how tax and subsidy policies affect various types of individual and firm behavior. Theoretical models are introduced to assess and develop quantitative studies of fiscal policy. Summaries of the empirical impact of policy will be formed for the purpose of becoming an "input" in the complete general equilibrium analysis conducted in E569 Public Finance II (not currently offered).
- **ECON-E 569 Public Finance II (3 cr.)**P: E568. Empirical examination of the general equilibrium effects of major tax/subsidy programs, such as personal income taxation, corporate profit taxation, income maintenance, Social Security, and government provision of education. In addition, proposed reforms to these programs will be analyzed using empirically based simulation models (not currently offered).
- **ECON-E 570 Fundamentals of Statistics and Econometrics (3 cr.)**P: E504. Mathematical overview of statistics and econometrics at graduate level. Topics covered include probability and probability distributions, sampling distributions, tests of hypotheses, estimation, simple regression, multiple regression, generalized linear model and its applications, simultaneous equation systems.
- **ECON-E 571 Econometrics 1 – Statistical Foundations (3 cr.)**P: Undergraduate courses in statistics and calculus. The probability bases for statistical estimation and testing are introduced in the context of issues, theories, and data found in economics. The Classical linear regression model is presented as the starting point for multivariate analyses in econometrics. Students work with various computer programs in and out of the scheduled class periods.
- **ECON-E 573 Econometrics II (3 cr.)**P: E571. Estimation and inference in linear regression model, basic asymptotic theory, heteroskedasticity, measurement error, generalized least squares, instrumental variable model, maximum likelihood estimation, generalized method of moments, qualitative response models.
- **ECON-E 574 Applied Econometrics and Forecasting (3 cr.)**P: E570. An overview of techniques employed in economic model building, estimation, and usage. Topics covered include single and multiple equation system estimation, limited dependent variable regression techniques, hypothesis testing, policy analysis, and forecasting. Various forecasting techniques are discussed, including smoothing decomposition methods and Box-Jenkins modeling. A number of projects are assigned throughout the semester to give the student hands-on experience with the different techniques.
- **ECON-E 577 Computer Methods and Data Analysis (3 cr.)**P: Introductory econometrics at the Masters (E570) or Ph.D. (E571) level that cover multiple regression. This is the first of a two-semester sequence in computer methods and data analysis. Teaches students to use large datasets in an econometric analysis to answer a research question, to program in Stata, and to organize a complicated data project. The course also will complete students' introduction to the Stata programming language. The course prepares students to carry out their own large-scale research project and/or efficiently work within an organization that uses large data files to achieve its objectives.
- **ECON-E 581 Topics in Applied Microeconomics I (3 cr.)**P: E521 and E570 or consent of instructor. This course is a graduate-level introduction to theoretical and empirical applications in two areas of microeconomics. We will demonstrate how economic concepts can be usefully applied to understanding problems in the subdiscipline under study and discuss and apply estimation techniques appropriate for problems in the area.
- **ECON-E 582 Topics in Applied Microeconomics II (3 cr.)**P: E521 and E570 or consent of instructor. This course is a second graduate-level introduction to theoretical and empirical applications in two areas of microeconomics. We will demonstrate how economic concepts can be usefully applied to understanding problems in the subdiscipline under study, and discuss and apply estimation techniques appropriate for problems in the area.

- **ECON-E 583 Topics in Applied Macroeconomics (3 cr.)**P: E522 and E570 or equivalents, or consent of instructor. This course is a graduate-level introduction to theoretical and empirical applications in two areas of macroeconomics. We will demonstrate how economic theories can be usefully applied to understanding problems in the subdiscipline under study and discuss and apply estimation and calibration techniques appropriate for problems in the area.
- **ECON-E 585 Industrial Organization and Control (3 cr.)**P: Consent of instructor (Indianapolis only). Analysis of interrelated structure, behavior, and performance in industrial markets and multi-market corporations; multidimensional nature of competitive processes. Public controls. Topics include patterns of oligopoly, vertical integration, entry barriers; "cartelized" coalescence, limit pricing, price discrimination, long-term contracts; capacity expansion and utilization, resource reallocation, and innovation (not currently offered).
- **ECON-E 600 Readings in Economics (1-6 cr.)**Individual readings and research.
- **ECON-E 611 Information Economics and Theories of Incentives and Contracts (3 cr.)**P: E521. The course covers topics in the theories of incentives and contracts that study situations in which there are explicit or implicit contractual obligations. It explores the role and influence of asymmetric information in determining outcomes with special emphases on moral hazard and adverse selection.
- **ECON-E 621 Theory of Prices and Markets 2 (3 cr.)**P: E520. Analysis of equilibrium, first- and second-order conditions; statistical derivation of demand and cost curves; activity analysis; general equilibrium; welfare economics; microeconomics of capital theory; pure oligopoly and game theory.
- **ECON-E 643 Health Economics I (3 cr.)**P: E515, E573, and E611. Production of health, demand for health, determinants of health, health disparities, international comparisons, cost-effectiveness and valuation.
- **ECON-E 644 Health Economics 2 (3 cr.)**P: Students must have completed the core economics theory courses including E521, E611, and E621, the first year core courses in Econometrics (E571 and E573) as well as E515: Health Institutions. Students with prior knowledge of U.S. health care institutions should consult with the instructor, prior to registration, about taking E515 concurrently. This course builds on the core theory, econometrics and health economics courses to provide an in depth knowledge of key issues related to markets and market failure in the supply of health care services, the impact of insurance on the demand for health care services, response of consumers to insurers' financial incentives, the role of government in health care markets, the labor market behavior of physicians; hospital ownership, competition, and reimbursement. In addition to introducing theoretical concepts the course aims at familiarizing students to current research on these topics by means of review of seminal journal articles. It will provide a foundation for understanding key dimensions in health care markets, appreciate

contributions of past literature on the subject and initiate constructive critical thought on the existing work and future directions of research in the field.

- **ECON-E 670 Econometrics 3-System and Panel Econometrics Models (3 cr.)**P: Equivalent of Econ-E571, E573 or above is required. Students should be familiar with basic concepts of econometrics including probability theory, linear algebra, OLS, GLS and maximum likelihood. Students who wish to submit an empirical paper need some knowledge of a statistical software or a programming language in order to prepare the required empirical paper. Simultaneous equation models (2SLS, 3SLS), time series concepts for panel data analysis and serial correlation, pooled cross-section methods, generalized method of moments, nonlinear panel data models (ML and GMM).
- **ECON-E 673 Econometrics 4-Microeconometrics (3 cr.)**P: ECON-E670, E571, and E573. This course will cover microeconomic data and causal/noncausal modeling; endogeneity; survey sampling; biases due to sampling design; sample selection and self-selection; extensions of linear regression; selected semiparametric methods (fat tails; instrumental variables; quantile regression); discrete choice and limited dependent variable models; linear and nonlinear panel models.
- **ECON-E 808 Thesis (M.A.) (arr cr.)**\*\*This course is eligible for a deferred grade.
- **ECON-E 809 Thesis (Ph.D) (arr cr.)**\*\*This course is eligible for a deferred grade.

## English

### School of Liberal Arts

Departmental E-mail: [english@iupui.edu](mailto:english@iupui.edu)

Departmental URL: <http://liberalarts.iupui.edu/english/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Arts in English, Master of Arts in Teaching English as a Second Language, Certificate in Teaching English as a Second Language, Certificate in Professional Editing, Certificate in Teaching Literature, Certificate in Teaching Writing

#### Program Information

IUPUI's graduate English program has been designed to prepare students for careers in the analysis and production of "texts." To this end, the program covers issues and skills in reading and writing, in the richest sense of these words, to prepare students to address these issues and to teach these skills. Graduates of the program should be prepared for such careers as teaching writing and literature; teaching English as a second language; and writing for business, government, and other professions.

In contrast to traditional M.A. programs, which place heavy emphasis on literary history, the IUPUI program focuses on the application of English studies to contemporary situations and problems. Because of IUPUI's urban, nonresidential setting, its English graduate program will strive, in its curriculum and scheduling, to meet the special needs of part-time, nonresidential students.

### Special Departmental Requirements

(See also general University Graduate School requirements.)

### Master of Arts in English Admission Requirements

1. Applicants should have a bachelor's degree from an accredited college or university, with a minimum grade point average of 3.0 on a 4.0 grading scale in the student's undergraduate major, documented by an official transcript. Applicants are normally expected to have been English majors, but admission will be considered also for those who otherwise demonstrate the competency necessary for successful graduate work in English.
2. Applicants must have taken the Graduate Record Examination (GRE) General Test; preference is given to those who have earned a score of 160 on the Verbal exam. Applicants seeking financial support are encouraged to take the examination by December of the year prior to admission.
3. Applicants must submit three letters of recommendation.
4. Applicants must submit a 500-750 word personal statement.

### Foreign Language Requirements

None, but M.A. students continuing on for the Ph.D. are encouraged to validate their reading proficiency in a foreign language according to University Graduate School standards.

### Grades

M.A. students must maintain a 3.0 (B) grade point average.

### Course Requirements

Students may select one of the two options outlined below after consulting with the Director of Graduate Studies (DGS) in English and/or other faculty advisors in English. Students will then submit a brief written statement to the DGS that presents a rationale for their choice. As can be seen in the following outline of the two alternative courses of study, students who choose not to write a thesis will be required to take eight additional credit hours of course work, for a total of 40 credit hours.

Core Courses:

At the beginning of your graduate career, you will take two core courses that provide an introduction to major areas in the discipline of English:

- Language: G500, Introduction to the English Language, 4 credits
- Literature: L506, Introductory Methods of Criticism/Research, 4 credits

- Writing: W509, Introduction to Writing and Literacy Studies, 4 credits

Thesis Option:

- Required Courses: Students must take two of the program's three core courses for a total of 8 credit hours.
- Electives: Students choose six courses in consultation with a faculty advisor for a total of 24 credit hours. These 24 hours may include a third core course and up to 8 credit hours of Internship.
- Required: MA thesis. 4 credit hours.
- Total: 36 credit hours

Non-thesis Option:

- Required Courses: Students must take two of the program's three core courses for a total of 8 credit hours
- Electives: Students choose eight courses in consultation with a faculty advisor for a total of 32 credit hours. These 32 credit hours may include a third core course and up to 8 credit hours of Internship.
- Total: 40 credit hours

The three core courses, which carry 4 credit hours each, provide an introduction to three major areas in the discipline of English: language (G500 Introduction to the English Language), writing (W509 Introduction to Writing and Literacy Studies), and literature (L506 Introduction to Methods of Criticism and Research). All students are required to take two of the three core courses, preferably at the beginning of the graduate program.

### Master of Arts in Teaching Speakers of Other Languages

#### Admission Requirements

1. Applicants should have a bachelor's degree from an accredited college or university, with a minimum grade point average of 3.0 on a 4.0 grading scale in the student's undergraduate major, documented by an official transcript. Applicants are normally expected to have been English majors, but admission will be considered also for those who otherwise demonstrate the competency necessary for successful graduate work in English.
2. Applicants must have taken the Graduate Record Examination (GRE) General Test; preference is given to those who have earned a score of 160 on the Verbal exam. Applicants seeking financial support are encouraged to take the examination by December of the year prior to admission.
3. Applicants must submit three letters of recommendation.
4. Applicants must submit a 500-750 word **personal statement**.

### Foreign Language Requirements

TOEFL or IELTS official scores are required for *nonnative speaking applicants only* and must be reported directly to IUPUI. *Test scores are not required if the applicant has earned (or will earn) a bachelor's or master's degree from a country where English is the official language (please refer to the Office of International Affairs website.)* The department will only consider applications once the

required minimum score is met and does not offer admission to applicants not meeting the required minimum scores.

- The IUPUI *Institution Code* for ETS is: #1325
- Recommended minimum scores for applicants who are nonnative speakers of English: **100** TOEFL iBT; **7.0** IELTS.

### Grades

M.A. students must maintain a 3.0 (B) grade point average.

### Course Requirements

The 31-credit hour M.A. in TESOL is comprised of core courses, elective courses, and the completion of either a thesis or internship. Please click on the tabs above for more information.

#### Core Courses (16 credit hours/5 courses)

At the beginning of your graduate career, you will take two core courses that provide an introduction to major areas in the discipline of English:

- ENG-G 500 Introduction to the English Language (4cr)
- ENG-Z 520 Second Language Development (3cr)
- ENG-Z 523 TESOL Methods (3cr)
- ENG-Z 541 English for Specific Purposes (ESP) and Materials Development (3cr)
- ENG-Z 545 TESOL Practicum (3cr)

#### Elective Courses (At least 15 credit hours/5 courses)

- ENG-G 625 Discourse Analysis and Introduction to Research (4cr)
- ENG-G 652 Sociolinguistics (4cr)
- ENG-Z 536 Pedagogical Grammar (3cr)
- ENG-Z 570 Second Language Writing (3cr)
- ENG-Z 575 Second Language Learning and Technology (3cr)
- ENG-Z 598 TESOL Internship (3cr)
- ENG-Z 600 Seminar in TESOL (variable topics) (3cr)
- ENG-Z 690 Advanced Readings in TESOL (1-4cr)
- ENG-Z 699 M.A. Thesis – TESOL (3cr)
- Other graduate courses in literature, writing, and literacy, or related fields as approved by the director. No more than six credits may be transferred from or taken outside the department.

Students should select one of two program options:

### Thesis Option

Required Courses: Students must take the *five core courses* for a total of 16 credit hours, as well as ENG-Z 690 Advanced Reading in TESOL (1-4 credits) and ENG-Z 699 M.A. Thesis (3 credits)

- Electives: Students choose at least three courses (at least 8-11 credits)
- Total: 31 credit hours

### Internship Option

Required Courses: Students must take the *five core courses* for a total of 16 credit hours, as well as ENG-Z 598 TESOL Internship (3 credits)

- Electives: Students choose at least four courses (at least 12 credits)
- Total: 31 credit hours

### Certificate in Teaching English to Speakers of Others Languages (TESOL)

The Certificate in Teaching English to Speakers of Other Languages is a six-course, 21-credit program. The five required courses include ENG G-500, G-541, and LING L-535, as well as LING L-532 and L-534. The elective course can be chosen from ENG G-625, G-652, and LING T-600; other English courses and courses in other departments relevant to TESOL are acceptable with approval from the director. An emphasis in English for Specific Purposes (ESP) can be earned by taking LING T-600 as the elective course and completing the practicum in an ESP setting. For more information about the certificate, contact Professor Julie Belz ([jbelz@iupui.edu](mailto:jbelz@iupui.edu)) or visit the program's web site at <http://liberalarts.iupui.edu/english/pages/graduate-program-folder/tesol-certificate.php>.

### Certificate in Professional Editing

See the separate entry for "Certificate in Professional Editing" in the University Graduate Bulletin for more information, or visit the program's web site at <http://www.iupui.edu/~iat/iat/professional-editing/>

### Certificate in Teaching Literature

This 20-hour graduate Certificate in Teaching Literature is a structured program designed for licensed middle school and high school teachers, current M.A. students, and university and college faculty in literature and other subject areas who wish to enhance their professional careers. The certificate offers students an opportunity to explore the theories and best practices that promote learning and strengthen professional mentorship of area teachers. This certificate requires L-503, L-506, and L-508 as well as two other graduate literature courses chosen by the student and approved by the Program Director.

Credits earned in the certificate can be applied to an M.A. in English upon acceptance into that degree program. For more information about the certificate, contact Professor Jane Schultz ([jschultz@iupui.edu](mailto:jschultz@iupui.edu)) or visit the program's web site at <http://liberalarts.iupui.edu/english/pages/graduate-program-folder/teaching-literature.php>

### Certificate in Teaching Writing

The Graduate Certificate in Teaching Writing is a 20-hour program of study for certified middle school or high school teachers, part-time university writing faculty and lecturers in other disciplines, and M.A. students interested in earning a certificate in writing to enhance their professional teaching careers. Major topics include theories and methods of teaching writing; understanding linguistic diversity; uses of technology in writing; social aspects of writing development; non-fiction writing; writing assessment; and teacher research. The Certificate requires completion of five graduate courses consisting of



one core course (ENG-W 509) and four elective courses as approved by the Program Director.

Graduate credits earned can be applied toward the M.A. in English upon acceptance into the M.A. For more information about the certificate, contact Professor Kim Brian Lovejoy ([klovejoy@iupui.edu](mailto:klovejoy@iupui.edu)) or visit the program's web site at <http://liberalarts.iupui.edu/english/pages/graduate-program-folder/teaching-writing-certificate.php>

## Faculty

### Chairperson

Professor Robert Rebein

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Dennis P. Bingham\*, Terri A. Bourus, Ulla M. Connor\*, Jonathan Robert Eller\*, Karen Kovacic, Missy Dehn Kubitschek\*, Kim Brian Lovejoy, Robert Rebein, Jane E. Schultz\*, Thomas A. Upton

### Associate Professors

Julie Belz, Andy Buchenot, Frederick J. DiCamilla, Mitchell L.H. Douglas, Estela S. Ene, Stephen L. Fox, Ronda C. Henry Anthony, David E. Hoegberg, Thomas Fletcher Marvin, Megan Musgrave, Susan C. Shepherd, Jennifer Thorington Springer

### Assistant Professors

Kyle Minor

### Emeritus Faculty

John D. Barlow, Barbara Cambridge, Edwin F. Casebeer, Kenneth W. Davis, Sharon J. Hamilton, Karen R. Johnson, William M. Plater\*, Melvin L. Plotinsky\*, Helen J. Schwartz, Richard C. Turner, Harriet Wilkins

### Graduate Studies Office

For graduate student information and advising, call (317) 274-2258, Cavanaugh Hall 503U.

## Courses

### Thesis Course

- **ENG-L 699 M.A. Thesis (arr. cr.)**

### Linguistics Courses

- **ENG-G 500 Introduction to the English Language (4 cr.)** An introduction to the English language: its nature, structure, and development.
- **ENG-G 541 Materials Preparation for ESL Instruction (4 cr.)** Students will learn about materials preparation, syllabus design, and test preparation by applying a variety of theories to books and other ESL (English as a Second-language) teaching devices (e.g., tapes, videotapes, software programs) to evaluate their usefulness and will learn to evaluate ESL materials for adequateness.
- **ENG-G 625 Introduction to Text Linguistics/ Discourse Analysis (4 cr.)** This course introduces

students to current approaches to text and discourse coherence, including recent theories of cognitive and interactional text modeling.

- **ENG-G 652 English Language Sociolinguistics (4 cr.)** A survey course in American and British sociolinguistics, this course investigates the theoretical bases, the major works, and the methodological approaches of current sociolinguistics.
- **LING-L 532 Second-Language Acquisition (3 cr.)** An introduction to a broad range of issues in the field of second-language acquisition, providing the student with an overview of the most important approaches to the fundamental question of how people learn a second language. Provides students with basic knowledge of theories of second-language acquisition and an understanding of how theoretical perspectives inform practical application.
- **LING-L 534 Linguistics Resources and TESOL (3 cr.)** The course examines recent theories of teaching English as a second or foreign language. Students will get a chance to examine theories and methods and develop knowledge of linguistic resources available to new and/or practicing teachers.
- **LING-T 600 Topics in TESOL and Applied Linguistics (3 cr.)** May vary with topic. Intensive study and analysis of selected issues and problems in TESOL and Applied Linguistics. Topics in this course are of particular interest to the second language practitioner.
- **LING-T 690 Advanced Readings in TESOL and Applied Linguistics (1-4 cr.)**

### Literature Courses

- **ENG-L 501 Professional Scholarship in Literature (4 cr.)** Applied research methods. Surveys forensic methods of discovering textual variations in successive editions of famous works of literature, framed within a broader survey of literary history and the evolution of Western literary genres. Provides a firm grounding in the terminology of literary research and an understanding of the way that literary scholars work with secondary materials to discover hidden truths (and often to expose mistakes) about texts and authors.
- **ENG-L 503 Teaching of Literature in College (4 cr.)** This course introduces graduate students to the practical and theoretical issues involved in teaching literature including how to set teaching objectives, organize a course and construct a syllabus. Several different approaches to teaching literature, including lecture, discussion, workshop, and online instruction will be explored.
- **ENG-L 506 Introduction to Methods of Criticism/ Research (4 cr.)** The conditions and assumptions of studying English, with emphasis on criticism and research on a culturally and historically diverse range of texts.
- **ENG-L 508 Practicum on Teaching Literature in College (4 cr.)** P: L503 or consent of instructor.



Topics include syllabus construction, lecture and discussion techniques, use and evaluation of written work. Offered in two formats: as a practicum in course and syllabus design for a future undergraduate course; or as a practicum for AIs running concurrently with the related undergraduate course.

- **ENG-L 590 Internship in English (4 cr.)** A supervised internship in the uses of language in the workplace. Each intern will be assigned a problem or task and will develop the methods for solving or completing it. Each intern will complete a portfolio of workplace writing and self-evaluation.
- **ENG-L 606 Topics in African American Literature (4 cr.)** Focuses on a particular genre, time period, or theme of African American literature. Examples: twentieth-century African American women's novels, black male identity in literature, kinship in African American literature, African American autobiography. May be repeated twice for credit with different focuses.
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### Writing Courses

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- **ENG-W 697 Independent Study in Writing (1-4 cr.)**

## Environmental Health Science

**Fairbanks School of Public Health**

Departmental URL: <https://fsph.iupui.edu/academics/doctoral/minors/ehs.html>

**Departmental Email:** [fsphinfo@iu.edu](mailto:fsphinfo@iu.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Doctoral Minor in Environmental Health Science

The IU Richard M. Fairbanks School of Public Health offers a PhD minor in Environmental Health Science that provides students with a foundation in the identification and control of environmental hazards that can adversely affect human health and environmental quality. People who possess these specialized skills are in high demand due to the ever-growing focus on how the natural and built environments impact population health.

The doctoral minor in Environmental Health Science is comprised of a minimum of 12 credits and serves as a useful complement to many major areas of study. You will learn both theoretical concepts of environmental public health and how to apply these concepts in assessing environmental health risks, collecting and analyzing data, and developing policy. Because you can choose three of the courses from a list of options, you can easily customize this minor to your unique interests and needs. This minor is ideal for students from many schools, including the IU schools of Nursing, Medicine, Science, Business, and Public and Environmental Affairs.

Students who wish to obtain a doctoral minor from the IU Richard M. Fairbanks School of Public Health must earn a grade of "B" or better in the coursework for the minor. Courses in which a grade of "B-" or lower is earned will not apply toward completion of the minor. Faculty in the department of Environmental Health Science will serve as advisors for students choosing this minor.

### Environmental Health Science Minor Curriculum

#### Required Course

- PBHL A519 Environmental Science for Public Health (3 credits)

#### Plus three courses from the following list:

- PBHL A661 Environmental Toxicology (3 credits)
- PBHL A662 Environmental Health Risk Assessment in Public Health (3 credits)
- PBHL A617 Environmental Epidemiology of Epidemiology (3 credits)
- PBHL A620 Environmental Health Policy Analysis (3 credits)
- PBHL A633 Occupational Health and Safety for Public Health Professionals (3 credits)
- PBHL A670 Water Quality Management (3 credits)
- PBHL A451 Air Pollution in the Community (3 credits)
- PBHL A640 Public Health Applications of GIS (3 credits)

Other courses may be taken if approved by the student's minor advisor. Students who have already completed any of the required courses as part of their MPH or PhD requirements may not apply those courses toward their minor in Environmental Health Science and must instead



work with their faculty advisor to identify alternate EHS courses.

The student's minor advisor will monitor satisfactory completion of the requirements for the doctoral minor in Environmental Health Science. Doctoral students must notify the Fairbanks School of Public Health before beginning their course of study for the minor.

## Epidemiology

### Department of Epidemiology

**Richard M. Fairbanks School of Public Health**

**School URL:** <https://fsph.iupui.edu/academics/doctoral/epidemiology/index.html>

**School E-mail:** [fsphinfo@iu.edu](mailto:fsphinfo@iu.edu)

### Curriculum

#### Degrees Offered

Doctor of Philosophy (Ph.D.) and doctoral minor in Epidemiology

#### Doctor of Philosophy

The PhD in Epidemiology program at the IU Richard M. Fairbanks School of Public Health is designed for advanced graduate students who want to study the distribution of health and illness in diverse populations, the occurrence of illness, and how to assess the determinants of health and disease risk in human populations. Our students are trained to become scientific leaders in academic, governmental agency, non-governmental agency, and industry settings. Graduates are trained to develop and conduct epidemiologic research and to translate their findings to a diverse audience, including the biomedical research community, public health practitioners, health policy makers, and clinicians in the health professions, as well as to the general public.

The 90-credit hour Epidemiology PhD program can be completed on a part-time or full-time basis. Scholarships, traineeships, and pre-doctoral fellowships are available to full-time students of outstanding merit. Our PhD program promotes educational and scientific development through research collaborations, public health partnerships, and a commitment to diversity.

PhD students will work one-on-one with individual faculty members and may pursue topics of interest, capitalizing on faculty members' research expertise and on-going projects. Key areas of research available to epidemiology doctoral students on the IUPUI campus include:

- Cancer Epidemiology and Cancer Prevention
- Cardiovascular Disease Epidemiology
- Clinical Epidemiology
- Metabolic Disease Epidemiology
- Infectious Disease Epidemiology
- Injury Epidemiology
- Genetic and Molecular Epidemiology
- Nutritional Epidemiology
- Pharmacoepidemiology
- Public Health Informatics

Extensive research opportunities are available to our doctoral students across the IUPUI academic health sciences campus. There is no other location in Indiana

that offers such a diverse and rich environment for epidemiologic research.

## Admission Process and Requirements

Admission into the Epidemiology PhD Program is based on completion of a baccalaureate degree, although it is anticipated that many applicants will have completed a post baccalaureate degree in public health or other health related discipline.

### Fall Semester Application Deadline: December 15

All required application documents must be submitted by the Epidemiology PhD program deadline, with the exception of recommendation letters, which may be submitted up to two weeks past the deadline.

### Online Application Steps

You may apply to our Epidemiology PhD program [online via SOPHAS](#), the centralized Schools of Public Health Application Service.

Remember to designate the IU Richard M. Fairbanks School of Public Health as one of your school choices, along with your desired program.

The application deadline for Fall admission is **December 15**. All required application documents must be submitted no later than November 15 and completed by the program deadline.

We'll notify you by e-mail once your application has been received. If you have questions about the application process, contact student services (317) 274-2000.

### Supporting Documentation

In addition to completing the SOPHAS application, you are also required to submit the following supporting documentation directly to SOPHAS:

- **Statement of Purpose and Objectives:** Provide an essay of approximately 750 words describing your past education, experience, and current professional career objectives. You are encouraged to comment on any or all of the following: plans you have to use your education and training; the needs and/or challenges you perceive as important in your field of study; and, any personal qualities, characteristics, and skills you believe will enable you to be successful in your chosen field of study.
- **Résumé or Curriculum Vitae (C.V.)**
- **Official post-secondary transcripts** from all U.S. institutions attended (must be sent directly from the institutions to SOPHAS). This includes previous study at Indiana University. This includes previous study at Indiana University.
- It is strongly recommended that all transcripts be submitted no later than November 15 to allow SOPHAS adequate time to verify transcripts. Please note that it can take up to four weeks for transcripts to be verified.
- **World Education Services (WES) ICAP** course-by-course evaluation for all post-secondary foreign institutions attended. Please Note: U.S. applicants who studied at foreign institutions as part of a study abroad experience at their U.S. college or university,



do not need to provide a WES evaluation of their study abroad coursework.

- **Three letters of recommendation** from persons qualified to assess your academic work; clinical, public health, or professional experiences; or, leadership potential in public health. These letters should be from professional sources that can provide an unbiased, current and critical assessment of your abilities, skills, strengths and weaknesses related to successfully completing a doctoral program.
- **Sample of scholarly writing** – Applicants must submit an electronic copy of a course paper or published article in which the applicant is the sole author. This document can be uploaded to your SOPHAS application.
- **GRE test scores** - GRE or other graduate entrance exam scores are required for all applicants. In addition to the GRE, the Epidemiology PhD program also accepts scores from the MCAT, LSAT, GMAT, DAT. However, testing services other than the ETS (GRE) may not submit scores directly to the SOPHAS system. If your testing service does not submit scores to SOPHAS, you can have them sent directly to IUPUI.
- **Test Score Waiver** - If you have a graduate or professional degree from an accredited U.S. institution, you may request a waiver for the test score requirement.

**Please Note:** If you plan to attend the Epidemiology PhD program as a full-time funded student, you are strongly encouraged to submit GRE scores with your application, since some funding sources require current GRE scores (less than 5 years old) for students to be eligible.

### On-site Interview Steps

**In-person interview:** Applicants will be invited to participate in an in-person interview with several members of the Admission Committee. Alternative arrangements can be made for applicants unable to be interviewed onsite.

**Completion of an on-site essay:** Applicants participating in the interview process may be asked to write a short essay on a specific topic assigned to them using Microsoft Word. The purpose of this step is to allow the Admissions Committee to assess the applicant's English writing skills.

### Review of Applications

Completed applications will be carefully reviewed by the Epidemiology PhD Admissions Committee after the program deadline. Applicants are notified of their admission status in late March. The Admissions Committee will determine each applicant's acceptance or non-acceptance to the Epidemiology PhD program by using the following selection criteria:

- *Scientific Leadership Potential:* Assessed by the applicant's resume / curriculum vita, personal statement, and personal interview.
- *Ability to Engage in Advanced Graduate Work:* Assessed by the applicant's personal interview, evaluation of letters of recommendation, overall grade point average in prior graduate work, and scores from the GRE or other graduate entrance exams.

- *Learning Goals and Objectives:* Assessed by the applicant's personal statement and personal interview.

### Course Requirements

To complete this degree, you will take a combination of required Epidemiology Core courses, Methods courses, Elective courses, a Doctoral Minor, Doctoral Research Seminars, and guided Dissertation Research that together total 90 credits.

If applicants to the Epidemiology PhD program have recently completed an MPH program in epidemiology or a related area and therefore already have solid academic preparation in epidemiology and biostatistics, they may not need to take select foundation courses, which would reduce their required curriculum credits. Individuals accepted into the program who do not have the foundation courses in epidemiology and biostatistics will be required to take the full 90-credit curriculum:

### Required Core Courses

Take all 10 courses for a total of 30 credits

- PBHL B552 Fundamentals of Data Management (using SAS) (3 credits)
- PBHL B586 Technical Reporting and Scientific Writing (1 credits)
- PBHL B571 Biostat Method I: Linear Model in Public Health (4 credits)
- PBHL B572 Biostat Method II: Categorical Data Analysis (4 credits)
- PBHL E517 Fundamentals of Epidemiology (3 credits)
- PBHL E601 Advanced Epidemiology (3 credits)
- PBHL E606 Grant Writing for Public Health (3 credits)
- PBHL E629 Introduction to Genetic Epidemiology (3 credits)
- PBHL E635 Foundations of Public Health Informatics (3 credits)
- PBHL E715 Design and Implementation of Observational Studies (3 credits)

### Method Courses

Choose 3 courses for a total of 9 credits

- PBHL B573 Biostat Method III: Applied Survival Data Analysis (4 credits)
- PBHL B574 Biostat Method IV: Applied Longitudinal Data Analysis (3 credits)
- PBHL B582 Introduction to Clinical Trials (3 credits)
- PBHL B583 Applied Multivariate Analysis in Public Health (3 credits)
- PBHL E645 Information Exchange for Population Health (1 credit)
- PBHL E563 Systematic Review and Meta-analysis (3 credits)
- MGEN G788 (INFO I590) Intro to the Next Generation Sequencing Technology (3 credits)
- INFO B636 Next Generation Geonomic Data Analysis (3 credits)

\*Students may take methods and substantive electives offered by other IUPUI departments with advisor approval.

## Electives

Choose 5 courses for a total of 15 credits

- PBHL E609 Infectious Disease Epidemiology (3 credits)
- PBHL E610 Chronic Disease Epidemiology (3 credits)
- PBHL A617 Environmental Epidemiology (3 credits)
- PBHL E618 Cancer Epidemiology (3 credits)
- PBHL E675 Fundamentals of Injury Epidemiology (3 credits)
- PBHL E750 Doctoral Topics in Epidemiology (variable 1-3 credits)
- PBHL E751 Doctoral Readings in Epidemiology (variable 1-3 credits)
- PBHL E752 Doctoral Level Directed Research (3 credits)
- PBHL E765 Nutritional Epidemiology (3 credits)
- PBHL E770 Occupational Epidemiology (3 credits)
- PBHL E780 Pharmaco-Epidemiology (3 credits)
- SOC R585 Social Aspects of Mental Health & Illness (3 credits)

\*Students may take methods and substantive electives offered by other IUPUI departments with advisor approval.

## Minor Area

Students must complete a PhD minor in an area related to a health and life science. The minor in most cases is comprised of four graduate level courses (12 credit hours) in the chosen area and must comply with the minor requirements of the respective department/unit.

## Doctoral Research Seminars

Students will enroll in three doctoral research seminars. Each seminar is one credit, for a total of three credits. (PBHL E775)

## Dissertation

The remaining 21 hours will be guided research dissertation hours. (PBHL E800)

## Other Degree Requirements for the PhD in Epidemiology

### Public Health Coursework

Epidemiology students without a graduate degree, certificate or coursework in public health will be required to complete on-line introductory modules on Environmental Health, Health Policy and Management, and Social and Behavioral Science to ensure that they have basic competencies in all five core public health areas. This is a requirement of the Council on Education in Public Health (CEPH), the school's accrediting body.

### PhD Advisory Committee

The department of Epidemiology will set up an advisory committee for the student, typically in the first year after admission to the PhD program. The advisory committee usually includes at least two epidemiologists and one or two faculty members from another discipline. The advisory committee will approve the student's program of study and counsel the student until he or she passes the qualifying examination. Each PhD student will also be assigned

to an academic advisor from one of the full-time faculty members in the department of Epidemiology.

## Minor Area

The student will select a minor from an academic unit other than the department of Epidemiology. The PhD minor must be approved by the student's advisory committee, and comply with requirements of the respective minor department or program. Examples of minors include: biostatistics, genetics, pharmacology, toxicology, health economics, environmental health, and health informatics.

## Qualifying Examinations

The qualifying examination will be based upon the student's PhD coursework and will be taken after all courses have been completed. Students who fail the qualifying examination are normally allowed to retake it only once. The qualifying exam will be a written exam.

Students who have passed the qualifying examination must enroll each semester (excluding summer sessions) for dissertation credits. Once such students have accumulated 90 credit hours in completed course work and dissertation credits, they must enroll for 6 hours of graduate credit (GRAD-G901) each semester until the degree is completed. The fee for this course is \$150. Students are permitted to enroll in G901 for a maximum of six semesters.

The Department of Epidemiology will monitor the student's progress toward the PhD degree and will make recommendations to the University Graduate School regarding the nomination to candidacy, the appointment of a research committee, the defense of the dissertation, and the conferring of the PhD degree.

## Dissertation

The dissertation will be written on an original topic of research and presented as one of the final requirements for the PhD degree. The student's dissertation research committee will be comprised of members of the graduate faculty. The chair of the dissertation research committee must be a regular faculty member in the department of Epidemiology and a full member of the Graduate Faculty. The student will submit to the IUPUI Graduate Office, acting for the University Graduate School, a two-page prospectus of the dissertation research and the membership of the research committee at least six months before the defense of the dissertation for their approval.

After the committee has reviewed the dissertation, the decision to schedule the defense will be made. The student will then present and defend the dissertation orally in a public forum before the committee. Following the dissertation defense, all deficiencies must be adequately addressed to obtain approval by the dissertation research committee.

## Doctoral Minor in Epidemiology

Departmental URL: <https://fsph.iupui.edu/academics/doctoral/minors/index.html>

The IU Richard M. Fairbanks School of Public Health offers a PhD minor in Epidemiology that provides students with a foundation in the concepts, principles and practice of epidemiology. People who possess these specialized

skills are in high demand because their enhanced analytical and data management skills are desirable for many doctoral-level research projects.

The doctoral minor in Epidemiology is a rigorous, highly focused 12-credit hour minor that serves as a useful complement to many major areas of study. You will learn both theoretical concepts of epidemiology and how to apply these concepts. By completing this minor, you will be able to:

- Use epidemiology methods to collect data and to study, analyze, and report the patterns of disease in human populations for diverse audiences
- Use biostatistics to analyze and report public health data
- Understand and apply descriptive epidemiology to assess health status and the burden of disease in populations
- Understand, apply, and interpret epidemiologic research methods and findings to the practice of public health
- Demonstrate the ability to identify and use existing sources of epidemiologic data at the local, state, national, and international level
- Understand the key components of public health surveillance and public health screening programs
- Develop written and oral presentations based on epidemiologic analysis for both public health professionals and lay audiences
- Demonstrate a basic level of SAS programming for data set creation, data management, and data analysis

Because you can choose two of the courses from a list of options, you can easily customize this minor to your unique interests and needs. This minor is ideal for students from many schools, including the IU schools of Nursing, Dentistry, Medicine, Physical Education and Recreation, Health Rehabilitative Sciences, Law, and Public and Environmental Affairs.

Students who wish to obtain a doctoral minor from the IU Richard M. Fairbanks School of Public Health must earn a grade of "B" or better in the coursework for the minor. Courses in which a grade of "B-" or lower is earned will not apply toward completion of the minor. Faculty in the department of Epidemiology will serve as advisors for students choosing this minor.

#### Required Courses

- E517 Fundamentals of Epidemiology (3 credits)
- E601 Advanced Epidemiology (3 credits)

#### Plus choose two courses from the following list:

- E609 Infectious Disease Epidemiology (3 credits)
- E563 Systematic Review and Meta-analysis (3 credits)
- E610 Chronic Disease Epidemiology (3 credits) (Note: Effective fall 2019 new title: Global Chronic Disease Epidemiology)
- E618 Cancer Epidemiology (3 credits) (Note: Effective spring 2019 new title: Global Cancer Epidemiology)

- E629 Introduction to Genetic Epidemiology (3 credits)
- E635 Foundations of Public Health Informatics (3 credits)
- E675 Fundamentals of Injury Epidemiology (3 credits)
- E715 Design & Implementation of Observational Studies (3 credits)
- E765 Nutritional Epidemiology (3 credits)
- E780 Pharmaco-epidemiology (3 credits)

Other courses may be taken if approved by the student's minor advisor. Students who have already completed any of the required courses as part of their MPH or PhD requirements may not apply those courses toward their minor in Epidemiology and must instead work with their faculty advisor to identify alternate Epidemiology courses.

The student's minor advisor will monitor satisfactory completion of the requirements for the doctoral minor in Epidemiology. Doctoral students must notify the Fairbanks School of Public Health before beginning their course of study for the minor.

#### Faculty

**Epidemiology Doctoral Program Director:** Yiqing Song, MD, ScD

[Epidemiology Faculty Directory](#)

#### Courses

- **PBHL-A 617 Environmental Epidemiology (3 cr.)** This course covers the practice of Environmental Epidemiology. Building on the skills learned during Introduction to Epidemiology and Biostatistics I, we will continue to study the types of observational studies used to assess the impact of environmental exposures on disease incidence and prevalence.
- **PBHL-B 552 Fundamentals of Data Management (using SAS) (3 cr.)** This course teaches concepts related to research data planning, collection, storage, processing, and dissemination. The curriculum includes theoretical guidelines and practical tools for conducting public health research. Hands-on training with real-world examples and problem-solving exercises in SAS will be used to ensure that students are comfortable with all concepts.
- **PBHL-B 586 Technical Reporting and Scientific Writing (1 cr.)** Biostatistics is an applied field that requires effective communication. This one credit hour course is designed to help students producing well-structured scientific reports. The course will focus on the basic principles of scientific composition. We will also discuss issues frequently encountered in the scientific publication and peer review process.
- **PBHL –B 571 Biostatistics Method I-Linear Regression Model (4 cr.)** P: PBHL –B 561 or equivalent. It course covers fundamental methods in Experiment Design, ANOVA, Analysis of Covariance, Simple and Multiple Linear Regressions with applications in biomedical study and public health. The focus of this course is to prepare students with solid skill in data analysis and

interpretation of analytic results for numerical outcomes. Extensive use of Statistical software SAS is anticipated.

- **PBHL –B 572: Biostatistics Method II-Categorical Data Analysis (4 cr.)** P: PBHL –B 571 or equivalent. This course covers applied statistical methods for the analysis of categorical data with special emphasis on data collected from epidemiologic studies and general biomedical studies in various designs such as prospective cohort and retrospective case-control designs. The focus of this course is to prepare students with solid skill in data analysis and interpretation of analytic results for binary, multilevel and count data. Extensive use of Statistical software SAS is anticipated.
- **PBHL-E 517 Fundamentals of Epidemiology (3 cr.)** This course will introduce students to basic epidemiologic concepts including determinants of health and patterns of disease in populations, population health descriptive techniques, use of health indicators and secondary data sources. Students will gain an understanding of the role of epidemiology in developing prevention strategies and policy. Among the topics to be covered are measures of mortality and morbidity, design and analysis of observational studies, community health assessment and program evaluation.
- **PBHL-E 563 Systematic Review and Meta-analysis (3 cr.)** **PBHL-E 670 Systematic Review and Meta-Analysis in Health Sciences (3 cr.)** P: E517 & B551 or B651. This course provides graduate students with an overview of fundamental concepts and methods of systematic review and meta-analysis in health sciences. Principles and methods in conducting a systematic review and meta-analysis are illustrated through case studies of public health and clinical medicine, with emphasis on training students' practical skills in the conduct of systematic reviews and meta-analyses in various public health and clinical settings.
- **PBHL-E 601 Advanced Epidemiology (3 cr.)** P: E517 and B551 (or concurrent enrollment). This course provides students with an in-depth understanding of advanced epidemiologic concepts introduced in other courses as well as a fundamental understanding of epidemiologic techniques not covered in other classes. Topics included will represent cutting edge techniques, philosophical issues and insights to appropriately conduct and interpret the findings of epidemiological studies.
- **PBHL-E 609 Infectious Disease Epidemiology (3 cr.)** P: E517. This course is designed to provide a basic overview of the infectious disease process, including disease agents, transmission routes, immunity and public health significance. The course introduces principles of infectious disease epidemiology, including outbreak investigation and surveillance, using case studies as examples. Concepts on globalization of disease, microbial ecology, and disease eradication also are discussed.
- **PBHL-E 610 Chronic Disease Epidemiology (3 cr.)** P: E517. This course examines chronic health conditions from an epidemiological perspective. Concepts include geographical distribution, risk factors, person-related determinants, time trends, indicators of control, measures of severity, surveillance measures, and outcome measures. Research methods, assessment strategies and screening tests will also be presented.
- **PBHL-E 618 Cancer Epidemiology (3 cr.)** P: E517. This course is designed to provide an overview of the epidemiology of common cancers, as well as methodological issues in etiologic research and cancer screening. Emphasis will be placed on risk factors that can be modified for cancer control and prevention.
- **PBHL-E 635 Foundations of Public Health Informatics (3 cr.)** This course will introduce the application of Informatics in the Public Health field. The course will include a brief review of core public health functions, describe the current policies defining the use of informatics in public health, and outline the history of the application of informatics principles in both public health and clinical health systems.
- **PBHL-E 645 Information Exchange for Population Health (3 cr.)** This course explores the electronic exchange of data, information and knowledge between clinical and public health organizations in support of population health. Students will examine the strategic, organizational, legal, technical, and socio-political aspects of clinical and public health information exchange in the United States and abroad.
- **PBHL-P 650 Readings in Public Health (1-4 cr.)** This course is designed to expose the student to different readings in public health. The course will allow the student to apply skills learned in the public health core courses by collecting data and applying techniques. The student will be required to read critically published papers and identify research topics.
- **PBHL-E 651 Public Health Surveillance (3 cr.)** This course will focus on the recognized value of Public Health Surveillance as well as the development and utility of Surveillance Systems. Included are the historical development of surveillance systems, data sources, informatics of surveillance, data management, and evaluation of surveillance systems. In addition, descriptive epidemiology techniques, identification of outbreaks and community needs. Trend analysis based on the data collected from the surveillance system will be covered, along with related ethical and legal issues. The course discusses how surveillance is conducted in low to middle income countries and the future of public health surveillance.
- **PBHL-B 653 Applied Multivariate Statistical Methods (3 cr.)** P: B 551 and B652. This applied course is designed specifically for graduate and professional studies with major in epidemiology. Course will focus on applications to real data which will be analyzed by the professor and the students using the SAS software. The course will cover the following classic multivariate techniques; canonical correlations, MANOVA, MANCOVA, discriminant analysis, principal components analysis, exploratory factor analysis, confirmatory factor analysis, and structural equation modeling.

- **PBHL-E 655 Historical Evolution of Epidemiology (3 cr.)** P: E517. The course will explore the historical developments and public health responses to human disease morbidity and mortality, and their importance and influence on the role of public health in modern society. Readings and discussion will examine in detail, the evolutionary change in the epidemiologic response of a variety of diseases of national and international importance.
- **PBHL-E 645 Information Exchange for Population Health (3 cr.)** This course explores the electronic exchange of data, information and knowledge between clinical and public health organizations in support of population health. Students will examine the strategic, organizational, legal, technical, and socio-political aspects of clinical and public health information exchange in the United States and abroad.
- **PBHL-E 675 Fundamentals of Injury Epidemiology (3 cr.)** P: E517 and B551. This course will introduce students to basic epidemiologic concepts of injury, both intentional and unintentional. We will discuss the burden of injury and its effect on public health, patterns of injury in populations, the use of descriptive techniques, and secondary data sources. Students will gain an understanding of the role of injury epidemiology in developing prevention strategies and policy. Among the topics to be covered are measures of mortality and morbidity, design and analysis of observational studies, community health assessment and program evaluation.
- **PBHL-E 715 Design and Implementation of Observational Studies (3 cr.)** P: E517 This course examines fundamental aspects of designing and implementing observational epidemiology studies. The focus is on developing strategies to increase the validity of the study results by using techniques to control for possible confounding factors and biases. Topics include sampling methods, sensitivity, data weighting, standardization, selection of cases and controls, matching, data collection and project management.
- **PBHL-E 750 Doctoral Topics in Public Health (1-3 cr.)** Courses offered under this course number would include PhD courses on topics expected to be offered only once, such as those taught by visiting faculty, and those that are newly developed and have not yet been assigned a specific course number. The course will focus on a specific topic or technique related to the field of Public Health. The material to be studied will be determined by the instructor with input from the PhD faculty.
- **PBHL-E 751 Doctoral Readings in Epidemiology (1-3 cr.)** This course is designed to expose a PhD student to published material on a specific topic or technique related to their field of study in Epidemiology. The material to be studied will be determined primarily by the PhD student under the direction of a faculty member with input from the student's advisor. The PhD student is expected to work closely with the faculty member to develop a strategy to identify the material to study, plan a time frame for completion of the study and to determine the nature of the study product. Generally the product will be a summary and interpretation of the material studied in a literature review format. The PhD student and faculty member will complete and sign a written agreement, which outlines the scope of work for the semester and will also be signed by the student's academic advisor.
- **PBHL-E 752 Doctoral Research in Epidemiology (1-3 cr.)** This course is designed to allow PhD students the opportunity to explore research questions by collecting data or using existing data related to their field of study in Epidemiology. The study topic will be determined primarily by the PhD student under the direction of a faculty member with input from the student's concentration advisor. The PhD student is expected to work closely with the faculty member to develop the study protocol, obtain IRB approval if necessary, obtain the data and collect the planned data analysis. The time frame for completion and the nature of the study product will be determined by the PhD student, faculty member and advisor. Generally the product will be a manuscript for submission to an appropriate journal. The PhD student and faculty member will complete a written agreement, which outlines the scope of work for the semester. The concentration advisor will also sign this agreement.
- **PBHL-E 765 Nutritional Epidemiology (3 cr.)** P: E517, B551. This course provides students with an overview of fundamental concepts and methods of nutritional epidemiology and the current state of knowledge on well-studied associations between diet and chronic diseases. Emphasis will be placed on the design, implementation, analysis, and interpretation of nutritional epidemiologic studies.
- **PBHL-E 775 Doctoral Research Seminar in Epidemiology (1 cr.)** This course is designed to expose PhD students to a wide range of specific research topics and issues in Public Health. The seminar topics will be chosen by the Director of the PhD program with input from other faculty members. The PhD students are expected to attend each seminar session, read assigned material, and participate in the seminar discussions. The PhD students may be asked to present their research projects during the seminar to obtain feedback and recommendations from the faculty and other students.
- **PBHL-E 780 Pharmacoepidemiology (3 cr.)** P: P517 or equivalent. This is an introductory pharmacoepidemiology course. Students will learn how principles of modern epidemiologic methods are used to evaluate the safety, effectiveness, and utilization patterns of medical products (drugs, vaccines, and medical devices) in human populations, with a focus on observational studies.
- **PBHL-E 800 Epidemiology Doctoral Dissertation Research (1-8 cr.)** The dissertation will be written on an original topic of epidemiology research and presented as one of the final requirements for the Ph.D. degree. The dissertation must be an original contribution to knowledge and of high scholarly merit.

**Faculty**  
Curriculum  
Faculty



Brian Krohn, Chair; Associate Professor

Amanda Cecil, Professor

Yao-Yi Fu, Associate Professor

Amy Johnson, Lecturer; Coordinator of Study Abroad

Soonhwan Lee, Associate Professor

Becky Liu-Lastres, Assistant Professor

Mona Mirehie, Assistant Professor

David Pierce, Associate Professor; Director of Sports Innovation Institute

Geoffre Sherman, Lecturer

## Event Tourism

### School of Health & Human Sciences

Departmental E-mail: [tcemdept@iupui.edu](mailto:tcemdept@iupui.edu)

Departmental URL: [shhs.iupui.edu](http://shhs.iupui.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

Curriculum

Faculty

### Degree Offered

Master of Science in Event Tourism - Thesis Option and Non-thesis Option

### Special Departmental Requirements

(See also general University Graduate School requirements.)

The M.S. in Event Tourism builds on the state's rich reputation around the attraction of events to stimulate economic development and image enhancement. Graduates will have a practical and theoretical understanding of the events and experiences created by expositions, fairs, sports, festivals, conferences, meetings, and cultural destinations. The program culminates in a thesis such that graduates are well equipped to conduct research as a means to inform and improve decision making. Graduates will be prepared for positions in public, private, and nonprofit organizations related to event tourism experiences.

### Admission Requirements

Applicants to the program must demonstrate a strong desire and commitment to the field and the intellectual capacity to complete graduate work. To be considered, applicants must have or provide:

Official transcripts from a baccalaureate degree in a related area (e.g., tourism management, hospitality management, sports management, leisure studies, recreation management, business) from an accredited institution. If a student has completed course work from any Indiana University campus, there is no need to submit a transcript.

- A minimum G.P.A. of 3.0 on a 4.0 scale.

- A satisfactory score on the Graduate Record Examination taken with the past five years (Note: All students, including graduates of IUPUI Department of Tourism, Event and Sport Management are required to take the G.R.E.).
- Three letters of recommendation that address the student's potential for academic success in a graduate program.
- A candidate's statement (1000 words) regarding the applicant's professional experiences, personal goals, career aspirations and how earning an M.S. degree relates to each.
- A completed graduate program application and payment of the non-refundable application fee.
- International students: A score of 550 or above for the paper-based TOEFL, 213 or above for the computer-based TOEFL, or 79 on the IBT.

### Prerequisite coursework and/or degrees:

Official transcripts from a baccalaureate degree in a related area (e.g., tourism management, hospitality management, leisure studies, recreation management, and management) from an accredited institution are required. Students applying to the program with the required prerequisite coursework and/or experience will have to take additional undergraduate courses before being admitted into the program. These include: TESM-G 472 Global Tourism Seminar; a 300 or higher statistics course

### Master of Science in Event Tourism-Thesis Option

Degree requirements for students in the School of Health & Human Sciences are established by the faculty of the school and may change. Students are bound by rules and regulations established by the faculty at the time of their initial matriculation as a graduate student. Every graduate student will be assigned an advisor who will help cooperatively plan their course of study depending on experiences and education objectives.

Required Courses (35 credit hours plus pre-requisites)

### Foundation Courses

- HPER-T 590 Introduction to Research in Health, Kinesiology and Recreation (3 cr.)
- HPER-T 591 Interpretation of Data in Health, Kinesiology and Recreation (3 cr.)
- Additional Graduate Level Statistics Course (3 cr.)
- TESM 599 Master's Thesis (5 cr.)

Total: 14 credit hours

Emphasis Courses (First three courses listed are required)

- TESM 500 Foundations of Event Tourism (3 cr.)
- TESM 531 Event Tourism Marketing (3 cr.)
- TESM 562 Economics of Event Tourism (3 cr.)
- TESM 519 Sports Tourism Management OR TESM 534 Cultural Tourism Management OR TESM 571 Strategic Meeting Management (3 cr.)

Total: 12 credit hours

### Pre-Requisites

- TESM 472 Global Tourism of equivalent (required for all) (3 cr.)

- SPEA-K 300 Statistical Techniques (3 cr.) or equivalent

Total: 6 credit hours

Elective Recommendations: (Selected with approval of advisor)

- SPEA-V 506 Statistical Analysis for Effective Decision Making (3 cr.)
- SPEA-V 507 Data analysis and modeling - Public Affairs (3 cr.)
- SPEA-V 521 Non-Profit and Voluntary Sector (3 cr.)
- SPEA-V 522 Human Resource Management in Non-Profit Organizations (3 cr.)
- SPEA-V 525 Management in the Non-Profit Sector (3 cr.)
- SPEA-V 526 Financial Management for Non-Profit Organizations (3 cr.)
- SPEA-V 550 Topics in Public Affairs (GIS) (3 cr.)
- SPEA-V 558 Funding Development for Non-Profits (3 cr.)
- SPEA-V 539 Management Science (3 cr.)

Total: 9 credit hours

### **Master of Science in Event Tourism-Sport Event Tourism-Non-Thesis Option**

Foundation Courses

- HPER-T 591 Interpretation of Data in Health, Kinesiology and Recreation (3 cr.)
- TESM 582 Applied Sport Event Research (3 cr.)
- TESM 500 Foundations of Event Tourism (3 cr.)

Emphasis Courses

- TESM 531 Event Tourism Marketing (3 cr.)
- TESM 562 Economics of Event Tourism (3 cr.)
- TESM 519 Sport Tourism Management (3 cr.)
- HPER-K 511 Legal Issues in the Sport Environment (3 cr.)
- HPER-K 514 Sport Marketing and Sponsorship (3 cr.)

Practicum Course

TESM 598 Master's Consulting Project (6 cr.)

## **Geography**

### **School of Liberal Arts**

Departmental E-mail: [geogdept@iupui.edu](mailto:geogdept@iupui.edu)

Departmental URL: <http://liberalarts.iupui.edu/geography/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### **Curriculum**

#### **Degrees Offered**

Graduate Certificate in Geographic Information Science and Master of Science in Geographic Information Science

#### **Special Departmental Requirements**

(See also general University Graduate School requirements.)

### **Grades**

B (3.0) average or higher.

### **Graduate Certificate in Geographic Information Science**

#### **Admission Requirements**

Bachelor's degree from an accredited institution. Recommended minimum undergraduate GPA of 3.0. Appropriate work experience will also be taken into account in making decisions about admission. Three letters of recommendation and a personal statement.

#### **Course Requirements**

Minimum of 15 credit hours, including a core curriculum consisting of G535, G538, and G639. The remaining courses are to be chosen from G536, G537, G539, and G588.

### **Master of Science in Geographic Information Science**

#### **Admission Requirements**

Undergraduate degree in geography or related discipline. Recommended minimum undergraduate GPA of 3.0. Appropriate work experience will also be taken into account when making decisions about admission. Satisfactory scores on the Graduate Record Examinations, three letters of recommendation, and personal statement.

#### **Course Requirements**

A minimum of 30 credit hours including core requirements in GIS theory and methods from three of the following four courses: G535, G537, G538, G588. All students must take G560 and G639.

#### **Thesis or Research Papers**

Students have the option of writing a thesis (G850) or two research papers (G845). Up to 6 credit hours are allowed for a thesis and up to 3 credit hours are given for each research paper.

### **Faculty**

#### **Chairperson**

Associate Professor Daniel Johnson

#### **Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### **Professors**

Frederick L. Bein\*, Jeffrey Wilson\*

#### **Associate Professors**

Timothy S. Brothers, Owen John Dwyer, Thomas Stanley Fedor, Aniruddha "Rudy" Banerjee, Daniel Johnson

#### **Director of Graduate Studies**

Associate Professor Aniruddha "Rudy" Banerjee, Cavanaugh Hall 207D, 317-274-3281

## Courses

### **GEOG-G 535 Introduction to Remote Sensing**

**(3 cr.)** Principles of remote sensing of the earth and its atmosphere, emphasizing satellite data in visible, infrared, and microwave portions of the electromagnetic spectrum. Emphasis on practical applications and digital image analysis. A satellite data analysis project is required.

### **GEOG-G 536 Advanced Remote Sensing: Digital Image Processing (3 cr.)**

P: G535 or consent of instructor. Advanced remote sensing theory and digital image processing techniques with an emphasis on environmental science applications. Hands-on computer exercises provide significant experience in digital image processing techniques for extraction of qualitative and quantitative information about Earth's terrestrial and aquatic environments.

### **GEOG-G 537 Computer Cartography and Graphics**

**(3 cr.)** Compilation, design, production, and evaluation of maps and related graphic materials. Includes cartometric procedures, symbolization, color use guidelines, map typography, photographic manipulations, computer animation, and geographic visualization techniques.

### **GEOG-G 538 Geographic Information Systems (3 cr.)**

Overview of the principles and practices of Geographic Information Systems (GIS). Spatial data models, database design, introductory and intermediate GIS, operations and case studies of real-world GIS applications. Laboratory exercises will provide significant hands-on experience. Lecture and laboratory.

### **GEOG-G 539 Advanced Geographic Information Systems (3 cr.)**

P: G538 or consent of instructor. Intermediate and advanced topics in geographic information science and spatial analysis techniques using GIS software. This advanced course is for students who seek a greater understanding of this rapidly developing field and to learn how to construct, manage, and analyze their own GIS data and models.

### **GEOG-G 560 Geography Internship (1-4 cr.)**

P: Graduate level courses in geography and consent of instructor. Faculty-directed study of geographical problems based on an internship experience. Student's area of placement must be related to major field of study. Offered fall, spring, and each summer session. Student may complete more than one internship, but total credit earned cannot exceed 4 credit hours.

### **GEOG-G 588 Applied Spatial Statistics (3 cr.)**

P: Consent of instructor. Extension of Traditional Statistical analysis to spatial data. Spatial means and spatial variances, the examination of differences in samples over space, spatial autocorrelation, nearest neighbor analysis, map comparison techniques. Emphasis on practical applications.

### **GEOG-G 639 Topical Seminar in Geographic Information Science (3 cr.)**

Applications of geographic information science principles in the collection and analysis of spatial data. Integration of GIS, remote sensing, and GPS technologies. Review of current literature on techniques, theory, technology, and applications with an emphasis on environmental topics. Discussion, laboratory, and research project.

### **GEOG-G 704 Soils Geography (3 cr.)**

P: G538. Examines the spatial aspects of soils from a global and local perspective including soil genesis, morphology, and classification; physical, chemical, mechanical and biological properties of soil; and land use mapping, analysis, planning, and management.

### **GEOG-G 845 Research Papers in Geography (3 cr.)**

Research papers under the supervision of faculty. Graduate students in the M.S. in Geographic Information Science program who choose the Research Papers option will develop two research papers under the guidance of their graduate advisor (IUPUI Faculty Member) and two other faculty members chosen in consultation with the advisor. The research paper topics will be related to the field of Geographic Information Science in their focus and methods. \*\*New only to IUPUI.

### **GEOG-G 850 Masters Thesis (3-6 cr.)**

Directed research and writing under the supervision of a faculty committee. \*\*New only to IUPUI.

## Health and Rehabilitation Sciences

### **School of Health and Human Sciences**

**Departmental E-mail:** shhsinfo@iupui.edu

**Departmental URL:** <https://shhs.iupui.edu/departments/health-sciences.html>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*. Requirements may or may not be reflected identically in departmental URLs.)

### **Curriculum**

#### **Degrees Offered**

- Master of Science in Health Sciences
- Doctor of Philosophy in Health and Rehabilitation Sciences
- Dual Degree: Doctor of Physical Therapy/ Doctor of Philosophy in Health and Rehabilitation Sciences

### **Master of Science in Health Sciences**

#### **Program Requirements**

The Master of Science in Health Sciences is a 36 hour, non-thesis program that can be completed in as little as two years.

#### **Admission Requirements**

To be eligible to apply for the Master of Science in Health Sciences at IUPUI you need to meet the following requirements and submit your application by March 30th:

- A bachelor's degree from an accredited college or university
- Cumulative undergraduate GPA of 3.0 on a 4.0 scale. Cumulative GPA is calculated on courses with grades that are recorded on official university/college transcripts.
- One undergraduate statistics or research methods course with a grade of B or better
- 3 letters of recommendation
- Personal statement (300 to 500 words) of academic and professional goals and/or reasons for your

interest in obtaining a position in the healthcare industry

- Admissions interview
- If applicable, a TOEFL score of
  - Paper-based test: 500 or higher
  - Computer-based test: 213 or higher
  - Internet-based test: 79 or higher

No student will be permitted to work toward a degree without first being admitted to the Master of Science program.

### Prior Course Work Applied Toward Degree Requirements

A maximum of 6 graduate credit hours earned at Indiana University before admission may be applied toward a degree. Upon the recommendation of the Health Sciences program director and with the approval of the School of Health and Human Sciences Academic Studies and Research Development Committee, up to 8 credit hours of graduate work at other institutions may be transferred in partial fulfillment of degree requirements. No course may be transferred from another institution unless the course was completed with a grade of B or higher within five years before matriculation in the Master of Science degree program.

### Curriculum Requirements

Course #	Title	Credits
HLSC H660	Rehabilitation Theories and Applications	3
HLSC H661	Theories of Health Promotion/Disease Prevention	3
HLSC H662	Rehabilitation Services in Healthcare Systems and Delivery	3
HLSC H760	Design and Analysis of Rehabilitation Research	3
HLSC H670	Research Practicum	3-6
HLSC H670	Research Practicum	3-6
HLSC H695	Internship in Health Sciences*	3-6
HLSC H710	Special Topics in Health Sciences	3
	Elective	3
	Elective	3

Elective	3
<b>Total</b>	<b>36</b>

## Doctor of Philosophy in Health and Rehabilitation Sciences

### Program Information

The Doctor of Philosophy in Health and Rehabilitation Sciences is an interdisciplinary program ideal for those interested in research rehabilitation and health sciences. Graduates of the program will acquire advanced knowledge and understanding of current trends and issues, and the problem-solving skills that will prepare them to assume leadership roles in practice and educational settings.

### Program Requirements

The minimum requirements for the PhD are 90 credit hours of advanced study, of which up to 30 credit hours may be transferred from a student's post-baccalaureate degree of study, as approved by the Advisory Committee and the University Graduate School.

The 90 credit hours for the PhD are distributed among the following four content areas:

- Health and Rehabilitation Sciences Core Curriculum – 15 credit hours
- Research – 21 credit hours
- Concentration – 30 credit hours
- Electives – 6 credit hours
- Dissertation – 18 credit hours

### Academic Progress: Time to Degree

Students enrolled in the PhD in Health and Rehabilitation Sciences have a total of seven years from the date of enrollment to complete the PhD. Students have five years from the date of enrollment to complete the qualifying project. Students not meeting either deadline will be terminated from the program. Exceptions to these timelines may be granted by the program faculty on a case-by-case basis for extenuating circumstances. It is the student's responsibility to document the extenuating circumstances and request the exception. This will apply to students beginning fall 2019.

### Admission Requirements

To be eligible to apply for the Ph.D. in Health and Rehabilitation Sciences at IUPUI you need to meet the following requirements:

- Completion of a post-baccalaureate degree in health and rehabilitation sciences or in a related healthcare discipline from an accredited institution, or completion of a baccalaureate degree with professional experience
- Cumulative undergraduate GPA of 3.0 on a 4.0 scale. Cumulative GPA is calculated on courses with grades that are recorded on official university/college transcripts.
- Résumé or curriculum vitae
- 3 letters of recommendation
- A personal statement (300 to 500 words) addressing the following:



- Preparation for research (examples include coursework in research, engagement in research projects or grants, and completion of a master's degree thesis)
- Intended research focus
- Learning objectives
- Leadership potential
- GRE Scores: Optional
- Admissions interview
- If applicable, a TOEFL score of Paper-based test:
  - 500 or higher
  - Computer-based test: 213 or higher
  - Internet-based test: 79 or higher

### Curriculum Requirements

Course #		Credits
	<b>Health and Rehabilitation Sciences Core Curriculum</b>	<b>15</b>
HLSC H660	Rehabilitation Theories and Applications	3
HLSC H661	Theory Application in Health and Rehabilitation Sciences	3
HLSC H662	Rehabilitation Services in Healthcare Systems and Delivery	3
HLSC H664	The Professoriate for Health and Rehabilitation Professionals	3
HLSC H760	Design and Analysis of Rehabilitation Research	3
	<b>Research</b>	<b>21</b>
GRAD N802	Techniques for Effective Grant Writing	3
NURS W540	Writing for Publication	3
HLSC H670	Research Practicum	6
GRAD G504	Intro to Research Ethics	3
	Research design and statistics electives (determined	

by advisory committee)

**Concentration 30**

**Electives 6**

**Dissertation 18**

**Total 90**

### Qualifying Project

Near, and usually in, the last semester of course work, students will complete a qualification project in health and rehabilitation sciences, prepared by the student's Advisory Committee and consisting of two components: an original research project and public defense. The project is to be original research that includes new data and is intended as a preliminary, independent project to the dissertation. The project is to be developed in consultation with the student's advisor and advisory committee and may overlap with other courses (e.g. independent study), course requirements, or projects. The project defense will be conducted in two parts: a draft manuscript using a format (e.g., APA or AMA) approved by the advisory committee and an oral, public defense of the project to the advisory committee, similar in style to a conference proceeding. Only students who successfully defend the project may continue in the program. Students failing the initial defense may redefend the project one time. The second defense must occur within six months of the original defense. Students successfully completing the qualifying project will be advanced to doctoral candidacy and may enroll in dissertation level credit.

### Dual Degree: Doctor of Physical Therapy/ Doctor of Philosophy in Health and Rehabilitation Sciences Program Information

The program consists of completion of the Doctor of Physical Therapy degree with the ability to transfer 30 credit hours of the professional doctoral coursework to fulfill the PhD concentration requirements

### Program Requirements

The program consists of a minimum of 110 credit hours for the Doctor of Physical Therapy and a minimum of 90 credit hours for the PhD degree.

### Admission Requirements

In order to be accepted into our Doctor of Physical Therapy/ Doctor of Philosophy in Health and Rehabilitation Sciences dual degree program, you must meet and complete the admission requirements for both programs established for the Graduate School, the School of Health and Human Sciences, and when applicable, the Office of International Affairs. New students may apply to both programs simultaneously; students currently in the Doctor of Physical Therapy program may apply anytime during their first or second year.

To be eligible to apply for the Dual Doctor of Physical Therapy and Ph.D. degree program you need to meet all the following requirements:

- Must be enrolled in the DPT program as a 1st or 2nd-year student.



- To determine dual-degree eligibility, submit a pre-application (see below).
- Pre-applications are accepted May 1st through August 15th and include a statement of interest, CV, and potential lab interests.

Students should expect a timeline of 3-5 years post- DPT.

### Curriculum Requirements

Course #		Credits
	<b>Health and Rehabilitation Sciences Core Curriculum</b>	<b>15</b>
HLSC H660	Rehabilitation Theories and Applications	3
HLSC H661	Theories of Health Promotion/ Disease Prevention	3
HLSC H662	Rehabilitation Services in Healthcare Systems and Delivery	3
HLSC H664	The Professoriate for Health and Rehabilitation Professionals	3
HLSC H760	Design and Analysis of Rehabilitation Research	3
	<b>Research</b>	<b>21</b>
GRAD N802	Techniques for Effective Grant Writing	3
NURS W540	Writing for Publication	3
HLSC H670	Research Practicum	6
GRAD G504	Intro to Research Ethics	3
	Research design and statistics electives (determined by advisory committee)	6

### Qualifying Project

Near, and usually in, the last semester of course work, students will complete a qualification project in health and rehabilitation sciences, prepared by the student's Advisory Committee and consisting of two components: an

original research project and public defense. The project is to be original research that includes new data and is intended as a preliminary, independent project to the dissertation. The project is to be developed in consultation with the student's advisor and advisory committee and may overlap with other courses (e.g. independent study), course requirements, or projects. The project defense will be conducted in two parts: a draft manuscript using a format (e.g., APA or AMA) approved by the advisory committee and an oral, public defense of the project to the advisory committee, similar in style to a conference proceeding. Only students who successfully defend the project may continue in the program. Students failing the initial defense may defend the project one time. The second defense must occur within six months of the original defense. Students successfully completing the qualifying project will be advanced to doctoral candidacy and may enroll in dissertation level credit.

### Faculty

#### Chairperson

Brent Arnold ([brelarno@iu.edu](mailto:brelarno@iu.edu))

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Professors

Austin Agho, Brent Arnold\*, Rafael E. Bahamonde\* (PETM), M. Sue Brady (Emerita), Thomas Fisher\*, Mathew Palakal\* (Informatics), Joyce Mac Kinnon, Jacquelyn O'Palka, Rebecca Porter

#### Associate Professors

Peter Altenburger, Sara Blackburn, Jeffrey Crabtree, Tracy Dierks\*, Judith Ernst, Robyn Fuchs\*, Michael Justiss\*, Anthony S. Kaleth (PETM), NiCole R. Keith\* (PETM), M. Terry Loghmani, Patricia Scott, Kathleen Stanton-Nichols\* (PETM), Jefferson W. Streepey (PETM), Stuart Warden\*

#### Assistant Professors

Keith Avin, Mary Beth Brown, Amber Comer, Elain Fess, Wei Li, Chiung-Ju Liu, Crystal Massie, Kristine Miller, Niki Munk, Rebecca Rebman, Zachary Riley\* (PETM), William R. Thompson

#### Graduate Advisor

Brent Arnold\*, 120 Coleman Hall, 1140 West Michigan Street, Indianapolis, IN 46202, (317) 278-9653

### Courses

Courses in Health Sciences / Health and Rehabilitation Sciences

- **SHRS-W 510 Trends and Issues in the Health Sciences (3 cr.)** A seminar course to review pertinent literature and other sources of information as a basis for discussing trends and issues affecting the therapeutic professions and the health care delivery system.
- **SHRS-W 520 Evidence-Based Critical Inquiry in the Health Sciences (3 cr.)** Fundamentals of research methodology, design, techniques, and

procedures applicable to research problems in the allied health disciplines. Introduction to computer data analysis.

- **SHRS-W 540 Patient-Centered Outcomes Research (3 cr.)** Explorations of selected patient-centered outcomes evaluation methodology and research evidence related to the health professions at an advanced level.
- **SHRS-W 541 (3 cr.)** Designed to expand students' knowledge of administration, supervision, and leadership practice. Students will develop an in-depth understanding of leadership practice in a rehabilitation organization.
- **SHRS-W 550 Health and Rehabilitation Systems Across the World (3 cr.)** Issues in global health and rehabilitation deliver systems from the viewpoint of many different disciplines with an emphasis on economically less developed countries.
- **SHRS-W 551 Health and Rehabilitation Professionals in Developing Countries (3 cr.)** The primary purpose of this course is to help students understand the roles and expectations and the scope of training and educational preparation of health and rehabilitation professionals across the world with emphasis on economically less developed countries.
- **SHRS-W 552 Seminar in Global Rehabilitation and Health (3 cr.)** This course is designed to cover current topics in international management and organization of health and rehabilitation services, governance, ethics, impact of donor organizations, and emerging global primary and public health care issues.
- **SHRS-W 560 Survey of Adaptive Rehabilitation Technology (3 cr.)** Assisting students in the knowledge/awareness of available high-tech/low-tech equipment, or product systems that are used in rehabilitation settings to increase, maintain, or improve functional capabilities of individuals with disabilities, emphasizing the application of clinically-based strategies for determining an individual's need for and acceptance of adaptive technology to improve functional outcomes.
- **SHRS-W 561 Approaches to Rehabilitation Case Management (3 cr.)** Exploring the historical perspective, technological and humanitarian advances, and major issues in the rehabilitation administrative environment; discussing and analyzing the legislative mandates relative to their effects on shaping the administrative environment in rehabilitation; acquiring knowledge of the process and significance of administrative competency in delivering services to rehabilitation consumers.
- **SHRS-W 562 Psychological Aspects of Disability (3 cr.)** P: Medical terminology course or equivalent. Students will review medical terminology and gain an understanding of major disabling conditions, the psychological and vocational aspect of adjustment to disability and chronic long term illness, and examine psychological and social theories related to disability and chronic illness and Code of Ethics.
- **SHRS-W 570 Research Communication in the Health Sciences (2-3 cr.)** P: W520 and consent of both instructor and research advisor. Instruction and consultation in the preparation of master's thesis proposals, including computer applications for conducting online literature searches, developing an individual bibliographic database, designing an original research project, and devising a sound methodology. Final outcome is a completed thesis proposal for submission to a graduate student's thesis committee. Course is open only to health sciences graduate students pursuing the research/thesis track in their program of study. Students must begin the course with a specific research agenda already approved by their research advisor.
- **SHRS-W 594 Administration of Health Sciences Education (3cr.)** Principles of effective organization, supervision and administration of educational programs in the health sciences.
- **SHRS-W 599 Thesis in Health Sciences (3cr.)** Thesis in Health Sciences. Can be repeated. Focuses on the data collection, analysis and writing of the thesis.
- **SHRS-W 600 Project in Health Sciences (3cr.)** Individual investigation in the form of an organized scientific contribution or a comprehensive analysis in a specified area related to the health sciences.
- **SHRS-W 625 Diversity Issues in Health and Rehabilitation Services (3 cr.)** Designed to prepare students to formulate strategies to address the interrelationship of race, gender, culture, and ethnicity and how they affect access and use of health and rehabilitation services.
- **SHRS-W 640 Medical Aspects of Disabilities (3 cr.)** The primary emphasis of this survey course is on medically determined aspects of disabling impairments and disabilities. Students will learn the functional limitations associated with major disabling conditions particularly as they relate to the delivery of rehabilitation services. Current trends and methodologies involved in rehabilitation processes will be covered.
- **SHRS-W 641 Proposal Writing for Community-Based Rehabilitation Programs (3 cr.)** An interactive educational opportunity to develop skills related to fund development in a community rehabilitation setting, providing an overview of the grant development process. Students will research local and national funding sources and learn about traditional and non-traditional sources to develop and maintain community-based rehabilitation programs. Includes guest speakers.
- **SHRS-W 642 Practicum in Rehabilitation and Disability (3 cr.)** Designed to give students direct work experience in various private and public sector rehabilitation agencies, this experiential component allows the student an opportunity to apply his/her newly acquired normative and cognitive skills and knowledge in an actual work setting.
- **SHRS-W 650 Global Perspectives in Nutrition, Health, Disease, and Disability (3 cr.)** Major emphasis on global perspectives with specific focus on economically less developed countries, examining existing and emerging issues in international nutrition that influence the health, well-being, and disability and the efficacy and effectiveness of nutritional interventions in the prevention of disease and disability among people living in developing countries.

- **SHRS-W 651 International Service-Learning in Rehabilitation (3 cr.)** Designed to give students direct experience in the organization and financing of rehabilitation services in other parts of the world, this experiential component allows students to apply their newly acquired normative and cognitive skills and knowledge in an international rehabilitation institution. Students will travel abroad under the supervision of faculty.
- **SHRS-W 660 Rehabilitation Theories and Application (3 cr.)** This course explores theories common to all rehabilitation therapies and forms a foundation for rehabilitation sciences. Theories such as adaption to disease, cognition, disability, and injury are applied to rehabilitation practice and research design across the life span.
- **SHRS-W 661 Theories of Health Promotion and Disease Prevention (3 cr.)** This course focuses on the role of health behaviors such as eating nutritious foods, exercising, and avoiding unhealthy habits, in health promotion and disease prevention. A principal concentration will be on health promotion within disabling conditions.
- **SHRS-W 662 Health and Rehabilitation Systems Delivery (3 cr.)** This course analyses emerging trends in health care systems and delivery associated with rehabilitation. Areas to be covered include organizational infrastructures, finance, public policy and implications for disparate patient populations.
- **SHRS-W 663 Legal and Regulatory Aspects in Rehabilitation (3cr.)** Assisting students in the understanding of legal and regulatory challenges faced by rehabilitation professionals, covering legal issues in counseling and case management, and significant rehabilitation-related legislation in the United States from 1917 to the present.
- **SHRS-W 667 Ethical Issues in Rehabilitation Services (3 cr.)** Designed to explore contemporary ethical issues and concerns related to the delivery, organization, and management of rehabilitation services.
- **SHRS-W 670 Research Practicum in Health and Rehabilitation Sciences (3-6 cr.)** Instructional orientation to research; includes laboratory experience in the student's concentration area. This course may be taken more than once.
- **SHRS-W 672 Teaching Practicum in Health and Rehabilitation Sciences (3 cr.)** Instructional teaching theories and methodologies to include teaching a unit of instruction in the student's concentration area. This course may be taken more than once. NOTE: Any student that has an interest in teaching is advised to incorporate other instructional teaching methodology courses into his/her plan of study.
- **SHRS-W 680 Independent Study in Health and Rehabilitation Sciences (1-4 cr.)** A course for students interested in specific interdisciplinary topics in health and rehabilitation sciences.
- **SHRS-W 690 Dissertation Proposal in Health & Rehabilitation Sciences (3-9 cr.)** Students will submit a written proposal for original scholarly work that makes a significant contribution to research in the field of health and rehabilitation sciences.

Proposal to include introduction to topic, literature review, and indication of methodology. This course may be taken more than once.

- **SHRS-W 692 Dissertation in Health & Rehabilitation Sciences (3-9 cr.)** P: W690. Original scholarly dissertation that makes a significant contribution to the field of health and rehabilitation sciences. Topic to be selected by the student and his/her Research Committee.
- **SHRS-W 710 Special Topics in Health & Rehabilitation Science (3 cr.)** This course provides students with an opportunity to engage in focused study of a substantive area of health and rehabilitation science directly related to the student's identified area of theoretical and research interest. May be repeated with the permission of the student's advisory committee.
- **SHRS-W 799 Master's Thesis Continuation (1cr.)** Used as continuation credits for completing the master's thesis in a format acceptable to the student's advisory committee, leading to successful defense of the final product. May be repeated for credit.

## Faculty

### Chairperson

Associate Professor Maria Brann\*

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Linda G. Bell\*, John Parrish-Sprowl\*, Sandra Petronio\*, Kristina Horn Sheeler\*

### Associate Professors

Maria Brann\*, Jennifer J. Bute\*, Catherine A. Dobris, Elizabeth Goering\*, Kristine Karnick, Marianne Matthias, Gail G. Whitchurch\*, Kim White-Mills\*

### Assistant Professors

Katharine Head, Krista Hoffman-Longtin, Jonathan Rossing, YoungJu Shin

### Director of Graduate Studies

Jennifer Bute, Department of Communication Studies, Cavanaugh Hall 307J, IUPUI, (317) 274-2090, [jjbute@iupui.edu](mailto:jjbute@iupui.edu)

## Health Communication

### School of Liberal Arts

### Department of Communication Studies

Departmental E-mail: [commdept@iupui.edu](mailto:commdept@iupui.edu)

Departmental URL: <http://liberalarts.iupui.edu/comm/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in The University Graduate School Bulletin).

## Curriculum

### Degrees Offered

#### Doctor of Philosophy in Health Communication

The Ph.D. program in health communication includes the following main program objectives. Students will:

- Obtain competency for teaching and research in areas that include: health and interpersonal relationships, intercultural health, and mediated communication in healthcare contexts including health campaign development. Ethical questions regarding each of these health communication contexts will be explored as well.
- Initiate, participate, and develop competency in research on health and medical communication issues.
- Gain skills in understanding clinical problems affected by communication.
- Develop the capabilities necessary to translate research on clinical problems impacted by communication into practice.
- Receive training for academic jobs and healthcare professional positions.

### Special Departmental Requirements

(See also general University Graduate School requirements.)

### Admission Requirements

#### Required Coursework

- Students entering the program must have at least a Master's degree (minimum of 30 credit hours) in Communication or a related social science or health discipline. Preference will be given to those students with degrees from communication studies programs.
- Students should have a GPA of 3.5 or higher in their Master's coursework.
- Students are expected to have taken some foundational coursework in Communication. For students entering the program with no background in Communication, additional preparatory coursework in the discipline may be required as a condition of admission.

#### Required Testing

- Applicants are required to take the Graduate Record Examination (GRE) Revised General Test (Quantitative, Verbal, and Analytical Writing). While the Department of Communication Studies has not instituted a fixed minimum GRE-score requirement, successful candidates typically have scores between 150-170 in Verbal Reasoning and in Quantitative Reasoning and a score between 4.0-6.0 in Analytical Writing.
- In addition, non-native English speakers who did not complete a degree at a college or university in the U.S. must take an English competency test. The student may complete either of the following:
  - Test of English as a Foreign Language (TOEFL). The expectation for admission is a minimum score of 88 on the TOEFL iBT (internet based test). Please note that this score represents the minimum that will be

considered. In practice, we look for scores above 100.

- International English Language Testing System (IELTS). The minimum acceptable IELTS score is 6.5; in practice, we look for an IELTS of 7 or more. It is required that applicants take the *academic* reading and writing modules, not the *general training* reading and writing modules. Please note that this score represents the minimum that will be considered. In practice, we look for scores above 7.

#### Additional Required Materials

- A written statement of purpose for entering into this Ph.D. program,
- Three letters of recommendation from individuals in professional positions able to judge success
- Curriculum vitae
- Graduate and undergraduate transcripts
- A writing sample demonstrating academic writing ability

#### Undergraduate Record

Graduate School requirements include a bachelor's degree from an accredited college or university, a minimum 3.0 grade point average on a scale of 4, and a minimum 3.0 average in the major field.

*Applications will be viewed in their entirety. A candidate's outstanding qualifications in one area can be balanced against more marginal qualifications in another dimension. Keep in mind that admission is competitive and financial support even more competitive. Most of the students admitted and supported will exceed the minimal requirements*

#### Program Requirements

IU requires a minimum of 90 credit hours of approved graduate coursework beyond the Bachelor's degree. A maximum of 30 credit hours of approved graduate work completed with a grade of B or better may be transferred with the approval of the advisory committee and the Dean of the University Graduate School. All coursework taken for the Ph.D. must be completed within seven years prior to the passing of qualifying exams, including any transfer courses. Coursework that does not meet this criterion may be revalidated.

Students entering the program must have at least a Master's (minimum of 30 credit hours) in a related social science or health discipline, with preference given to those students with degrees from communication studies programs. Overall, the requirements include core courses (15 credit hours), seminars in content areas focused on (but not limited to) interpersonal relationship communication, intercultural communication, mediated/campaign communication (at least 15 credit hours), minor (9-12 credit hours), field work/research (6-9 credit hours), and dissertation credits (12 credit hours).

#### Core Courses (15 credit hours) required of all students

- C500 Advanced Communication Theory (3)
- C592 Advanced Health Communication (3)
- C680 Doctoral Qualitative/Rhetorical Methods (3)
- C690 Doctoral Quantitative Methods (3)



- C695 Seminar in Communication and Healthcare (3)

#### Seminars in Content Areas (at least 15 credit hours)

- Students may select from the courses offered within Communication Studies. In addition, other cross-listed seminars from affiliated faculty in departments or programs such as the Indiana Center for Intercultural Communication (I.C.I.C.). Medical Humanities, Medical Sociology, and other health-related areas may count toward the student's degree with approval from the student's advisor.

**Minor Area of Emphasis (9-12 credit hours):** All students must complete a minor in an area related to their primary health communication focus. For example, a student hoping to work in a non-profit health organization might pursue a minor area of emphasis in public health, health informatics, or philanthropic studies. Students hoping to work in the government sector might pursue law and health, industrial organizational psychology, or public health. Minor areas of Ph.D. study might also include bioethics, nursing, bioinformatics, clinical psychology, medical sociology, marketing, social work, health economics, science, or any area in the health and life sciences disciplines or the Liberal Arts disciplines connected to the student's area of primary focus. An interdisciplinary minor can be developed in consultation with the student's advisor and advisory committee as well as a minor in research methods/tools. The minor area of emphasis must be approved by the student's advisor and advisory committee and contain a minimum of three graduate level courses (9 credit hours) in accordance with the department or unit in which the minor is housed. Some departments require a 12 credit hour minor.

**Comprehensive Examinations:** All students must take written examinations that cover both broad knowledge of the health communication field as well as specialized knowledge of a chosen area of health communication. Comprehensive exams are taken after the student has completed a minimum of 39 credit hours (beyond the Master's) including the required core, seminars, and minor coursework.

**Fieldwork /Research (6-9 credit hours):** All students are required to initiate or participate in original research with the approval of advisor. This field/research work is geared to focus the student's research interest to serve as a spring-board for the dissertation work.

**Ph.D. Dissertation (12 credit hours):** Dissertation credits are structured so that the student is unencumbered with completing coursework and can focus completely on conducting research and writing the dissertation for completion of the degree.

#### Courses

- **COMM-C 500 Advanced Communication Theory (3 cr.)** Students explore how scholars from various traditions have described and explained the universal human experience of communication. Students develop an understanding of a variety of communication theories to more completely interpret events in more flexible, useful, and discriminating ways.
- **COMM-C 501 Applied Quantitative Research Methods in Communication Studies (3 cr.)**

The course is designed to offer an opportunity to examine, assess, and conduct quantitative research that employs communication theory and quantitative research methods as a means to test theory in applied settings and/or as a means to applied ends (i.e., problem-solving policy analysis).

- **COMM-C 502 Applied Qualitative Research Methods in Communication Studies (3 cr.)**  
P: 6 credits (at any level) of coursework in Communication Studies. Inductive (data-to-theory) approach to knowledge, and associated sequential and non-sequential methods for studying communication in applied everyday situations, e.g., friendships and other close personal dyads, families, small groups, organizations, and public, media, historical, computer mediated, or health-related contexts.
- **COMM-C 503 Applied Learning Project (3 cr.)**  
An applied learning project that provides students with a culminating educational experience. The project gives students the opportunity to apply their knowledge of communicative processes to real-life organizational problems, and provides the opportunity to produce a body of work reflecting their abilities.
- **COMM-C 510 Health Provider-Consumer Communication (3 cr.)** Designed to teach communication skills and practices related to health care talk by examining transactional communication within health care contexts. Topics covered in this course focus directly upon interpersonal dialogue between health care providers and patients.
- **COMM-C 520 Advanced Public Communication (3 cr.)** Theory and application of oral communication integral to institutional and corporate professionals. Critical analysis of representative manuscripts of American speechmaking, and development and presentation of forms and types of public address for professionals.
- **COMM-C 521 Family Comm in Health Contexts (3 cr.)** This interdisciplinary seminar focuses on communication involving families in health care settings, addressing significant issues for graduate/professional students who will work with families, including students in Comm. Studies, Nursing, Psychology, Social Work, Public Health, and Medicine. Topics include communication with families about health care concerns and family-patient-health provider systems
- **COMM-C 526 Effective Media Strategies (3 cr.)**  
This course specifically focuses on the effective use of media as a means of persuasion. This course explains how ideas are expressed through techniques unique to the language of radio, television, film, and the Internet.
- **COMM-C 528 Group Communication and Organizations (3 cr.)** This seminar-format course examines the ways in which informal groups and communication networks facilitate a variety of organizational processes (i.e., socialization, diffusion of innovation). Emphasis is placed on developing theoretical understanding of informal groups in



organizations as well as on methodological issues involved in studying communication networks in organizations.

- **COMM-C 530 Communication Criticism (3 cr.)** This course will introduce students to criticism as a method of studying persuasive messages in speeches, fiction, mass media, musical lyrics, political campaign literature, art, and other modes of communication in contemporary culture.
- **COMM-C 531 Media Theory and Criticism (3 cr.)** A course organized primarily around theories and critical strategies commonly considered within the broad category of contemporary criticism. The course utilizes primary theoretical texts to introduce students to a variety of methodologies employed in analyzing media messages, and emphasizes the application of theoretical frameworks on the analysis of specific media texts.
- **COMM-C 544 Advanced Relational Communication (3 cr.)** An introductory course in interpersonal communication. Applications of communication theory/research in such areas as relational culture and relationship development. Includes a scholarly project on a real relationship, and applications of research to areas such as pedagogy and couple/family therapy.
- **COMM-C 580 Advanced Organizational Communication (3 cr.)** The course provides a solid foundation of concepts for understanding and discussing human organizations. Students will analyze, evaluate, and apply the theories and practices related to organizational issues. Through case studies, readings, and practical applications, this course combines a theory-based understanding of communication in organizations with real-world applications.
- **COMM-C 582 Advanced Intercultural Communication (3 cr.)** Exploration of issues related to the intercultural communication process. Consideration of the role of social, cultural, and historical contexts in intercultural interactions. Examination of the relationship between culture and communication from the socio-psychological, interpretive, and critical perspectives.
- **COMM-C 591 Topics/Seminar in Applied Communication (3 cr.)** This is a revolving topics course. The changing nature of the topic allows graduate students to explore, synthesize, and integrate knowledge of the field of communication and the particular discipline of applied communication while focusing on a single topic not otherwise addressed in the course of study.
- **COMM-C 592 Advanced Health Communication (3 cr.)** A course designed to teach communication skills and practices related to health care by examining health care communication theory. Topics range across communication levels (interpersonal, intrapersonal, group, organization, mass media, and mediated communication) within a variety of health care contexts.
- **COMM-C 593 Advanced Family Communication (3 cr.)** Applications of theory and research on the role of communication in creating and maintaining marriages/committed couples and families. Includes a scholarly term paper on a real couple or family's communication.
- **COMM-C 594 Communication and Conflict Management in Organizations (3 cr.)** This seminar-format course examines the communication exchanges that facilitate conflict management within organizational contexts. Specific attention is focused on negotiation and mediation; however, the communication of alternative means of conflict and dispute resolution are also discussed. In addition, students will be introduced to methods for assessing conflict interaction in organizations.
- **COMM-C 597 Thesis (3 cr.)** Applied communication students who choose the thesis option will identify a research topic and develop it under the guidance of the student's thesis director (IUPUI professor). The thesis topic will be related to the field of applied communication in its foci and method.
- **COMM-C 598 Internship (1-3 cr.)** This course integrates applied communication theory and practice in a practice setting. Students will apply theoretical concepts and research tools, conduct projects, and interact with communication professionals in the designated setting. In concert with the student's chosen area of concentration, he or she will address issues of importance to that particular organization.
- **COMM-C 599 Independent Study (1-6 cr.)** This course provides students with the opportunity to synthesize and apply knowledge acquired through course work and professional experience into a completed research project in applied communication. Students will work independently on a topic/issue of choice under the guidance of graduate faculty.
- **COMM-G 598 Communication Studies Thesis Research (0 cr.)** Master's students who have enrolled in 30 or more hours of graduate course work applicable to the degree and who have completed all other requirements of the degree except the thesis of the final project of performances may enroll in COMM G598. Requires section authorization.
- **COMM-C 620 Computer-Mediated Communication (3 cr.)** An overview of practical and scholarly approaches to computer mediated communication. The readings address mass communication, discourse, community, gender, intercultural understanding, ethics, interpersonal relationships, identity, organizational communication, and education.
- **COMM-C 621 Persuasion (3 cr.)** This course takes a rhetorical/critical approach to persuasion in its broadest sense, how it affects our lives everyday and how we can find evidence of persuasive tactics in unexpected places. We will look broadly at

theories of persuasion and their application across contexts and fields.

- **COMM-C 644 Political Communications (3 cr.)** This course will examine the public communication involved in various political contexts. We will consider the communication involved in political campaigns, advertising, and oratory; social media, technology, and popular culture; the news, framing, and political media; citizenship, public deliberation, and decision making in what some argue is a divided political culture. We will read and discuss state of the art research in political communication and meet individuals who are currently working in a communication capacity in public political campaigns.
- **COMM-C 650 Health Communication Media (3 cr.)** Focus on the effect of media on health behavior. Theories of health behavior change and media effects examined; applications of theory to health campaigns evaluated. Examples of mediated health campaigns and effectiveness discussed. Considerations include: interplay among theory, research, practice; how theory informs practice; how research aids in theory construction/refinement.
- **COMM-C 680 Qualitative/Rhetorical Methods** Focuses on health-related issues and topics through the complementary lenses of rhetoric and social sciences in communication. Qualitative social science-based approaches to research share numerous assumptions with rhetoric. These include, but are not limited to: Research based on inductive reasoning; methods cannot be detached from the objects of the research; researchers cannot separate themselves from the research; research is at least as much an art as it is a science.
- **COMM-C690 Quantitative Research in COMM** Course focuses on the principles and theory of descriptive and inferential statistics within the context of health communication research. Topics include ttest, ANOVA, MANOVA, ANCOVA, correlation, multiple regression, and SEM. Students will gain proficiency using SPSS to analyze novel data sets, and will conduct their own health communication research projects and report the results.
- **COMM-C695 Communication and Healthcare** This seminar offers an interface between learning from practicing providers and experts in medical care specialties and becoming enmeshed in health communication research. The course is structured so that the student gains insights from experts in the medical field while also gaining an overview of research issues through reading and engaging in health communication research.
- **COMM-C700 Fieldwork/Research** This course is designed to allow PhD students to complete independent research projects prior to enrollment in the dissertation course. Students can enroll in 1-9 credit hours in any given semester, depending on the nature of the project. The fieldwork/research course is designed to focus the student's research interests and to serve as a spring-board for dissertation work. Students must have ample preparation in some theoretical area and in one

or more research methods prior to registration for the course. The course will allow students to initiate or conduct a research study, including the collection and examination of data (broadly defined), to answer a question or to test a hypothesis related to communication theory. May be repeated for credit.

- **COMM-C810 Dissertation**

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## **Health Policy Management**

**Department of Health Policy and Management**

**Richard M. Fairbanks School of Public Health**

**School URL:** <http://www.pbhealth.iupui.edu>

**School E-mail:** [pbhealth@iupui.edu](mailto:pbhealth@iupui.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### **Curriculum**

#### **Degrees Offered**

Doctor of Philosophy in Health Policy and Management

#### **Doctor of Philosophy**

The PhD in Health Policy and Management program at the IU Richard M. Fairbanks School of Public Health is ideal for students who are interested in developing the analytical, methodological and professional skills needed to tackle the many health policy and management challenges facing Indiana, our nation, and the world. As a core discipline within the field of public health, health policy and management focuses on the creation of new knowledge that informs the advancement of health services delivery within and across the public, private, and non-profit sectors. With a PhD degree in Health Policy and Management, students will be well-prepared to take on independent research roles as academic faculty members.

Students pursuing this degree must complete at least 90 credit hours that include advanced graduate coursework, passing a qualifying examination, and researching and defending a dissertation that makes an original contribution to the field. The department's distinguished faculty members instruct, mentor, and collaborate closely with students. You'll benefit from working with faculty members who are nationally recognized for their research in health information technology, healthcare organizations, health policy and law, health impact assessment, and more. To support this research, faculty members have a diverse research funding portfolio that includes grants and contracts from the NIH, AHRQ, SAMHSA, NCAA, CDC, and numerous Indiana state agencies. Students have access to outside expertise through the department's

longstanding close collaborations with the IU School of Medicine, the Regenstrief Institute, the IU Kelley School of Business, the IU McKinney School of Law, the Indiana Clinical and Translational Sciences Institute, the Indiana Hospital Association, the Indiana State Department of Health, and top health systems and professional organizations throughout the state and nation.

### **Admission Requirements**

Admission to the Health Policy and Management PhD program at the IU Richard M. Fairbanks School of Public Health is based on completion of a baccalaureate degree, although it is anticipated that many applicants will have completed a post-baccalaureate degree in public health or other health-related discipline. Online Application Steps

You may apply to our Health Policy and Management PhD program online via [SOPHAS](#), the centralized Schools of Public Health Application Service.

Remember to designate the IU Richard M. Fairbanks School of Public Health as one of your school choices, along with your desired program.

The application deadline for Fall admission is May 1 (April 1 for international students). Applications will be reviewed as they are received. The deadline to receive priority for financial support is January 5.

### **Supporting Documentation**

In addition to completing the SOPHAS application, you are also required to submit the following supporting documentation directly to SOPHAS:

- **Statement of Purpose and Objectives:** Provide an essay of approximately 750 words describing your past education, experience, and current professional career objectives. You are encouraged to comment on any or all of the following: plans you have to use your education and training; the needs and/or challenges you perceive as important in your field of study; and, any personal qualities, characteristics, and skills you believe will enable you to be successful in your chosen field of study.
- **Résumé or Curriculum Vitae (CV)**
- **Official post-secondary transcripts** from all U.S. institutions attended (must be sent directly from the institutions to SOPHAS). This includes previous study at Indiana University.
- It is strongly recommended that all transcripts be submitted no later than 15 days before the application deadline to allow SOPHAS adequate time to verify transcripts. Please note it can take up to four weeks for transcripts to be verified.
- **World Education Services (WES)** ICAP course-by-course evaluation for all post-secondary foreign institutions attended. Please Note: U.S. applicants who studied at foreign institutions as part of a study abroad experience at their U.S. college or university, do not need to provide a WES evaluation of their study abroad coursework.
- **Three letters of recommendation** from persons qualified to assess your academic work; clinical, public health, or professional experiences; or, leadership potential in public health. These letters should be from professional sources who can provide an unbiased, current and critical assessment

of your abilities, skills, strengths and weaknesses related to successfully completing a doctoral program.

- **Sample of scholarly writing** – Applicants must submit an electronic copy of a course paper or published article in which the applicant is the sole author. This document can be uploaded to your SOPHAS application.
- **GRE test scores** – GRE scores, while not required for admission (see waiver instruction), must be submitted in order for students to be considered for some fellowship funding. Applicants must submit GRE scores to SOPHAS using the following designation DI Code 0167.
- **Test Score Waiver** – If you have a graduate or professional degree from an accredited U.S. institution, you may request a [waiver for the test score requirement](#). (Please contact [fsphinfo@iupui.edu](mailto:fsphinfo@iupui.edu) to obtain information contained in this document in an accessible format.)
- **Proof of English Proficiency**

Applicants whose native language is not English or whose academic study was done exclusively at non-English speaking institutions, must prove English proficiency by providing either official Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) scores. Scores must be less than two years old.

## On-site Interview Steps

**In-person interview:** Applicants will be invited to participate in an in-person interview with several members of the Admissions Committee. Alternative arrangements can be made for applicants unable to be interviewed on-site.

**Completion of an on-site essay:** Applicants participating in the interview process may be asked to write a short essay on a specific topic assigned to them using Microsoft Word. The purpose of this step is to allow the Admissions Committee to assess the applicant's English writing skills.

## Review of Applications

Completed applications will be carefully reviewed by the Health Policy and Management PhD Admissions Committee after the program deadline. The Admissions Committee will determine each applicant's acceptance or non-acceptance to the Health Policy and Management PhD program by using the following selection criteria:

- *Scientific Leadership Potential:* Assessed by the applicant's resume/CV, personal statement, and personal interview.
- *Ability to Engage in Advanced Graduate Work:* Assessed by the applicant's personal interview, evaluation of letters of recommendation, overall grade point average in prior graduate work, and scores from the GRE or other graduate entrance exams.
- *Learning Goals and Objectives:* Assessed by the applicant's personal statement and personal interview.

## Apply Now

You may apply online to our Health Policy and Management PhD program via [SOPHAS](#), the centralized

Schools of Public Health Application Service, [SOPHAS](#). Remember to designate the IU Richard M. Fairbanks School of Public Health as one of your school choices along with your desired program.

Applicants will be reviewed as they are received, and decisions may be made on a rolling basis. The application deadline to receive priority for financial support is January 5. However, applications will be accepted through May 1 (April 1 for international students). All required application documents must be submitted by the PhD program deadline. It is strongly recommended that all transcripts are submitted no later than 15 days prior to the application deadline to allow SOPHAS adequate time to verify transcripts. Please note that it can take up to four weeks for transcripts to be verified.

We'll let you know by e-mail once we receive your application. If you have questions about the application process, contact student services (317) 274-2000.

## Course Requirements

The Health Policy and Management PhD program consists of ninety (90) credit hours and can be completed on a full-time or part time basis. Students must complete the PhD courses within seven (7) years of matriculation into the program. After finishing their coursework, students have up to seven (7) additional years to complete their dissertation. However, students must complete their coursework and dissertation within a ten (10) year period.

### Public Health Foundations (9 crs.)

*Take all three courses for a total of nine credit hours. Some students will be able to transfer credit for these courses.*

- P506 Population and Public Health (3 credits)
- H641 Ethics in Public Health (3 credits)
- B551 Biostatistics for Public Health I (3 credits)

### Health Policy and Management Foundations (12 cr.)

- H786 Healthcare Organizations Research (3 credits)
- future H787 Health Policy Research (3 credits)

One of the following two:

- H658 Health Policy and Program Evaluation (3 credits)\*
- S510 Introduction to Research Methods in Public Health (3 credits) \*

One of the following two:

- H619 Financial Management for Public Health Organizations(3 credits)
- H514 Health Economics (3 credits)

*\*PhD students may be expected to register for a different section of these courses and/or complete additional assignments/tasks commensurate with the expectations of a doctoral course. PhD students with prior equivalent coursework will be expected to substitute a more advanced course in a related area.*

### PhD Seminars (13 crs.)

Students will be expected to take the HPM Research Seminar course during four times for a total of 12 credit



hours. These courses do not build on one another and need not be taken in order.

- H747 Health Policy and Management Research Seminar (12 credits)
- S725 Preparing for Academics in Public Health (1 credit)

### **Methods and Skills Courses** (24 crs.)

#### **Required Courses**

- B562 Biostatistics for Public Health II (3 credits)
- H644 Health Impact Assessment (3 credits)
- H781 Research Design in Health Policy and Management Research (3 credits)
- H782 Quantitative Methods in Health Policy and Management (3 credits)
- H783 Qualitative Methods for Health Services Research (3 credits)
- H657 Application of Cost-Effectiveness Analysis in Pub Health (3 credits)

#### **Elective Courses**

*Choose two of the following. Other courses may be substituted with program director approval.*

- E606 Grant Writing for Public Health (3 credits)
- E710 Advanced Public Health Survey Methods (3 credits)
- E563 Systematic Reviews and Meta-analysis in Health Sciences (3 credits)

### **Minor Area** (12 crs.)

Students must complete a PhD minor. The minor must contain at least four graduate courses (12 credit hours) and comply with the requirements of the minor department/unit. Students wishing to complete a minor outside of the following should consult with the program director for guidance: Epidemiology, Biostatistics, Social and Behavioral Sciences, Health Informatics, Sociology, Policy Analysis.

### **Dissertation** (20 crs.)

- H799 Dissertation Proposal (4 credits)
- H800 Dissertation Research (16 credits)

### **Other Degree Requirements for the PhD in Health Policy and Management**

#### **Public Health Coursework**

Health Policy and Management PhD students without a graduate degree, certificate or coursework in public health will be required to complete online introductory modules on Environmental Health and Social and Behavioral Science to ensure they have basic competencies in all five core public health areas. This is a requirement of the Council on Education in Public Health (CEPH), the Fairbanks school's accrediting body.

#### **PhD Advisory Committee**

The Department of Health Policy and Management will assign the student to an advisory committee after completion of the first year in the PhD program. The advisory committee will include at least two Health Policy and Management faculty; one member may be from another discipline. The advisory committee will

approve the student's program of study and counsel the student until he or she passes the qualifying examination. The chair of the PhD advisory committee will be a full-time faculty in the Department of Health Policy and Management. Faculty who meet the IUPUI Graduate School guidelines will be eligible to serve as dissertation advisors.

### **Minor Area**

The student will select at least one minor from outside the department of Health Policy and Management. The PhD minor typically includes four graduate level courses, complies with requirements of the respective minor department or program, and must be approved by the student's advisory committee. Examples of minors include: bioethics, international research ethics, biostatistics, epidemiology, health economics, medical sociology, medical anthropology, nursing administration, business administration, and bioinformatics.

### **Qualifying Examinations**

The written qualifying examination is designed to assess the student's attainment of the stated Health Policy and Management PhD competencies and is taken after the coursework for the PhD has been completed. Students who fail the qualifying examination are normally allowed to retake it once.

Students who have passed the qualifying examination must enroll each semester (excluding summer sessions) for dissertation credits. Once students have accumulated 90 credit hours in completed course work and dissertation credits, they may maintain continuous enrollment by enrolling in G901 for six credit hours at a cost of \$150. Students can enroll in G901 for no more than six semesters.

The department of Health Policy and Management will monitor the students' progress toward the PhD degree and will make recommendations to the University Graduate School regarding the nomination to candidacy, the appointment of a research committee, the defense of the dissertation, and the conferring of the PhD degree.

### **Dissertation**

The dissertation will be written on an original topic of research and presented as one of the final requirements for the Health Policy and Management PhD degree. The student's dissertation research committee will be comprised of members of the graduate faculty. The chair of the dissertation research committee must be a regular faculty member in the Department of Health Policy and Management, and a full member of the Graduate Faculty. The student will submit to the IUPUI Graduate Office, acting for the University Graduate School, a two-page prospectus of the dissertation research and the membership of the research committee at least six months before the defense of the dissertation.

After the committee has reviewed the dissertation, the decision to schedule the defense will be made. The student will then present and defend the dissertation orally in a public forum before the committee. Following the dissertation defense, all deficiencies must be adequately addressed to obtain approval by the dissertation research committee.

**Health Policy and Management Doctoral Program****Director:** Justin Blackburn, Ph.D.**Doctoral Minor in Health Policy and Management****Program E-mail:** [fsphinfo@iu.edu](mailto:fsphinfo@iu.edu)**Departmental URL:** <https://fsph.iupui.edu/academics/doctoral/minors/hpm.html>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

The IU Richard M. Fairbanks School of Public Health offers a PhD minor in Health Policy and Management that provides students with a foundation in the concepts and methods of health policy and management research. These concepts and methods draw on many disciplines, including economics, organizational theory and behavior, informatics, sociology, psychology, and statistics. Therefore, this minor is ideal for students from many schools including the IU Schools of Nursing, Dentistry, Medicine, Liberal Arts, Physical Education and Recreation, Health Rehabilitative Sciences, Law, and Public and Environmental Affairs. Students in other School of Public Health doctoral programs are also welcome in the minor.

The doctoral minor in Health Policy and Management is a rigorous, highly focused 12-credit hour minor that serves as a useful complement to many major areas of study. You will learn theoretical concepts and how to apply them. [Accomplished and research-productive faculty](#) in the Department of Health Policy and Management will serve as advisors and instructors for students choosing this minor. By completing this minor, you will be able to:

- Critically appraise research streams in healthcare management, health policy, and health services research and identify important new research questions.
- Understand foundational theories and concepts used in healthcare management, health policy, and health services research and apply them to novel research studies.
- Identify and understand the strengths and weaknesses of study designs frequently used in healthcare management, health policy, and health services research.
- Conduct quantitative and qualitative analyses to answer critical healthcare management, health policy, and health services research questions.

Students who wish to obtain a doctoral minor from the IU Richard M. Fairbanks School of Public Health must earn a grade of "B" or better in the coursework for the minor. Courses in which a grade of "B-" or lower is earned will not apply toward completion of the minor.

**Health Policy and Management Minor Curriculum**

Choose any four of the following 3-credit courses:

- PBHL-H 747 Health Policy and Management Research Seminar (may be taken up to 2 times on different topics)
- PBHL-H 786 Healthcare Organizations Research

- PBHL-H 781 Research Design in Health Policy and Management
- PBHL-H 782 Quantitative Methods in Health Policy and Management
- PBHL-H 783 Qualitative Methods in Health Services Research

Other courses may be taken if approved by the student's minor advisor.

**Faculty****Health Policy and Management Doctoral Program****Director:** Chris Harle, PhD[Health Policy and Management Faculty Directory](#)**Courses**

- **PBHL-B 551 Biostatistics for Public Health I (3 cr.)** This course introduces the basic principles and methods of data analysis in public health biostatistics. Emphasis is placed on concepts such as sampling, study design, descriptive statistics, probability, hypothesis testing, chi-square tests, t-tests, analysis of variance, linear regression and correlation. An introduction to SAS statistical software is part of this course.
- **PBHL-B 562 Biostatistics for Public Health II (3 cr.)** P: B551. This course introduces the advanced principles and methods of data analysis in public health biostatistics. Emphasis is placed on public health examples as they relate to concepts such as: Multiple regression, analysis of variance and covariance, logistic regression, nonparametric statistics, survival analysis, epidemiology statistics, and repeated measures analysis as they apply to public health practice.
- **PBHL-E 517 Fundamentals of Epidemiology (3 cr.)** This course will introduce students to basic epidemiologic concepts including determinants of health and patterns of disease in populations, population health descriptive techniques, use of health indicators and secondary data sources. Students will gain an understanding of the role of epidemiology in developing prevention strategies and policy. Among the topics to be covered are measures of mortality and morbidity, design and analysis of observational studies, community health assessment and program evaluation.
- **PBHL-E 606 Grant Writing for Public Health (3 cr.)** The course is open to all graduate students. The course will introduce the grant writing format and process and teach some grantsmanship. Student will have an opportunity to exercise the grant writing process
- **PBHL-E563 Systematic Reviews and Meta-analysis in Health Sciences (3 cr.)** This course provides graduate students with an overview of fundamental concepts and methods of systematic review and meta-analysis in health sciences. Principles and methods in conducting a systematic review and meta-analysis are illustrated through case studies of public health and clinical medicine, with emphasis on training students' practical skills in the conduct of systematic reviews and meta-analyses in various public health and clinical settings.

- **PBHL-E710 Advanced Public Health Survey Methods (3 cr.)** This course provides an intensive focus on the formative phases of health survey research methodology. Topics covered will include sampling methodologies, questionnaire development, testing, revision and administration, as well as topical discussions related to research ethics and real world challenges of research. Active learning will be emphasized, particularly through the development of a research proposal based on students' own research interests.
- **PBHL-H 501 U.S. Health Care Systems and Health Policy (3 cr.)** This course is designed to help students, particularly those interested in careers as public health leaders and health care managers, develop a better understanding of critical health policies and the health policy making process as well as the overall structure and key components of our health care system.
- **PBHL H514 Health Economics (3 cr.)** This course is designed to improve your knowledge of the important issues in health care (through an economic lens) and how quantitative (economic) information can be used in organizational decision making. The primary course objectives are that you develop:
  - 1) an appreciation of how health care markets operate, particularly how price acts as an allocation mechanism;
  - 2) skills in measuring and interpreting these economic relationships empirically, including the interpretation of regression equations.

- **PBHL-H 619 Health Economics for Public Health Professionals (3 cr.)** P: 3 cr. of undergraduate economics or permission of the instructor. This course examines the principles and application of economic analysis in the health field and the economist's approach to health care issues. It provides insights offered by economic analysis of specific health issues and problems.
- **PBHL-H641 Ethics in Public Health (3 cr.)** This course is an introduction to the role of ethics in population health-related programs, policymaking, professions and research. Because public health interventions focus on communities, as contrasted with individuals, they raise distinct and significant ethical questions from those raised in health services delivery (commonly addressed in fields such as medical ethics, bioethics and clinical ethics). A central question is: How should the rights of individuals be balanced against the protection or improvement of the health of the public? Through examination of current, historic and potential cases -- including infectious disease outbreaks and bioterrorism threats, community health impact assessments, soda portion restrictions, and international public health research and programs -- students will increase their understanding of the ethical and human rights concerns in public health. Students also will learn how to analyze local, national and international public health policies and programs using numerous ethics-based frameworks, and will be more empowered to be

critical contributors to the development, delivery and assessment of ethically sound public health interventions in their professional careers.

- **PBHL-H 644 Health Impact Assessment (3 cr.)** The goal of this course is to introduce students to the theoretical and practical aspects of health impact assessment (HIA) as a methodological tool in public health. HIA utilizes a variety of qualitative and quantitative methods and tools, designed to assess the potential health effects of a public policy, program, project, or initiative. While HIA is still an emerging practice in the United States, in Europe, Canada, and other areas of the world, the assessment of the public health impact of public decisions have been performed regularly to support policy decisions and promote conditions required for optimal health.
- **PBHL-H 657 Application of Cost-Effectiveness Analysis in Pub Health (3 cr.)** Cost-effectiveness analysis is widely used to evaluate the performance of public health interventions, programs and policies. In this course, students will learn to frame a conceptual model, to collect and synthesize data regarding "cost" and "effectiveness", to perform a cost-effectiveness (or cost-benefit) analysis, and to form policy and practice recommendations based on the analysis. Legal and ethical controversies surrounding cost-effectiveness analysis will be discussed.
- **PBHL-H 658 Health Policy and Program Evaluation (3 cr.)** P: S510. This course examines fundamental research methods used in the field of public health. The focus is on understanding how community in scientifically valid methods and how study results in daily fairly interpreted.
- **PBHL-H 670 Topics in Public Health (3 cr.)** This course is an introduction to the role of ethics in population health-related programs, policymaking, professions and research. Because public health interventions focus on communities, as contrasted with individuals, they raise distinct and significant ethical questions from those raised in health services delivery (commonly addressed in fields such as medical ethics, bioethics and clinical ethics).
- **PBHL-H 747 Health Policy and Management Research Seminar (12 cr.)** This course is the ongoing doctoral seminar for PhD students in Health Policy and Management (HPM) as well as those earning a PhD minor in HPM. The overarching objectives of this course is to train students to be more effective HPM researchers. This will involve improving skills in critically appraising, developing, and defending research studies in the field. These are broad skills that should continuously be improved throughout students' time in a PhD program. Thus, H747 is expected to be taken multiple times while in the program.
- **PBHL-H 751 Doctoral Readings in Health Policy and Management (1-3 cr.)** This course is designed to expose a PhD student to published material on a specific topic or technique related to their field of study in Health Policy and Management. The material to be studied will be determined primarily by the PhD student under the direction of a faculty

member with input from the student's concentration advisor. The PhD student is expected to work closely with the faculty member to develop a strategy to identify the material to study, plan a time frame for completion of the study and to determine the nature of the study product. Generally the product will be a summary and interpretation of the material studied in a literature review format. The PhD student and faculty member will complete a written agreement, which outlines the scope of work for the semester. The concentration advisor will also sign this agreement.

- **PBHL-H 752** Doctoral Research in Health Policy and Management (1-3 cr.) This course is designed to allow PhD students the opportunity to explore research questions by collecting data or using existing data related to their field of study in Health Policy and Management. The study topic will be determined primarily by the PhD student under the direction of a faculty member with input from the student's concentration advisor. The PhD student is expected to work closely with the faculty member to develop the study protocol, obtain IRB approval if necessary, obtain the data and collect the planned data analysis. The time frame for completion and the nature of the study product will be determined by the PhD student, faculty member and advisor.

Generally the product will be a manuscript for submission to an appropriate journal. The PhD student and faculty member will complete a written agreement, which outlines the scope of work for the semester. The concentration advisor will also sign this agreement.

- **PBHL-H 781** Research Design in Health Policy and Management Research (3 cr.) This doctoral-level course exposes PhD students to research designs commonly used in the health policy and management (HPM) literature. Topics covered will include overview of the research process, types of study designs including their benefits and drawbacks with a strong focus on causal inference designs developed in the field of economics and policy analysis. At the end of the semester, students should come away with an improved grasp of the interdisciplinary language of HPM research and a deeper appreciation of the importance of research design
- **PBHL-H 782** Health Services Empirical Methods (Quantitative Methods) (3 cr.) In this course, we will work towards your mastery of how to apply quantitative methods to theory-based, hypothesis-driven research. While the course will review quantitative methods useful to health services researchers, the emphasis will be on the practical application of such methods, including issues related to data management, the use of different software packages to implement such methods, and the effective presentation of quantitative findings to a variety of audiences. The final course deliverable will be an empirical analysis using national survey data to inform an issue of interest to the student.
- **PBHL-H 783** Qualitative Methods for Health Services Research (3 cr.) The objective of this course is to introduce doctoral students to qualitative research methods. More specifically, the course

will include 1) discussion of the various types of qualitative designs and methods, 2) practical applications of these methods, 3) critique of qualitative studies in the field of health services research and public health, and 4) the development of your own qualitative research ideas.

- **PBHL-H 786** Healthcare Organizations Research (3 cr.) This seminar is the introductory seminar for HPM doctoral students and should be taken in the first or second year of your graduate study. The broad goal of the course is to help you develop your skills in analytic reasoning, critical thinking, knowledge translation, and professional self-reflection necessary for a successful research career.
- **PBHL-H787** Health Policy Research (3 cr.) This course will provide students with time to prepare for the qualifying examination and prepare their dissertation prospectus. The prospectus includes the information required by the IUPUI Graduate Office.
- **PBHL-H799** Dissertation Proposal for PhD in Health Policy and Management (4 cr.) This course will provide students with time to prepare for the qualifying examination and prepare their dissertation prospectus. The prospectus includes the information required by the IUPUI Graduate Office.
- **PBHL-H 800** Doctoral Level Directed Study (1-12 cr.) The dissertation will be written on an original topic of research and presented as one of the final requirements for the PhD degree. The dissertation must be an original contribution to knowledge and of high scholarly merit. The candidate's research must reveal critical ability and powers of imagination and synthesis. The dissertation is written under the supervision of a research director and a research committee. The data used by the student may involve analysis of primary or secondary data.
- **PBHL-P506** Population and Public Health (3 cr.) Population health is the distribution of health outcomes within a population, the health determinants that influence distribution, and the policies and interventions that affect the The management of the health of a population requires attention to the multiple determinants of health including: medical care, public health, and the environment. As a key component of population health, this course provides a broad introduction to the principles and organization of public health.
- **PBHL-S 510** Introduction to Research Methods (3 cr.) This course examines fundamental research methods used in the field of public health. The focus is on understanding how community and clinical data are collected in scientifically valid methods and how study results are fairly interpreted. Students will learn how to critique published research to identify the strengths and limitations of the designs and approaches used, along with possible confounding factors and biases. Topics include components of research studies, including: justification for a research project, developments of research questions, selections of cases and controls, sampling methods, quantitative and qualitative data gathering techniques, project management,

and preparing data for analysis. Methods used to complete and interpret community-based needs assessments and program evaluations will be included.

- **PBHL-S615 Culture and Qualitative Methods (3 cr.)** This course provides learning opportunities for public health graduate students to develop an understanding of culture and of how qualitative methods – observations, focus groups, and in-depth interview research -- can be used to develop sensitivity to and an understanding of cultural practices. Such cultural sensitivities and competencies are basic to effective program planning, implementation, service delivery, and program evaluation. This class will provide important knowledge and opportunities related to public health practice in a community setting comprised of a multicultural population with differing health beliefs, values, behaviors and health care needs. By the end of the semester, the student will be able to define and distinguish the concepts of culture and traditions, acculturation and enculturation, traditionalism and modernism and will be able to begin to identify how to build on “best-practices” by incorporating local cultural practices in order to develop interventions aimed at and effective in influencing health behaviors. Further, the student will have active experience in conducting qualitative research in a community setting, including the opportunity to develop skills in conducting windshield surveys, participant observations, key informant interviews, and focus groups.
- **S725 Preparing for Academia in Public Health (1 cr)** This 1.0 credit seminar course will prepare advanced graduate students for the roles and responsibilities they may assume as faculty members. Course content will include an overview of the higher education culture and faculty expectations for teaching, research and service.

### Electives

## Health Systems and Services Research

**Richard M. Fairbanks School of Public Health**  
Program E-mail: [fsphinfo@iu.edu](mailto:fsphinfo@iu.edu)

Departmental URL: <https://fsph.iupui.edu/academics/doctoral/minors/health-systems.html>

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### Curriculum

Curriculum

### Doctoral Minor in Health Systems and Services Research

This minor provides a mix of substantive and methods courses in social science or related reference disciplines that are frequently drawn on by researchers who study health systems or health services.

The purpose of this minor is to provide PhD students with a new minor option that helps them develop conceptual and methodological depth in social science or related reference disciplines that are frequently drawn on by researchers who study health systems or health services, including Economics, Psychology, Sociology, Biostatistics, and Communication Studies. Because these areas of study often employ related concepts and methods, this minor will allow students to take minor courses that cut across departments and programs while still provide depth in a non-major area of study.

### Course Requirements

Students will complete 12 credits by choosing from the list of substantive and methods courses.

Students complete 1 or 2 of the following substantive courses:

#### Economics

- ECON E581 Applied Microeconomics I
- ECON E582 Applied Microeconomics II
- ECON E521 Microeconomics Theory
- ECON E583 Applied Macroeconomics

#### Psychology

- PSY 572 Organizational Psychology
- PSY 570 Staffing
- PSY-I 647 Attitudes and Social Cognition

#### Sociology

- SOC R515 Sociology of Health and Illness
- SOC R556 Advanced Sociological Theory I
- SOC R557 Advanced Sociological Theory II
- SOC R585 Social Aspects of Mental Health and Mental Illness
- SOC R560 Topics in Sociology

#### Communication Studies

- COMM C500 Advanced Communication Theory
- COMM C592 Advanced Health Communication
- COMM C528 Group Communication and Organizations

Students complete 2 or 3 of the following methods courses:

#### Econometric Methods

- ECON E570 Econometrics
- ECON E574 Times Series and Forecasting

#### Psychology Methods

- PSY 60800 Measurement Theory and the Interpretation of Data
- PSY I643 Field Methods and Experimentation
- PSY I583 Judgment and Decision Making in Organizations

#### Biostatistics and Epidemiology Methods

- PBHL E715 Design and Implementation of Observational Studies
- PBHL B585 Analysis and Interpretation of Observational Studies
- PBHL B 571 Biostatistics Method I-Linear Model in Public Health (4 cr)



- PBHL B 572 Biostatistics Method II-Categorical Data Analysis (4 cr)
- PBHL B 573 Biostatistics Method III-Applied Survival Data Analysis (4 cr)
- PBHL B 574 Biostatistics Method IV-Applied Longitudinal Data Analysis (3 cr)
- PBHL B 581 Biostatistics Computing
- B552 Fundamentals of Data Management
- PBHL B 582 Introduction to Clinical Trials

#### Other Social Science Methods

- OLS 53010 Mixed Methods Research
- E563 Systematic Review and Meta-Analysis in Health Sciences

## History

### School of Liberal Arts

Departmental E-mail: [history@iupui.edu](mailto:history@iupui.edu)

Departmental URL: <http://liberalarts.iupui.edu/history/>

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### Curriculum

#### Degrees Offered

Master of Arts in History, Dual Master of Arts in History and Master of Library Science, Dual Master of Arts in History and Master of Arts in Philanthropic Studies, as well as a Ph.D. minor

The M.A. program in History on the Indianapolis campus offers three areas of concentration: United States history, European history, and public history. United States and European history are traditional areas of concentration and will serve the needs of persons intending to pursue a doctoral program, those seeking a collateral degree to complement other fields such as education or library science, and individuals seeking personal fulfillment. Public history is designed to prepare persons interested in pursuing careers as historians in such settings as historical societies, museums, historic preservation organizations, historic parks, governmental agencies, and business corporations. With its proximity to a large number of such institutions, the Indianapolis campus is an ideal location at which to pursue a degree in public history.

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

### Master of Arts Degree

#### Admission Requirements

1. Bachelor's degree from an accredited college or university, with an overall undergraduate grade point average of at least 3.0 (B) and a minimum grade point average of 3.3 (B+) in the student's undergraduate major; an undergraduate major in history is not required, but applicants without such a background may be required to take additional coursework in history at the undergraduate level as a condition for acceptance into the program;

2. Appropriate level of achievement on the Graduate Record Examination (GRE) General Test (applicants with a post-graduate degree should consult with the Director of Graduate Studies to determine whether they are required to submit GRE scores); and
3. Three letters of recommendation.

### Foreign Language

There is no foreign language requirement for the degree per se. However, those students who will incorporate foreign language documents in their graduate work (especially those concentrating on European history) will be expected to translate non-English sources. They must therefore demonstrate an appropriate level of competence in the relevant language before they begin work on their thesis. The Director of Graduate Studies and the student's thesis advisor may require the student to take additional coursework.

All students concentrating in European history should expect to demonstrate competence in a foreign language, ideally upon application to the program. (Competence is defined as two years of undergraduate coursework with a grade of B or better in the final semester, or demonstration of an equivalent reading proficiency in an approved foreign language exam.). Students considering the possibility of going on for a Ph.D. should recognize that competence in at least one and sometimes two foreign languages is often a requirement in history doctoral programs.

### Grades

No grade below B- (2.7) in graduate courses will be counted toward this degree.

### Course Requirements

Students pursuing any one of the three concentration areas must take HIST-H 501. With the consent of the Director of Graduate Studies, students may take as many as six (6) credits of electives outside the Department of History.

Those electing United States history must take at least one graduate colloquium and one graduate seminar in United States history and at least one graduate course in non-United States history. Students electing European history must take a graduate colloquium and seminar in that area and at least one graduate history course outside European history. Six (6) credits of H 898 will be granted upon successful completion of the required master's thesis. A total of 30 credit hours is required for students concentrating in United States or in European history. With the permission of the Director of Graduate Studies, HIST-H 500 (when offered) may be substituted for HIST-H 501.

Students choosing public history as their area of concentration must take (1) HIST-H 542, (2) a colloquium, (3) a seminar, and (4) enroll in HIST-H 543 and do an internship. Four (4) credits will be granted upon satisfactory completion of the internship project. Public history students must also take at least one graduate course outside their area of regional concentration. Two (2) credits of H 898 will be granted upon successful completion of the required master's thesis. A minimum of 36 credit hours is required for students concentrating in public history.

Students admitted to the program after completing courses "graduate non-degree" will be allowed, at the discretion of the Director of Graduate Studies, to transfer up to three (3) graduate-level courses (9-12 credit hours) toward their degree requirements.

With the permission of the Director of Graduate Studies, it may be possible to transfer up to eight (8) graduate credits from another university.

Indiana University's Graduate School limits the total number of credits that can be taken outside the History master's program to 12 credits.

A grade of B (3.0) or higher must have been earned in any course for which a transfer of credit is being requested.

### **Dual Degree: Master of Arts in History and a Master of Library Science**

Admission requirements for the dual degree program are identical to those for each program separately. A separate application must be made to each of the programs. Prospective students are expected to take responsibility for learning about and meeting the different admission requirements and deadlines of each department. A student enrolled in one program may apply for admission to the other program; Indiana University Graduate School policy requires that a student apply for the dual degree option within the first year of enrollment. The M.L.S. degree is awarded only in May, June, August, and December; the History M.A. must be awarded at the same time as the M.L.S.

Study for these two degrees can be combined for a total of 53 credit hours rather than the 66 credit hours required for the two degrees if taken separately. Students take 23 credit hours in history, which must include Archives & Records Management (3 cr.) (taken as HIST-H 547), one graduate colloquium, and one graduate seminar. No thesis is required for students earning an M.A. degree in history who are also earning a Master of Library Science (M.L.S.) under this dual degree program. No area of concentration is required, but students wishing to focus on public history for the M.A. in history must also include HIST-H 542 among the required 23 credits of graduate history coursework. Such students may, if they wish, do a public history internship and count a maximum of two (2) credit hours of HIST-H 543 toward the degree. Students may enroll in HIST-H 543 only after having taken (or while taking) HIST-H 542.

The remaining 30 credit hours are taken in the Department of Library and Information Science (IUPUI).

### **Dual Degree: Master of Arts in History and Master of Arts in Philanthropic Studies**

The dual M.A. in History and Philanthropic Studies creates a unique opportunity to pursue critical inquiry into the historical, cultural, philosophical, and economic implications of voluntary action for the public good. Historians routinely study the role of nonprofit organizations, self-help groups, and philanthropic institutions. This dual degree program offers an interdisciplinary focus on the past, present, and future. This degree will be attractive to students wishing to pursue (1) careers that demand the skills and talents developed by cross-training in history and philanthropic studies; or (2) doctoral programs that encourage new and creative

approaches to the historical study of philanthropy, broadly defined.

Admission requirements for the dual degree program are identical to those for each program separately. A separate application must be made to each of the programs. Prospective students are expected to take responsibility for learning about and meeting the different admission requirements and deadlines for each program. A student enrolled in one program may apply for admission to the other program; Indiana University Graduate School policy requires that the application to the second program be initiated during the first year of enrollment in the first program. The degrees must be awarded at the same time (month and year).

Students must make plans early with advisors in both programs to identify (1) common courses and (2) a thesis topic. Study for these two degrees can be combined for a total of 51 credit hours (U.S. or European History concentration) or 54 credit hours (Public History concentration) rather than the 66 or 72 credit hours, respectively, that would be required if the two degrees were taken separately. Students are required to take a history of philanthropy course (generally either HIST-H 516 or PHST 515); credit hours for that class are applied towards the Philanthropic Studies side of the degree. For the History side of the degree, students in all concentrations must take HIST-H 501, Methodology; a 600-level colloquium; a 700-level seminar; and a 500-level (or higher) history course outside the area of geographic concentration. A common thesis meets the requirements of both programs.

Students with a concentration in U.S. or European History will take a 500-level (or higher) history course inside their geographic concentration and 3 credits of HIST-H 898 (thesis credits) for a total of 21 credits in History; the remaining 30 credits will be taken in Philanthropic Studies for a total of 51 credit hours.

Students with a concentration in Public History will take HIST-H 542, the Practice of Public History; 3 credits of HIST-H 543, the Practicum in Public History; a 500-level (or higher) history course inside their geographic concentration or HIST-H 547, topics in public history; and 2 credits of HIST-H 898 (thesis credits) for a total of 27 credits in History; the remaining 27 credits will be taken in Philanthropic Studies for a total of 54 credit hours.

Questions about the degree should be directed to the History Department's Director of Graduate Studies and/or the Lilly Family School of Philanthropy's Director of Master's Degree Programs.

### **Ph.D. Minor in History**

Doctoral students in other departments or schools may minor in history by completing, with a grade point average no lower than B (3.0), at least 12 credit hours of graduate coursework in history. A minimum of six (6) credit hours must be taken on the Indianapolis campus. This coursework shall include:

- HIST-H 501 Historical Methodology (4 cr.)
- Either a 600-level colloquium (e.g., HIST-H 620, H 650, H 699) (4 cr.) or a 700-level seminar (e.g., HIST-H 720, H 750) (4 cr.)

- At least four (4) additional credit hours, which may include a maximum of three (3) credits of HIST- H 575 Graduate Readings in History

### Certificate in Professional Editing

See the section titled "Professional Editing" for more information.

### Certificate in Museum Studies

See the section titled "Museum Studies" for more information.

## Faculty

### Chair

Professor Ch. Didier Gondola

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Mary O'Brien Gibson Professor

John R. Kaufman-McKivigan\*

### Professors

Robert G. Barrows (Emeritus), David J. Bodenhamer\*, Miriam Langsam (Emerita), Ch. Didier Gondola, Ralph Gray (Emeritus), Raymond Haberski Jr.\*, Eric L. Saak, Philip V. Scarpino\*, William H. Schneider (Emeritus), Peter Sehlinger (Emeritus), Mary Seldon (Emerita), Jan Shipp (Emerita), Marianne S. Wokeck (Emerita)

### Associate Professors

Kevin Cramer, Kenneth Cutler (Emeritus), Jennifer Guiliano, Sabine Jessner (Emerita), Jason Kelly, Daniella J. Kostroun, Justin Libby (Emeritus), Modupe Labode, Monroe H. Little Jr. (Emeritus), Elizabeth Brand Monroe, Kevin C. Robbins, Nancy Marie Robertson\*, Rebecca K. Shrum, Michael Snodgrass, Xin Zhang

### Assistant Professors

Sheila Cooper (Emerita)

### Senior Lecturer

Anita Morgan, Erik Lindseth

### Adjunct Professor

Philip Goff (Religious Studies), Elizabeth Kryder-Reid\* (Anthropology and Museum Studies)

### Director of Graduate Studies

Contact History@iupui.edu or TeamGrad@iupui.edu

### Director of the Public History Program

Professor Philip V. Scarpino. CA-532, 317-274-5983, pscarpin@iupui.edu

## Courses

- **HIST-H 500 History of Historical Thought (4 cr.)** Approaches to the historian's craft and reflections on history as a type of scholarly thinking. Recommended for new graduate students

and others interested in history as a branch of knowledge.

- **HIST-H 501 Historical Methodology (4 cr.)** Discussion and application of the various methods and strategies used in historical research, toward the goal of developing a research design for the thesis.
- **HIST-H 509 Special Topics in European History (3 cr.)** Intensive study and analysis of special topics in history of Europe. Topics will vary from semester to semester. It may be repeated with different topics.
- **HIST-H 511 Special Topics in United States History (3 cr.)** Intensive study and analysis of selected topics in United States history. Topics will vary from semester to semester. It may be repeated with different topics.
- **HIST-H 516 History of Philanthropy in the United States (3 cr.)** Approaches philanthropy as a social relation between various groups and looks at issues ranging from the relation between government and the economy to African-American activism to women's roles. The course explores past and current debates about such issues to analyze the past, understand the present, and shape the future.
- **HIST-H 518 History of International Humanitarian Assistance (3 cr.)** This course covers the history of international humanitarian assistance during the nineteenth and twentieth centuries. Its focus is on the movements and activities that developed in wealthier countries (Europe and the U.S.) which attempted to help those in other lands in need of assistance (e.g., food, shelter, medical care), as a result of a variety of causes, both natural and man-made, such as famine, flood, epidemics, earthquakes, and volcanoes as well as wars and government oppression. The responses took many forms, governmental and nongovernmental, in a world that underwent very dramatic changes during the nineteenth and twentieth centuries.
- **HIST-H 521 Special Topics in African, Asian, or Latin American History (3 cr.)** Intensive study and analysis of selected topics in African, Asian, or Latin American history. Topics will vary from semester to semester, e.g., traditional Asia, modern Asia, Latin American intellectual history. It may be repeated with different topics.
- **HIST-H 542 Public History (4 cr.)** The application of history to public needs and public programs. Historic preservation, archival management, oral history, editing, public humanities programming, historical societies, etc.
- **HIST-H 543\*\* Practicum in Public History (1-4 cr.)** Internships in public history programs, fieldwork, or research in the historical antecedents of contemporary problems. Students may enroll in HIST-H 543 only after having taken (or while taking) HIST-H 542.
- **HIST-H 546 History of Science, Medicine, and Technology (3 cr.)** Study of topics in the history of science, medicine, and technology. It may be repeated (with different topics) with the permission of the Director of Graduate Studies.
- **HIST-H 547 Special Topics in Public History (3 cr.)** Intensive study and analysis of selected topics in public history. Topics will vary from semester

to semester, e.g., to include historic preservation, material culture, archival practice, local & community history, and historical editing. It may be repeated with different topics.

- **HIST-H 548 Historical Administration (3 cr.)** This course presents an overview of issues faced by administrators and mid-level managers who work in museums, historical societies, archives, special collection libraries, and other cultural resource agencies. Topics, speakers, and readings are focused on issues that are unique to agencies that collect, preserve, and interpret historical resources.
- **HIST-H 575 Graduate Readings in History\*\* (arr cr.)** A maximum of three (3) credits total of HIST-H 575 may be applied toward the M.A. in History.
- **HIST-T 500 Topics in History (1-3 cr.) Intensive study and analysis of selected historical issues and problems of a limited scope from the perspective of social and historical studies. Topics will vary, but ordinarily cut across fields, regions, and periods. It may be repeated with different topics.**

### Colloquia

These courses are of seminar size and involve oral and written study of the problems, bibliographies, interpretations, and research trends in the fields with which they respectively deal. They are the chief means by which a student becomes knowledgeable in history at a professional level. Any of them may be taken more than once, upon approval of the Director of Graduate Studies.

- **HIST-H 615 Colloquium: Early Modern Western European History (4 cr.)**
- **HIST-H 620 Colloquium: Modern Western European History (4 cr.)**
- **HIST-H 630 Colloquium: British History (4 cr.)**
- **HIST-H 650 Colloquium: United States History (4 cr.)**
- **HIST-H 699 Colloquium: Comparative History (4 cr.)**

### Seminars

These courses involve research at a mature level with primary sources in specialized topics and problems in the field with which they respectively deal. They train the student in historical scholarship. Any of them may be taken more than once, upon approval of the Director of Graduate Studies.

- **HIST-H 715 Seminar: Early Modern European History (4 cr.)**
- **HIST-H 720 Seminar: Modern Western European History (4 cr.)**
- **HIST-H 723 Seminar: British History (4 cr.)**
- **HIST-H 750 Seminar in United States History (4 cr.)**

### Thesis

- **HIST-H 898 M.A. Thesis\*\* (1-6 cr.)**
- **HIST-G 598 History Thesis Research\*\* (0 cr.)** A. students who have completed all requirements for the degree except for the thesis may enroll in this course. Permission of the Director of Graduate Studies is required.

\*\*These courses are eligible for a deferred grade.

## Informatics and Computing

**School URL:** [soic.iupui.edu](http://soic.iupui.edu)

**School E-mail:** [soicindy@iupui.edu](mailto:soicindy@iupui.edu)

### Curriculum

(When conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff only use those requirements contained in the *University Graduate School Bulletin*.)

### Ph.D. in Informatics

The Indiana University School of Informatics and Computing, the first of its kind in the country, was created as a place where innovative multidisciplinary programs could thrive, a program where students can apply the skills of information technology to a range of other fields.

For current information and specific requirements, refer to [soic.iupui.edu](http://soic.iupui.edu).

All Ph.D. candidates must meet with their academic or research advisor for course selection and plan of study.

### Program of Study

Students in the Informatics doctoral program explore the connections among information technology, theory, social analysis, and application domains in a diverse and multidisciplinary curriculum. This curriculum includes core courses and seminars in Informatics and its specialization in Bioinformatics, Health and Biomedical Informatics, or Human-Computer Interaction; courses in methods and theory; and electives in related disciplines inside and outside of the School leading to a Ph.D. minor; and a dissertation. In addition, students are encouraged to pursue internships as part of their elective courses or independent studies.

### Bioinformatics Specialization

A minimum of 90 credit hours are required for the degree. The 90 credit hours consist of the following:

Qualifying Courses (15 credit hours):

- INFO-B 519 Introduction to Bioinformatics
- INFO-B 528 Computational Methods for Analyzing High-Throughput Biological Data
- INFO-B 529 Machine Learning in Bioinformatics
- INFO-B 556 Biological Database Management
- INFO-I 590 Statistical Methods in Bioinformatics

Required Core Courses (12 credit hours):

- CSCI 59000 Algorithms in Bioinformatics
- INFO-B 627 Advanced Seminar I in Bioinformatics
- INFO-B 637 Advanced Seminar II in Bioinformatics
- INFO-I 790 Research Rotation/Independent Study

Advanced Core Courses (15 credit hours):

- CSCI 59000 Algorithms in Bioinformatics
- INFO-I 600 Professionalism and Pedagogy in Informatics
- INFO-B 627 Advanced Seminar I in Bioinformatics
- INFO-B 637 Advanced Seminar II in Bioinformatics
- INFO-I 790 Research Rotation/Independent Study



**Elective Core Courses (15 credit hours):**

Choose from the following:

- INFO-B506 Biomedical Informatics
- INFO-B 536 Computational Methods in Biomedical Informatics
- INFO-I590 Next Generation Sequencing
- INFO-B 619 Structural Bioinformatics
- INFO-B 646 Computational System Biology
- INFO-B 656 Translational Bioinformatics Applications
- INFO-B 636 Genomic Data Analytics and Precision Medicine
- INFO-B 585 Analysis of Biomedical Data
- Other course approved by advisor

**Minor and Electives (18 credit hours)**

- Minor (12–15 credit hours)
- Students may take over electives (subject to approval) at the graduate level as needed for their research

**Dissertation (30 credit hours):**

- INFO-I 890 Thesis Readings and Research

**Areas of Specialization**

Faculty research projects often involve representatives from several different research areas working together to develop innovative and even revolutionary new solutions. While students can expect to concentrate in particular areas, they are also expected to explore the broader significance of their work and ways that their expertise can be leveraged to solve problems outside of their own domains.

**Areas of Research**

Protein structure and function prediction, comparative genomics, structural genomics, fragment assembly in DNA sequencing, systems biology, models of evolution, molecular modeling, drug design, machine learning algorithms, biological database integration, data mining, and biomedical text mining.

**Health and Biomedical Informatics Program Specialization**

A minimum of 90 credit hours are required for the degree. The 90 credit hours will consist of the following:

**Core Courses (24 credit hours):**

- INFO-I 501 Introduction to Informatics
- INFO-B 530 Foundations of Health Informatics
- INFO-B 535 Clinical Information Systems
- INFO-I 575 Informatics Research Design
- INFO-B 581 Health Informatics Standards and Terminology
- INFO-B 585 Biomedical Analytics
- INFO-B 642 Clinical Decision Support Systems
- INFO-B518 Applied Statistical Methods for Biomedical Informatics

**Ph.D. Specific Courses (12 credit hours):**

- GRAD-G 660 Clinical Research Methods
- INFO-B 667 Seminar in Interprofessional Informatics
- INFO-B 668 Seminar in BioHealth

- PBHL-B 652 Biostatistics for Public Health II

**Research Rotation (6 credit hours):**

- INFO-I 790 Informatics Research Rotation (taken twice)

**Electives (6–15 credit hours)****Minor (12 credit hours)****Dissertation (21–20 credit hours):**

- INFO-I 890 Thesis Readings and Research

**Areas of Specialization**

Faculty research projects often involve representatives from several different research areas working together to develop innovative and even revolutionary new solutions. While students can expect to concentrate in particular areas, they will also be expected to explore the broader significance of their work and ways that their expertise can be leveraged to solve problems outside of their own domains.

**Areas of Research**

Electronic medical records, health data exchange, standards and terminology for health data, clinical decision support, consumer health informatics, technology to enhance patient safety, health application development and implementation, cost reimbursement and integrated health information systems. The Health and Biomedical Informatics program has joint projects with the Veteran Administration Medical Center, Regenstrief Institute, Clarian Health, Methodist Hospital, St. Vincent Hospital, Community Health Network, St. Francis Hospitals, IU School of Medicine, and other local health care systems.

**Human-Computer Interaction Specialization**

A minimum of 90 credit hours are required for the degree. The 90 credit hours will consist of the following:

**Core Cores (18 credit hours):**

- INFO-H 541 Interaction Design Practice
- INFO-H 564 Prototyping for Interactive Systems
- INFO-H 624 Advanced Seminar I in Human-Computer Interaction
- INFO-H 634 Advanced Seminar II in Human-Computer Interaction
- Two HCI Research Area Selectives (6 credit hours total)

**Methods Courses (18 credit hours):**

- INFO-I 575 Informatics Research Design
- INFO-I 790 Informatics Research Rotation (taken three times, 9 credit hours total)
- Two Methods Electives (6 credit hours total)

**Specialization (18 credit hours):**

- Minor (12–18 credit hours)
- Disciplinary Affinities (0–6 credit hour colloquia series and/or electives)

**Dissertation (36 credit hours)**

- INFO-I 890 Thesis Readings and Research

**Areas of Specialization**



Faculty research projects often involve representatives from several different research areas working together to develop innovative and even revolutionary new solutions. While students can expect to concentrate in particular areas, they will also be expected to explore the broader significance of their work and ways that their expertise can be leveraged to solve problems outside of their own domains.

### Areas of Research

Because HCI is a multidisciplinary discipline, students are encouraged to expand the scope of their research to cross-traditional disciplinary boundaries into such areas as human-centered design, accessible computing, ubiquitous computing, social computing, related areas within digital media applications such as gaming and virtual reality research, computer-mediated communication, usability engineering, health informatics, information visualization, biomedical informatics, android science, social robotics, sensorimotor representation, symbol grounding and symbol emergence, computational neuroscience, and so on.

### Ph.D. in Data Science

The data science doctoral program prepares graduate students to develop and evaluate novel approaches to collecting, organizing, managing, and extracting knowledge and insights from massive, complex, distributed, heterogeneous datasets.

A minimum of 90 credit hours are required for the degree. The 90 credit hours will consist of the following:

Core Courses (24 credit hours):

- INFO-I 501 Introduction to Informatics
- LIS-S 511 Database Design (3 cr.) or CSCI 54100 Database Systems
- STAT 51100 Statistical Methods I or higher (requires approval)
- INFO-H 515 Introduction to Data Analytics or CSCI 57300 Data Mining
- INFO-H 516 Applied Cloud Computing for Data Intensive Sciences or CSCI 59000 Cloud Computing
- INFO-H 517 Visualization Design, Analysis, and Evaluation or CSCI 55200 Data Visualization
- LIS-S 541 Information Policy
- INFO-I 575 Informatics Research Design

Methods Courses (18 credit hours)

May include up to 6 credit hours of INFO-I 790 Informatics Research Rotation

Specialization (18 credit hours):

- Minor (12–18 credit hours)
- Disciplinary Affinities (0–6 credit hour colloquia series and/or electives)

Dissertation (30 credit hours)

- INFO-I 890 Thesis Readings and Research

Requirements for all Ph.D. Programs

### Minor

The student must have an appropriate minor from a unit at IUPUI or IU, Bloomington other than the

Data Science program. Minors are selected with the advisor's recommendation. The selected minor should be appropriate for the student's choice of subdiscipline. Examples of minors include biology or bioinformatics, biostatistics, chemistry or chemistry informatics, health and biomedical informatics, cognitive psychology, computer science, information science, social and behavioral sciences, or sociology. The number of hours to be included in the minor will be consistent with the requirements of the unit granting the minor. Some of the courses in the minor may also count toward the methods requirement.

### Qualifying Examination, Written and Oral

A student must successfully complete a written and oral qualifying examination before the fifth semester of the program. The written exam has a breadth part and a depth part. The breadth part covers the program's core courses. The depth part additionally covers material from the student's research.

The oral exam takes place shortly after the student passes the written exam. The oral exam is based on the student's response to the written exam and the core courses. The both the written and oral exams are prepared and evaluated by faculty in the school who are familiar with the content of the core courses.

The student must pass both the written exam and the oral exam before advancing to candidacy. The student may retake once either the written exam or oral exam, but not both, if they do not pass that part on the first attempt. For further details, consult with the data science program director. After successful completion of the core courses and qualifying exam, the student advances to candidacy for the Ph.D. degree.

### Dissertation Proposal and Defense

The dissertation defense is an oral review of the student's in-depth knowledge of primary research area and the research proposal for the dissertation. The dissertation proposal must be approved by the student's research committee, constituted by members of the Graduate Faculty who have expertise relevant to judging the student's research. That committee may have the same membership as the advisory committee or different members. The advisor for the dissertation must be endorsed by the Graduate School to chair doctoral dissertation committees. The majority of the three or more members of the committee should be from the School of Informatics and Computing and at least one member must be from outside of the school. The student will defend the thesis proposal at a public colloquium in the school. The defense should be completed within one year of passing the Qualifying Examination.

### Dissertation

The student must present a written elaboration of significant original research to the research committee in a public defense as described in the Graduate School Bulletin.

### Ph.D. Minors

#### Ph.D. Minor in Applied Data Science

The Ph.D. minor in Applied Data Science offers doctoral students in other disciplines the opportunity to learn data science approaches and apply them to problems in

their major. Data science is now applied to every field. Data science concepts and approaches are required of researchers who collect, curate, manage, analyze, and visualize the big data found in massive, complex, diverse, and distributed repositories.

The Ph.D. minor in Applied Data Science is a 12-credit hour program comprising four 3-credit hour courses.

Required courses: INFO-H 515, INFO-H 516, and INFO-H 517. Specialization course: choose in consultation with the minor advisor

### Admission Requirements

To be admitted to the Ph.D. Minor, the applicant must be currently enrolled at IUPUI or IU, Bloomington in a doctoral program other than Data Science. The student must also be in good academic standing and possess knowledge and skills in calculus, linear algebra, and programming. Prerequisites include a graduate course in inferential statistics (3 cr.) and a graduate course in databases (3 cr.).

### Ph.D. Minor in Bioinformatics

Bioinformatics gathers knowledge and information from various fields such as informatics, chemistry, computer science, medicine, and biology. Students in relevant Ph.D. programs such as biochemistry and molecular biology, medical and molecular genetics, medicine, chemistry, or biology are the target audience for the Ph.D. minor in bioinformatics.

The Ph.D. minor in Bioinformatics is a 12 credit hour program comprised of four (4) courses each of which is 3 credit hours.

Required course: INFO-B 519, Specialization courses (choose three): INFO-B 528, INFO-B 529, INFO-B 556, INFO-B 573, INFO-I 590 Next Generation Sequencing, INFO-B 619, INFO-B 646, INFO-B 656, GRDM-G 848

### Admission Requirements

The graduate bioinformatics courses in the School of Informatics and Computing assume a minimal knowledge of cell and molecular biology. That level of understanding could be gained with at least 6 undergraduate credit hours in molecular biology, genetics, or evolution. They also assume a minimal knowledge of programming, databases, and statistics. That level of understanding could be gained with 3 to 9 credit hours of undergraduate or graduate courses in these areas.

### Ph.D. Minor in Health and Biomedical Informatics

The purpose of the minor is to provide opportunities for current Indiana University or Purdue University doctoral students in other disciplines at IUPUI to learn and use Health and Biomedical Informatics approaches to solve problems that arise in their academic fields. This program serves the needs of the Schools of Dentistry, Nursing, Medicine, Public Health, and Science by providing data and information science knowledge and skills in support of problem-solving across multiple health-related domains.

The Ph.D. minor in Health and Biomedical Informatics requires coursework totaling 12 credit hour program comprising four 3-credit hour courses.

These must include the following core courses: INFO-B 530, INFO-B 535, INFO-B 581, and INFO-B 642.

### Admission Requirements

Applicants are required to have background in Information Technology and Healthcare (or the equivalent).

### Ph.D. Minor in Human-Computer Interaction

The purpose of the Ph.D. minor in the HCI Program is to enable current Indiana University and Purdue University doctoral students in other disciplines at IUPUI to learn, apply, and use human-computer interaction (HCI) theories, principles, and tools to address and study problems in their respective academic fields.

The Ph.D. minor in HCI is a 12 credit hour program comprising four 3-credit hour courses.

Required courses: INFO-H 541, INFO-H 543, and INFO-H 563. One additional course, selected from the following list, is required: INFO-H 517, INFO-H 561, INFO-H 564, INFO-H 565, INFO-H 566, INFO-H 624, or INFO-H 634.

### Grading Policy for all Ph.D. minors

A minimum of B (3.0) is required in each course that is to count toward the minor. If a minimum of B (3.0) is not earned in a course, that course must be retaken. A course may only be retaken once. Students who fail to achieve the minimum grade of B (3.0) the second time they take a course will not be able to earn the Ph.D. minor.

### Faculty

#### Executive Associate Dean

Matthew J. Palakal\*

#### Associate Dean of Academic Affairs

Karl F. MacDorman\*

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Keith Dunker\* (Emeritus), Sara Anne Hook, Steven Mannheimer, Mathew Palakal\*

### Associate Professors

Rachel Applegate\*, Davide Bolchini\*, Andrea Copeland\*, Joseph Defazio\*, Garland C. Elmore (Emeritus), Edgar Huang\*, Sarath Chandra Janga\*, Josette Jones\*, Xiaowen Liu\*, Karl F. MacDorman\*, Huanmei Wu\*

### Assistant Professors

Erin Brady\*, Francesco Cafaro\*, Sunandan Chakraborty\*, Lynn Dombrowski\*, Richard Holden\*, Kyle Jones\*, Aqueasha Martin-Hammond\*, Andrew Miller\*, Angela Murillo, Saptarshi Purkayastha\*, Khairi Reda\*, Jingwen Yan\*, Alyson Young\*, Ayoung Yoon\*

### Courses

- **INFO-H 500 Fundamental Computer Concepts in Informatics (3 cr.)** An introduction to fundamental principles of computer concepts for Informatics

study, including an overview of computer architecture, computer algorithms, fundamentals of operating systems, data structure, file organization and database concepts. This course is expected to impart the required level of competency in computer science. It may be waived in lieu of six undergraduate credit hours of computer science or informatics coursework, covering areas of programming, discrete structures, and data structures. **Not currently being offered.**

- **INFO-I 501 Introduction to Informatics (3 cr.)**P: Graduate standing. Basic information representation and processing; searching and organization; evaluation and analysis of information. Internet-based information access tools; ethics and economics of information sharing.
- **INFO-H 502 Human-Centered Research Methods in Informatics (3 cr.)**This course surveys a broad range of research methods employed in Informatics, exploring their meta-theoretical underpinnings and exemplifying their application to specific research questions. This course is intended for students in Informatics graduate programs, especially PhD students, who need a grounding in research methods. **Not currently being offered.**
- **INFO-H 503 Social Impact of Information Technologies (3 cr.)**An overview of important social, legal, and ethical issues raised by information technology. **Not currently being offered.**
- **INFO-H 504 Social Dimensions of Science Informatics (3 cr.)**Course will examine ethical, legal, and social issues surrounding contemporary research and practice in science informatics. Topics include the nature of science and technology, the ramifications of recent advances in science informatics, and relevant science policy and research ethics. General knowledge of science informatics is assumed.
- **INFO-B 505 Informatics Project Management (3 cr.)**This is a professional introduction to informatics project management and organizational implementation of integrated information solutions. The target audience is informatics project team members likely to pursue informatics project manager roles as well as all members not likely to do so. Through reading, lecture, discussion, practice, and targeted projects, students gain historical perspectives, current awareness, and proficiency with informatics project management terminology, techniques, and technologies.
- **INFO-B 506 Biomedical Informatics (3 cr.)** The course covers the latest biomedical informatics concepts, technologies, policies, and skills, including infrastructure and data management, image analytics, visualization, and API design and implementation for healthcare. Students analyze healthcare and biomedical information, infer the outcomes of data processing and analysis, and master the tools required for biomedical data analytics.
- **INFO-H 506 Globalization and Information (3 cr.)**Explores the processes that promote and impede movement of human action and informational activities to the most general levels, e.g., the level of the world as a whole. Surveys

diverse theories of globalization to identify the best approaches for professional informatics career planning and making information globally accessible.

- **INFO-B 509 Fundamentals of Clinical Care for Health Informatics (3 cr.)** This course is an introduction to the concepts, principles, problems, and practices that define the U.S. healthcare system. Topics include health and health status, elements of the healthcare delivery system, healthcare facilities and professions, healthcare financing and regulation, ethics in healthcare and overarching policy issues. This course enables health informatics students who do not have medical backgrounds to work within the U.S. healthcare system and communicate with clinicians and providers by developing a fundamental understanding of the healthcare system, processes for delivering healthcare, clinical decision-making, and basic principles of evidence-based practice.
- **INFO-B 510 Data Acquisition and Laboratory Automation (3 cr.)**This course covers the entire process by which signals from laboratory instruments are turned into useful data: (1) fundamentals of signal conditioning and sampling; (2) interfacing, communications and data transfer; (3) markup languages and capability systems datasets; (4) general lab automation; (5) robotics. A significant portion of this course is devoted to practical learning using LabVIEW.
- **INFO-B 511 Laboratory Information Management Systems for Health and Life Sciences (3 cr.)**
- **INFO-B 512 Scientific and Clinical Data Management (3 cr.)** Management and mining of data generated in scientific laboratories and clinical trials for data mining and knowledge discovery requires robust solutions that include knowledge discovery techniques and databases, extraction of data/metadata stored in data warehouses that use Storage area Networks and dealing with security issues of handling this data.
- **INFO-B 513 The Design, Implementation, and Evaluation of Electronic Health Record Systems (3 cr.)**
- **INFO-H 515 Introduction to Data Analytics (3 cr.)**This course applies statistical learning methods for data mining and inferential and predictive analytics to informatics-related fields. The course also introduces techniques for exploring and visualizing data, assessing model accuracy, and weighing the merits of different methods for a given real-world application. This course provides an essential toolset for transforming large, complex informatics datasets into actionable knowledge.
- **INFO-H 516 Applied Cloud Computing for Data Intensive Sciences (3 cr.)** This course covers data science concepts, techniques, and tools to support big data analytics, including cloud computing, parallel algorithms, nonrelational databases, and high-level language support. The course applies the MapReduce programming model and virtual-machine utility computing environments to data-driven discovery and scalable data processing for scientific applications.
- **INFO-H 517 Visualization Design, Analysis, and Evaluation (3 cr.)** This is an introductory course in design and evaluation of interactive

visualizations for data analysis. Topics include human visual perception, visualization design, interaction techniques, and evaluation methods. Students develop projects to create their own web-based visualizations and develop competence to undertake independent research in visualization and visual analytics.

- **INFO-B 518 Applied Statistical Methods for Biomedical Informatics (3 cr.)** The ability to understand, analyze, and interpret biomedical data is integral to biomedicine. This course provides in-demand data analysis skills and hands-on experience in analyzing genomic, proteomic, and health data. Students solve cutting-edge biomedical problems by applying statistical methods, packages, and toolkits.
- **INFO-B 519 Introduction to Bioinformatics (3 cr.)** Sequence alignment and assembly; RNA structure, protein and molecular modeling; genomics and proteomics; gene prediction; phylogenetic analysis; information and machine learning; visual and graphical analysis bioinformatics; worldwide biologic databases; experimental design and data collection techniques; scientific and statistical data analysis; database and data mining methods; and network and Internet methods.
- **INFO-H 525 Organizational Informatics and Economics Security (3 cr.)** Organizational process embed implicit and explicit decisions and information control. Security technologies and implementations make explicit organizational choices that determine individual autonomy within an organization. Security implementations allocate risk, determine authority over processes, make explicit relationships in overlapping hierarchies, and determine trust extended to organizational participants.
- **INFO-B 528 Computational Analysis of High-throughput Biomedical Data (3 cr.)** This course covers advanced concepts of genomics, molecular biology, and systems biology and explores computational methods for analyzing their high-throughput datasets. Problems in biology and biomedicine will motivate the development of algorithms to apply to these datasets.
- **INFO-B 529 Machine Learning for Bioinformatics (3 cr.)** P: I519. The course covers advanced topics in bioinformatics with a focus on machine learning. The course will review existing techniques such as hidden Markov models, artificial neural network, decision trees, stochastic grammars, and kernel methods. Examine application of these techniques to current bioinformatics problems including: genome annotation and comparison, gene finding, RNA secondary structure prediction, protein structure prediction, gene expression analysis, proteomics, and integrative functional genomics.
- **INFO-B 530 Foundations of Health Informatics (3 cr.)** This course will introduce the foundations of health informatics. It will review how information sciences and computer technology can be applied to enhance research and practice in healthcare. The basic principles of informatics that govern communication systems, clinical decision, information retrieval, telemedicine, bioinformatics and evidence-based medicine will be explored.
- **INFO-B 531 Seminar in Health Informatics (1–3 cr.)** Presentation and discussion of new topics in health informatics as seminar by students. Concentration on a particular area each semester to be announced before registration.
- **INFO-B 532 Seminar in Bioinformatics (1–3 cr.)** Presentation and discussion of new topics in bioinformatics as seminar by students. Concentration on a particular area each semester to be announced before registration.
- **INFO-H 534 Seminar in Human–Computer Interaction (1–3 cr.)** Topics vary yearly and include the following: information visualization, immersive technologies, designing hypermedia for educational applications, user-centered design techniques and tools, formal methods and cognitive modeling in HCI.
- **INFO-B 535 Clinical Information Systems (3 cr.)** Clinical Information Systems includes: human computer interface and systems design; healthcare decision support and clinical guidelines; system selection; organizational issues in system integration; project management for information technology change; system evaluation; regulatory policies; impact of the Internet; economic impacts of e-health; distributed healthcare information technologies and future trends.
- **INFO-B 536 Computational Methods for Biomedical Informatics (3 cr.)** This course covers algorithm design, algorithm analysis, and complexity analysis and their applications in biomedical informatics.
- **INFO-H 536 Foundational Mathematics of Cybersecurity (3 cr.)** Students will learn mathematical tools necessary to understand modern cyber security. The course will cover introductory mathematical material from a number of disparate fields including probability theory, computational theory, complexity theory, group theory, and information theory. **Not currently being offered.**
- **INFO-H 537 Legal and Social Informatics of Security (3 cr.)** This is a case-based course on privacy and security in social contexts. Privacy and security technologies can diverge from their designers' intent. Privacy-enhancing technologies have been used to defeat data protection legislation, and cryptographic technologies of freedom can be used by corrupt regimes to protect their records from external view. **Not currently being offered.**
- **INFO-B537 Health Literacy (3 cr.)**
- **INFO-H 538 Introduction to Cryptography (3 cr.)** Introduction to the foundational primitives of cryptography and implementations. A primary goal of this course will be to understand the security definitions for each primitive, and how they are used in cryptographic protocols. The ethics of insecure or on-the-fly protocol design will be discussed.
- **INFO-H 539 Cryptographic Protocols (3 cr.)** The class teaches a basic understanding of computer security by looking at how things go wrong, and how people abuse the system. The focus of the class is on how computer systems are attacked, and once this is understood it is possible to propose ways to make the system secure.
- **INFO-H 540 Data Mining for Security (3 cr.)** The objective of this course is to provide an

understanding of the impact of data mining in security with a particular focus on intrusion detection.

There will be an introduction to data mining where data mining techniques including association rules, clustering and classification are described. Security basics will be presented, focusing on topics such as authentication and access control that are relevant to data mining. This seminar course will explore recent research work in this area and intrusion detection.

- **INFO-H 541 Interaction Design Practices (3 cr.)**This course covers human computer interaction theory and application from an integrated approach of knowledge domains, i.e., the cognitive, behavioral, and social aspects of users and user context, relevant to the design and usability testing of interactive systems.
- **INFO-B543/B544 Professional Practicum in Health Information Management I and II (1–6 cr.)**
- **INFO-H 543 Interaction Design Methods (3 cr.)**Web usability principles (theory) and practices are covered with a semester long project that draws upon relationships between Web and software design and usability engineering. Students also learn a collection of user requirement and testing processes and techniques for the development of more usable interactive systems.
- **INFO-H 545 Music Information Representation, Search and Retrieval (3 cr.)**A comprehensive, comparative study of computer-based representation schemes for music, including those oriented toward music notation, music performance, and music analysis. Overview of musical metadata. Techniques and tools for search and retrieval of music information. Credit not given for both INFO I545 and MUS N564. **Not currently being offered.**
- **INFO-H 546 Music Information Processing: Symbolic (3 cr.)**This course deals with both methodology and specific applications that attempt to algorithmically annotate, understand, recognize, and categorize music in symbolic (score-like) form. Particular applications will include key finding, harmonic analysis, note spelling, rhythm recognition, meter induction, piano fingering, and various classification problems such as genre or composer identification. The methodology we will employ will be probabilistic and will include ideas from Machine Learning such as optimal classifiers, hidden Markov models, and Bayesian networks. Students will have computing assignments, present papers, and be expected to implement solutions to some of the problems we address using a high-level language such as R or Matlab. **Not currently being offered.**
- **INFO-H 547 Music Information Processing: Audio (3 cr.)**This course deals with various music analysis and processing problems that use sampled audio as the primary data representation. We discuss digital signal processing including filtering and its relationship to Fourier techniques. Topics include synthesis, effects processing, score following, and blind music recognition, and accompaniment systems. **Not currently being offered.**
- **INFO-H548 Introduction to Music Informatics (3 cr.)**History, issues, and applications in music information technology. Survey of various types of musical information. Introduction to digital musical media, including data standards and processing; database structure and organization standards and processing; database structure and organization of audio-, score-, and text file objects; and discussion of copyright issues. **Not currently being offered.**
- **INFO-H 550 Legal and Business Issues in Informatics (3 cr.)**This course is intended for students who are interested in starting their own company or who anticipate joining a start-up company. It provides students with a solid foundation on a variety of legal and business matters such as selecting a business structure, financing and credit, drafting business plans, preparing appropriate paperwork, tax implications, marketing and public relations, etc.
- **INFO-B 551 Independent Study in Health Informatics (1–3 cr.)**Independent study under the direction of a faculty member, culminating in a written report. Total credit for seminars and independent study courses may not exceed nine hours. May be repeated for credit.
- **INFO-B 552 Independent Study in Bioinformatics (1–3 cr.)**Independent study under the direction of a faculty member, culminating in a written report. Total credit for seminars and independent study courses may not exceed nine hours. May be repeated for credit.
- **INFO-IH554 Independent Study in Human-Computer Interaction (1–3 cr.)**Independent study under the direction of a faculty member, culminating in a written report. Total credit for seminars and independent study courses may not exceed nine hours. May be repeated for credit.
- **INFO-B 556 Biological Database Management (3 cr.)**Study about database management and its application to bioinformatics. Topics include data modeling, data indexing and query optimization with a bioinformatics perspective, and database issues in complex nature of bioinformatics data. The course also involves study of current challenges related to bioinformatics data management, data integration and semantic Web.
- **INFO-H 561 Human-Computer Interaction Design II (3 cr.)** As a continuation of HC11 (I541), students will learn methodologies and principles for two types of core activities in human-computer interaction design: a) requirements analysis, contextual inquiry and ethnography as applied to the design of interactive systems in the social context? b) conceptual design for the modeling of the interactive structure of web, hypermedia and software applications.
- **INFO-H 563 Psychology of Human-Computer Interaction (3 cr.)**Covers the psychological and behavioral science of human computer interaction, including cognitive architecture, memory, problem-solving, mental models, perception, action, and language. Emphasis is placed on developing an understanding of the interaction between human and machine systems and how these processes impact the design and testing of interactive technologies.
- **INFO-H 564 Prototyping for Interactive Systems (3 cr.)**This course covers methodologies for designing and prototyping graphic user interfaces, including rapid (paper) and dynamic (interactive)



prototypes. Principles of design research and visual communication are discussed in the context of interaction design, cognition, and user behavior, as well as usability testing techniques for concept validation.

- **INFO-H 565 Collaborative and Social Computing (3 cr.)** This is a seminar course in which students will engage with seminal research in collaborative and social computing through a series of genealogical threads linking 'big ideas' in the social sciences to the ways in which they have been appropriated in collaborative and social computing research. Through their synthesis of the course readings, students will connect these big ideas to the design and use of seminal 'historic' and contemporary social and computing technologies.
- **INFO-H 566 Experience Design for Ubiquitous Computing (3 cr.)** An introduction to research topics in ubiquitous and pervasive computing, including sensors, ambient displays, tangibles, middleware, mobility, and location and context awareness. These topics are explored from a user-centered design perspective, focusing on how a situated and embedded model of computing affects requirements gathering, interaction design, prototyping, and evaluation techniques. Students gain expertise with contemporary ubiquitous and pervasive computing technologies and learning to incorporate them into a user-centered research and design process.
- **INFO-B 573 Programming for Science Informatics (3 cr.)** Students will receive a thorough understanding of software development for chemical informatics and bioinformatics, and broaden experience of working in a scientific computing group. Topics include programming for the web, depiction of chemical and biological structures in 2D and 3D, science informatics tool kits, software APIs, AI and machine-learning algorithm development, high performance computing, database management, managing a small software development group, and design and usability of science informatics software.
- **INFO-I 575 Informatics Research Design (3 cr.)** Introduction and overview to the spectrum of research in informatics. Qualitative and quantitative research paradigms, deterministic experimental designs to a posteriori discovery. Issues in informatics research; conceptual, design, empirical, analytical, and disseminative phases of research.
- **INFO-B 576 Structural Approaches to Systems Biology (3 cr.)** Computational approaches to characterizing and predicting tertiary protein configuration, based on known data of atomic, intramolecular and intermolecular interactions. The course presents a balanced and integrative outlook at the various molecular components that determine biological function, sub-cellular organization, dysfunction and even disease examined at the nanoscale.
- **INFO-B 578 Data Analysis for Clinical Administrative Decision Making (3 cr.)** P: I575. Focuses on understanding, manipulating, and analyzing quantitative data in nursing and healthcare. Includes use of computer-based systems for data management and statistical analysis.
- Application and interpretation of multivariate statistical models for decision-making.
- **INFO-B 581 Health Informatics Standards and Terminologies (3 cr.)** Health information standards specify representation of health information for the purpose of communication between information systems. Standards not only standardize data formats, but also the conceptualizations underlying the data structures. The design process of data standards, domain analysis, conceptualization, modeling, and the methods and tools commonly used are explored.
- **INFO-B 582 Health Information Exchange (3 cr.)** This course describes the drivers and challenges, the data and services of electronic health information exchange (HIE). The five focus areas of HIE are reviewed relative to strategies and actions: Aligning incentives; Engaging Consumers; Improving Population Health; Managing Privacy, Security and Confidentiality; and, Transforming Care Delivery.
- **INFO-B 583 Security and Privacy Policies and Regulations for Health Care (3 cr.)** This course discusses privacy and security regulations for health care information transactions including policy, procedures, guidelines, security architectures, risk assessments, disaster recovery, and business continuity. Particular attention is given to the Health Insurance Portability and Accountability Act (HIPAA) and the Health Information Technology for Economic and Clinical (HITECH) Act.
- **INFO-B 584 Practicum in Health Information Technology (3 cr.)** This course provides an opportunity for the learner to synthesize all previous coursework and to demonstrate beginning competency in Health Information Technology (HIT) applications. The course employs an application focus in which the learner demonstrates comprehension, critical thinking, and problem-solving abilities within the context of a real-world environment.
- **INFO-B 585 Biomedical Analytics (3 cr.)** This course introduces the use of patient data, genomic databases, and electronic health records (EHR) to improve patient care and to achieve greater efficiencies in public and private healthcare systems. The course explores clinical intelligence and the role of analytics in supporting a data-driven learning healthcare system.
- **INFO-I 590 Topics in Informatics (1–3 cr.)** Variable topic. Emphasis is on new developments and research in informatics. Can be repeated with different topics, subject to approval of the Dean.
- **INFO-I 600 Professionalism and Pedagogy in Informatics (3 cr.)** Course will introduce students to topics and skills necessary for entering careers in industry or the academy. Topics covered will include career planning, curriculum development, effective teaching, research ethics, scholarly and trade publishing, grantsmanship, and intellectual property consideration.
- **INFO-B 601 Introduction to Complex Systems (3 cr.)** The course will cover fractals, emergent behavior, chaos theory, cooperative phenomena, and complex networks. Students will learn how to

think differently about complexities, finding ways to understand their complexity and addressing the problems they pose.

- **INFO-H 604 Human Computer Interaction Design Theory (3 cr.)**The course will explore, analyze, and criticize underlying assumptions and the rational behind some of the most influential theoretical attempts in HC and related fields. The purpose of the course is to make students aware of how theories can influence practice and to develop critical thinking around the role, purpose, and function for theories.
- **INFO-B 605 Social Foundations of Informatics (3 cr.)**Topics include the economics of information businesses and information societies, legal and regulatory factors that shape information and information technology use, the relationship between organization cultures and their use of information and information technology, and ownership of intellectual property.
- **INFO-H 611 Mathematical and Logical Foundations of Informatics (3 cr.)**An introduction to mathematical methods for information modeling, analysis, and manipulation. The topics include proof methods in mathematics, models or computation, counting techniques and discrete probability, optimization, statistical inference and core advanced topics that include but are not limited to Markov chains and random walks, random graphs, and Fourier analysis. **Not currently offered.**
- **INFO-B 617 Informatics in Life Science and Chemistry (3 cr.)**P: Advanced graduate standing or consent of instructor. Introduces the fundamental notions in genome and proteome informatics and chemical informatics focusing on the design and organizing issues in information systems used in those areas. The course is designed for students with no biology or chemistry background, but some knowledge in informatics, who want to learn basic topics in bioinformatics and chemical informatics. **Not currently being offered.**
- **INFO-B 619 Structural Bioinformatics (3 cr.)**Course covers informatics approaches based on the sequence and 3D structure of biological macromolecules (DNA, RNA, Protein) whose objective is to improve our understanding of the function of these molecules. Topics will include molecular visualization; structure determination, alignment, and databases; and prediction of protein structure, interactions, and function.
- **INFO-B 621 Computational Techniques in Comparative Genomics (3 cr.)**Course will summarize computational techniques for comparing genomes on the DNA and protein sequence levels. Topics include state of the art computational techniques and their applications: understanding of hereditary diseases and cancer, genetic mobile elements, genome rearrangements, genome evolution, and the identification of potential drug targets in microbial genomes.
- **INFO-H 624 Advanced Seminar I – Human Computer Interaction (3 cr.)**P: Advanced graduate standing or consent of instructor. Introduces students to major historical, contemporary and emerging theories, methods, techniques, technologies and applications in the field of Human-Computer Interaction. Students will explore relevant and influential research, results and application. Students will develop an understanding of leading research approaches and paradigms, and will design an independent research program in relation to their individual research fields and personal interests.
- **INFO-B 626 Human Factors Engineering for Health Informatics (3 cr.)**In this course, students review and critique traditional and emerging human factors engineering approaches, concepts, and methods and apply them to contemporary health informatics problems. Class activities include discussions and interactive peer review of articles, presentations, and original research proposals.
- **INFO-B 627 Advanced Seminar I – Bioinformatics (3 cr.)**P: Advanced graduate standing or consent of instructor. Introduces students to major historical, contemporary, and emerging theories, methods, techniques, technologies and applications in the field of bioinformatics. Student will explore relevant and influential research, results and applications. Students will develop an understanding of leading research approaches and paradigms, and will design an independent research program in relation to their individual research fields and personal interests. The course will focus on research approaches in bioinformatics, and emerging technologies in biology and chemistry, and basic computational techniques.
- **INFO-H 634 Advanced Seminar II – Human Computer Interaction (3 cr.)**P: Advanced graduate standing or consent of instructor. Introduces students to major historical, contemporary and emerging theories, methods, techniques, technologies, and applications in the field of Human-Computer Interaction. Students will explore relevant and influential research, results and applications. Students will develop an understanding of leading research approaches and paradigms, and will design an independent research program in relation to their individual research fields and personal interests.
- **INFO-B 636 Nextgen Genomic Data Analytics (3 cr.)**
- **INFO-B 637 Advanced Seminar II – Bioinformatics (3 cr.)**P: Advanced graduate standing or consent of instructor. Introduces students to major historical contemporary and emerging theories, methods, and techniques in the field of Bioinformatics. Students will examine and explore relevant and influential research, results and applications. Students will develop an understanding of leading research approaches and paradigms, and will design and independent research program in relation to their individual research fields and personal interests. The course will focus on research approaches in bioinformatics, emerging technologies in biology and chemistry, and basic computational techniques.
- **INFO-B 641 Business of Health Informatics (3 cr.)**This class focuses on the economic importance of healthcare information technology adoption for value realization, as a strategic asset, as an investment, and transformation toward integrated decision making. Topics covered include but are not limited to implementation of Decision Support System, barcode tracking, Electronic Health

Records, pay-for-performance, incentives for e-prescribing.

- **INFO-B 642 Clinical Decisions Support Systems (3 cr.)**This course provides an overview of the background and state-of-the-art Clinical Decision Support Systems (CDSS). Topics include: the design principles behind clinical decision support systems, mathematical foundations of the knowledge-based systems and pattern recognition systems, clinical vocabularies, legal and ethical issues, patient centered clinical decision support systems, and the applications of clinical decision support systems in clinical practice.
- **INFO-B 643 Natural Language Processing and Text Mining for Biomedical Records and Reports (3 cr.)**This course familiarizes students with applications of Natural Language Processing and text mining in health care. While the course provides a short introduction to commonly used algorithms, techniques and software, the focus is on existing health care applications including clinical records and narratives, biomedical literature and claims processing.
- **INFO-B 646 Computational Systems Biology (3 cr.)**Introduction on how Omics data are generated, managed, analyzed from large-scale computational perspectives, exploring computational resources, especially biological pathways for integrative mining and computational analysis, representing and modeling multi-scale biological networks, relating static/dynamic properties to the understanding phenotypic functions at the molecular systems level.
- **INFO-H 651 The Ethnography of Informatics (3 cr.)**Introduces ethnography as a social science methodology and way of knowing with which to study information and its social contexts. Places ethnography in relation to other research methodologies relevant to the production of the Informatics knowledge base. Trains students in the use of a broad range of ethnographic techniques relevant to study of automated information technology in use. Designed to be open to students from other programs with sufficient methodological and substantive background.
- **INFO-B 656 Translational Bioinformatics Applications (3 cr.)**This course entails a cohesive approach to the theory and practice of bioinformatics applications in translational medicine [TM]. It includes topics related to the complexities of low, medium and high-throughput applications in TM and powerful solutions to TM data management problems by employing various informatics frameworks.
- **INFO-B 668 Seminar in BioHealth Informatics (1 cr.)**This course provides graduate students with knowledge on a wide range of current topics in health informatics from faculty and professionals engaged in cutting edge research and practice. Students connect with innovative faculty while learning through a combination of lectures, practicums, and discussions. The topics and presenters will be different each semester.
- **INFO-B 691 Thesis/Project in Health Informatics (1–6 cr.)**The student prepares and presents a thesis or project in an area of health informatics. The product is substantial, typically multi-chapter paper or carefully designed and evaluated application, based on well-planned research of scholarly project. Details are worked out between the student and the sponsoring faculty member. May be repeated for credit.
- **INFO-B 692 Thesis/Project in Bioinformatics (1–6 cr.)**The student prepares and presents thesis or project in an area of bioinformatics. The product is substantial, typically a multi-chapter paper or carefully designed and evaluated application, based on well-planned research or scholarly project. Details are worked out between student and sponsoring faculty member. May be repeated for credit.
- **INFO-H 694 Thesis/Project in Human-Computer Interaction (1–6 cr.)**The student prepares and presents a thesis or project in an area of Human-computer interaction. The product is substantial, typically multi-chapter paper, or a carefully designed and evaluated application, based on well-planned research or scholarly project. Details are worked out between the student and sponsoring faculty member. May be repeated for credit.
- **INFO-B 698/INFO-H 698 Research in Informatics (1–12 cr.)**Research under the direction of a member of the graduate faculty that is not dissertation related. Can be repeated for credit for a total of 30 credit hours.
- **INFO-I 699 Independent Study in Informatics (1–3 cr.)**Independent readings and research for Ph.D. students under the direction of a faculty member, culminating in written report. May be repeated for a maximum of 12 credit hours.
- **INFO-I 790 Informatics Research Rotation (3 cr.)**Work with faculty, investigate research opportunities. Can be repeated for a maximum of 6 credit hours.
- **INFO-I 890 Thesis Readings and Research (1–12 cr.)**Research under the direction of a member of the graduate faculty leading to a Ph.D. dissertation. Can be repeated for credit for a total of 30 credit hours.
- **INFO-H565 Collaborative and Social Computing (3 cr.)**This is a seminar course in which students will engage with seminal research in collaborative and social computing through a series of genealogical threads linking 'big ideas' in the social sciences to the ways in which they have been appropriated in collaborative and social computing research. Through their synthesis of the course readings, students will connect these big ideas to the design and use of seminal 'historic' and contemporary social and computing technologies. Over the course of the semester, students will also carry out research in collaborative and social computing. They will conduct a genealogical literature review about a social science theory of relevance to collaborative and social computing; analyze the ways in which that theory has and has not been applied to the design and analysis of collaborative and social computing systems; construct a design space based on their findings; and produce a series of conceptual design proposals to address either a gap in the design space and/or to flesh out a sweet spot in that space.

Research papers will be curated by the instructor and high-quality work will be submitted for review to the ACM Conference on Computer-Supported Cooperative Work.

- **INFO-B 667 Seminar in Interprofessional Collaboration (1–3 cr.)**
- **INFO-H 566 Experience Design for Ubiquitous Computing (3 cr.)** An introduction to research topics in ubiquitous and pervasive computing, including sensors, ambient displays, tangibles, middleware, mobility, and location and context awareness. These topics are explored from a user-centered design perspective, focusing on how a situated and embedded model of computing affects requirements gathering, interaction design, prototyping, and evaluation techniques. Students gain expertise with contemporary ubiquitous and pervasive computing technologies and learning to incorporate them into a user-centered research and design process.
- **INFO-H 680/681 Human-Computer Interaction Practical Practice 1–2 (3 cr.)** Part One should showcase the accumulative knowledge of the student in the areas of product design and development. Students will explore relevant and applied research concepts, while considering various HCI design approaches. Final outcomes will include the completion of the first half of the final project, i.e., the completion of a final product. The project will showcase the accumulative knowledge of the student in the areas of product assessment and documentation. Final outcomes will include the completion of the second half of the final project, i.e. product testing and analysis and writing of the paper.
- **LIS-S 511 Database Design (3 cr.)** Concerned with a comprehensive view of the processes involved in developing formal access to information from a user-centered point of view. Considers various database models such as flat file, hierarchical, relational, and hypertext in terms of text, sound, numeric, image, and geographic data. Students will design and implement databases using several commercial database management systems.
- **LIS-S 541 Information Policy (3 cr.)** Data creation/publication/dissemination and use occur in a complex social context. Legal and regulatory structures continue to evolve to control these processes. This course explores international and U.S. principles, laws, and regulations affecting the information industry. Focus varies with the topic; for example, copyright of electronic information sources or trans-border data flow. May be repeated for credit when topic varies.

### Elective Graduate Courses

Note: A student's committee, working in conjunction with an Informatics committee designated to oversee the minor, will decide what elective courses are appropriate for a given student.

### New Media

- **NEWM-N 500 Principles of Multimedia Technology (3 cr.)** This course examines issues related to digital media technology in the context of design, development, implementation and evaluation. Topics in the information industry, especially its impact on the cultural, economic, social, and ethical dimensions of local and global communities are examined. Topics also include: usability, intellectual property, and a diversity of user markets for new media products.
- **NEWM-N 501 Foundations of Digital Arts Production (3 cr.)** This course examines the production process and management of digital multimedia. Students investigate and produce projects by researching foundations in the use of digital video with special emphasis on production process of storytelling. Skills learned will include: project development and video production. Students will develop presentation skills through research papers.
- **NEWM-N 502 Digital Media Motion and Simulation Methods (3 cr.)** Applications in animation/simulation design and creation using computer desktop tools. Examines the fundamentals of three-dimensional animation through storyboards and planning, modeling, texturing, lighting, rendering, and composite techniques. Topics will include nurbs design development, texture mapping for realism and stylistic output, keyframe and path animation, and cinematography lighting techniques. Skills will be developed through design and modeling of individual or team multidisciplinary projects.
- **NEWM-N 503 Digital Media Application Design Processes (3 cr.)** Presents the principles and fundamentals of design techniques using authoring tools on PC, Macintosh and emerging computer platforms. Included are storyboarding, planning and organization of scripts, use of current technology, computers, video, and digital arts equipment; computer-assisted design and project planner software tools and management of design team concepts.
- **NEWM-N 504 Advanced Interactive Design Applications (3 cr.)** Incorporates extensive analysis and use of computer and multimedia authoring tools intended for character simulation design. The course will study the concepts of physics based bipedal movement in relation to gravity, balance, anticipation, potential energy, personality constructs, and locomotion. Assessment modeling for character depiction and animation will be planned and storyboarded. Other topics include more advanced facets of computer animation including paint tube modeling, layered, texture mapping, and track and block animation for cyclical actions.
- **NEWM-N 505 Internship in Media Arts and Technology (3 cr.)**
- **NEWM-N 507 Digital Media for Healthcare (3 cr.)**
- **NEWM-N 510 Web Database Concepts (3 cr.)** Addresses diverse issues arising when designing World Wide Web interface. Basic database concepts will be presented but the course will focus on discussion of interface issues specific to Web databases, technologies for linking databases to Web servers for delivery, discussion of various Web database applications, case studies, and industry trends.
- **NEWM-N 516 Online Video Presentation (3 cr.)**
- **NEWM-N 523 Web Database Concepts (3 cr.)**
- **NEWM-N 534 Serious Games and Simulations (3 cr.)**

- **NEWM-N 540 3D Compositing and Visual Effects (3 cr.)**
- **NEWM-N 542 Advanced 3D Character Animation (3 cr.)**
- **NEWM-N 549 3D Prototyping and Articulation (3 cr.)**
- **NEWM-N 553 Independent Study (1-3 cr.)**
- **NEWM-N 560 Advanced Scriptwriting for Digital Media (3 cr.)**
- **NEWM-N 595 Internship in Media Arts (3 cr.)**

## Innovation and Implementation Science

School of Medicine

**Departmental Email:** [tiffcamp@iupui.edu](mailto:tiffcamp@iupui.edu)

**Departmental URL:** [hii.iu.edu](http://hii.iu.edu)

**Program Contact:** Tiffany Campbell (317)-294-9052

### Program Director

Malaz Boustani MD, MPH

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff uses those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

Degree Offered:

Certificate in Innovation and Implementation Science

### Special Departmental Requirements

(See also general University Graduate School requirements.)

Indiana University's Certificate in Innovation and Implementation Science is offered by the School of Medicine through the Center for Health Innovation and Implementation Science within Clinical and Translational Sciences Institute. The Certificate is designed for working healthcare professionals, specifically practicing clinicians, nurses, pharmacists, allied health professionals, and administrators. At minimum, students are required to have at least two years of relevant healthcare experience, a bachelor's degree, and a GPA of 3.0 to be admitted into the program. Clinicians and administrators with prior process improvement or methodological training can enhance their knowledge base with new theoretical and applied knowledge.

As a prerequisite, students may be required to complete an online statistics tutorial before beginning their formal coursework. This requirement can be waived based on recent completion of a statistics course or employment in a research or data intensive position.

### Course Requirements

The Certificate in Innovation and Implementation Science is delivered as a blended program with weekend residencies and online instruction. Students attend one in-person weekend residency per month.

Complementing the instructional learning portion of the Certificate is a practicum portion. Students will apply the

theoretical knowledge of the curriculum to an Innovation and Implementation project in their home healthcare system, under the guidance of an organizational sponsor and a faculty mentor.

### Grades

Each course within the certificate is graded as Satisfactory/Fail. Students must pass all classes to earn the certificate.

### Courses

#### Fall Quarter

- GRAD-G673 Innovation and Implementation Science I (3.0 credit hours)

Students will study the transfer of evidence-based knowledge into routine practice with a focus on physician practices, continuum of care, and community settings. Innovation and implementation strategies and models will be examined with a focus on outcome measures, fidelity, changing reimbursement and new accountable care and shared savings delivery models.

- GRAD-G674 Health Outcomes and Evaluation in Implementation Science (1.5)

Students will explore stakeholder outcomes and program evaluation methods related to implementation projects and trials, and ongoing program evaluation. The focus is on addressing practitioners' need for informed decision-making. Topics covered include comparative effectiveness research, patient-centered outcomes, quality improvement cycles, and rapid learning health care systems.

#### Winter Quarter

- GRAD-G676 Innovation and Implementation Science II (3.0)

This course focuses on the robust design of an evidence-based intervention to achieve better care, lower costs, and better patient-centered outcomes. By focusing on effective design, the intervention should result in lower implementation costs, higher stakeholder acceptance, a more rapid time to full scalability, and higher quality of care.

- GRAD-G677 Leading Change, Teams, and Projects (1.5)

This course provides foundational knowledge and practical skills for leading and implementing a new health care invention in diverse types of health care settings. The course emphasizes complex adaptive systems, change strategies, leadership, teaming, and project management with a focus on the unique aspects of innovation and implementation science.

### Practicum

#### Spring Quarter

- GRAD-G678 Practicum in Innovation and Implementation Science I (3.0)

Through an organizational sponsor and faculty mentorship, this practicum synthesizes previous coursework and demonstrates competencies in designing evidence-based interventions and care models to deliver better care, lower costs, and higher patient-centered



outcomes. The first practicum project course focuses on identifying an opportunity for a planned change and designing the intervention.

#### *Summer Quarter*

- GRAD-G679 Practicum in Innovation and Implementation Science II (3.0)

This practicum builds on the work done in the prerequisite course and continues the project identified therein. The focus of the second practicum course is on intervention design, organizational assessment, and change management planning. Outcomes of this course include development of a project evaluation system, data collection processes, and feedback systems to monitor the initial success of the project, as well as to inform timely revisions as needed.

## Curriculum

### Curriculum

#### Degrees Offered

Master of Arts in Public Relations, Master of Arts in Sports Journalism.

The M.A. program in Public Relations has three tracks: general management, sports management, and health. Both the Public Relations and the Sport Journalism programs are intended to prepare students for work in the field, across a variety of media, corporations, organizations and institutions.

#### Master of Arts Degree

##### Special Departmental Admission Requirements

1. Bachelor's degree from an accredited college or university, with an overall undergraduate point average of at least 3.0; an undergraduate major in journalism is not required, but applicants without such a background are required to take additional course work in journalism and public relations as part of their master's program;
2. Appropriate level of achievement on the Graduate Record Examination General Test (applicants with a post-graduate degree are not required to submit GRE scores);
3. Three letters of recommendation; and
4. A personal statement explaining how a master's degree will fit into the applicant's career goals.

#### Foreign language

There is no foreign language requirement for the degrees.

#### Grades

No grade below B- (2.7) will be counted toward these degrees.

#### Course requirements

##### Public Relations

##### General Requirements

A total of 30 credit hours, including five Journalism and Public Relations core courses (J528, J529, and three topics courses in public relations theory, research and evaluation, and planning). Students who do not have an undergraduate degree in journalism or a related field are required to take three undergraduate courses in

introductory public relations, public relations writing and communication law (J219, J390 and J300, respectively).

#### PR Management Track

In addition to the core, general electives in Journalism and Public Relations or Communication Studies.

#### PR Sports Track

In addition to the general core, students take three core sports courses (J543, J540, and J542) and two electives in Journalism and Public Relations or Communication Studies.

#### PR Healthcare and Life Sciences Track

In addition to the general core, students take two core topics courses (public relations in the life sciences and integrated marketing communication in healthcare) and three electives in Journalism and Public Relations or Communication Studies.

#### Sports Journalism

A total of 30 credit hours consisting of J501, J510, J540, J541, J542, J543, J545, J546, J547, and J620. Students who do not have an undergraduate degree in journalism or a related field are required to take two undergraduate courses in sports writing and communication law (J345 and J300, respectively).

#### Courses

##### Sports Journalism

**JOUR-J 501 Public Affairs Reporting (3 cr.)** This course includes lectures and roundtable discussion of problems in covering public affairs issues at the national, state, and local levels. Emphasis is on reporting on government, social welfare agencies, elections, political parties, special interest groups and other areas of general public interest.

**JOUR-J 510 Media and Society Seminar (3 cr.)** This course offers an examination of structure, functions, ethics, and performance of communication and mass media, stressing a review of pertinent research literature. Students will analyze media policies and performance in light of communication theory and current economic, political and social thought.

**JOUR-J 540 Business of Sports Media (3 cr.)** A history of how media have evolved from radio, network television and magazines into the multi-dimensional world of regional and national cable, the Internet, and the networks. The way media provide so much of the revenue for sports as an entertainment industry has made it the anchor for the sports industry.

**JOUR-J 541 Digital Sports Journalism (3 cr.)** Students in this hands-on, practical course will learn how to envision, build, design and produce a sports website. Students will receive substantive training in the software used to produce web videos, podcasts and interactive graphics. And, students will be taught how to marry all of those elements into a compelling website.

**JOUR-J 542 Sports Journalism and Society (3 cr.)** This course provides a broad understanding of how social issues impact sports and how sports impacts society. Included will be a historical overview of sports, athletes' rights, race and gender in sports, the Olympics and

international sports, youth sports, the commercialization of sports and the influence of the media on sports.

**JOUR-J 543 Sports Law (3 cr.)** Students will develop a basic understanding of the relationship between sports and the law and of the basic concepts of major legal issues—antitrust, labor, contract and intellectual property—in sports today, while translating that knowledge into analytical reporting on those subjects.

**JOUR-J 545 Sports Writing (3 cr.)** This course is an intensive, in-depth and practical instruction on reporting and writing for print, magazines and the Web. This course will include a broad range of sports writing, from long-form narrative for magazines to twittering on the Web. It also will explore the essentials of beat reporting, with experiential learning at live press conferences and events.

**JOUR-J 546 Sports Journalism Research (3 cr.)** This course explores issues surrounding the highly lucrative nature of collegiate sports in America, such as which sports are the most and least profitable and the gap between men's and women's sports. Students will produce a research project in collaboration with a major media outlet.

**JOUR-J 547 Sports Broadcast Journalism (3 cr.)** The course is an intensive, in-depth and practical instruction of sports broadcasting. This course will include instruction in everything from play-by-play broadcasting of live events to the art of interviewing for television to writing and editing long segments.

**JOUR-J 620 Media Coverage of Sports (3 cr.)** This course will examine athletes, coaches, events and sports media coverage. It will focus on current events and controversies such as amateurism, competitive balance, debate over school mascots, gambling and problems in recruiting and the ensuing media coverage.

### Public Relations

**JOUR-J 529 Public Relations Campaigns (3 cr.)** This capstone course provides students with an opportunity to apply campaign model methodology to public relations planning so that they will be able to apply the research, theories, planning, and evaluation processes in working conditions which may not provide them with the time to deliberate on and evaluate each step in the way that the classroom provides.

**JOUR-J 528 Public Relations Management (3 cr.)** The primary purpose of this course is to provide you with a fundamental knowledge of the organizational structures, management styles, and problems commonly encountered in the management public relations or advertising firms and the advertising and/or public relations departments in a corporation or government agency. It also examines management structures in not-for-profit organizations.

**JOUR-J 531 Public Relations for Non-Profits (3 cr.)** The course provides a theoretical and practical foundation in public relations for those considering careers in nonprofit organizations or in fundraising. Specific coursework will involve the public relations campaign process and its relationship to organizational goals and to the specifics of organizational development and fundraising. An additional focus will involve the communications efforts required to maintain relationships

with donors, volunteers and key community and industry officials.

### JOUR-J 560 Topics Courses (3 cr.)

**Public Relations Research and Evaluation.** This course is a survey of simple and scientific research and evaluation techniques for use in organizational social environment research including target public analysis, initial research for public relations campaign and program planning, public relations program effectiveness evaluation, and continuous implementation evaluation for the purpose of facilitating periodic adjustment. This course focuses on applied research techniques such as surveys, both printed and online, interviews, focus groups, Q Sorts, secondary research techniques and others. (Required.)

**Public Relations Theory.** Theory is the backbone of public relations. This course examines both the historical and emerging theories underlying the practice of public relations. (Required.)

**Public Relations Planning.** This course provides students with an opportunity to explore and learn the advanced management techniques for public relations programs and campaigns focusing on the use of research and evaluation techniques, development of goals and objectives, segmentation of audiences, development of strategies and tactics, and creation of timelines and budgets. The course also uses the case study method to illuminate and illustrate these concepts. The course provides theoretical and practical experience in public relations project planning and execution. (Required.)

**Agencies and Entrepreneurs.** This course covers organizational structures, management approaches and problems commonly encountered in establishing and managing public relations, advertising, marketing and related communications firms. What you learn is relevant to those who might work in (as an employee) or with (as a client) an agency. It also covers the steps needed to establish, maintain and grow an agency or independent consultancy.

**Managing Online Public Relations.** From Blogs to Twitter, Facebook to websites and from Myspace to all of the emerging online tools available to communications professionals today, public relations managers must be able not only to use these tools, but to be able to integrate them into a coherent strategy. This course discusses not only the tools social media of Web 3.0, but also how to manage those tools and techniques.

**Issues and Crisis Communication.** Identification and management of various issues impacting organizations are critical to their success. Of course, when issues become crises, or crisis strikes, management of that crisis via effective communication with key constituent public is critical to the success and even survival of the organization. This course examines the techniques of issues management and the management tools available. It also examines from a practical perspective how to manage the public relations for organizations in crisis.

**Public Relations in the Life Sciences.** The medical product industry, including pharmaceuticals, medical devices and medical research, including genetic research, is a special industry that demands unique public relations activities. In addition, it is highly regulated and a complete understanding of that regulatory environment and the

restrictions and requirements on public relations is critical for success of any organization. This course focuses on the unique elements of this industry and provides students not only with an understanding of the industry and its regulatory environment, but also with special understanding of the conduct of public relations in the industry and the management of communication in such organizations.

**Intergrating Marketing Communication in Health Care.** This course is designed to prepare students for senior management positions in hospitals, health care organizations, and the health support industry. It focuses on counseling senior management on unique issues regarding health care communication, unique health care communication problems and challenges, managing the public relations function in health care organizations, and orchestrating public relations campaigns in support of health care organizational goals.

**Managing Public Relations Tactics and Techniques.** The mastery of a public relations tactics and techniques is the cornerstone of a public relations practitioner's skill set. This course provides extensive hands-on learning and practice in some essential tactics and techniques. This course is designed to apply theory to actual problem solving.

**JOUR-J 563 Public Relations Publications Design (3 cr.)** Institutional and industrial publications are an important means of internal and external communications. This course looks at the principles of design and production techniques. Students are provided with opportunities to create a variety of different public relations products while using state of the art desktop publishing applications.

**JOUR-J 804 Reading and Research in Journalism (3 cr.)**

### Faculty

#### Professors

Jonas Bjork, Chris Lamb

#### Assistant Professors

Pamela Laucella

#### Professors of Practice

Bruce Hetrick, Malcolm Moran

#### Lecturer

Julie Vincent

## Law

### McKinney School of Law

Departmental URL: [mckinneylaw.iu.edu](http://mckinneylaw.iu.edu)

Departmental E-mail: [lawadmit@iupui.edu](mailto:lawadmit@iupui.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degree Offered

#### Combined Master of Arts in Philosophy and Doctor of Jurisprudence (McKinney School of Law)

This program provides a unique and valuable perspective on the field of bioethics by combining the philosophical study of bioethics with a legal education.

A candidate spends the first year in law school, adding courses from the IU Department of Philosophy during the second year. In addition to the basic required law school courses, students must complete the requirements for the Concentration in Health Law and Bioethics.

The capstone project for this combined degree program will be a paper in a topic that addresses the fields of law and bioethics. This paper will satisfy both the advanced research and writing requirement at the law school and the thesis/research project in the Department of Philosophy.

#### Requirements

The program requires 24 hours in the M.A. Program and 84 credit hours at the Robert H. McKinney School of Law for graduation. Non-combined degree study requires 90 credit hours at the McKinney School of Law, while the M.A. requires 30 credit hours at the Department of Philosophy. Summer school during the first two summers of the combined program is encouraged to help the M.A./J.D. student attain increased credit hours and ease potential scheduling conflicts that may arise when scheduling course work in two different schools.

Up to six credits of health law courses are counted toward the 30 credits required for the M.A. in Philosophy. Six credits from the M.A. program are also applied to law for a total of 84 needed for the J.D. credits. The two degrees are obtained with a total of 108 earned credits, as compared with the 120 credits required if the degrees are obtained separately.

#### For additional information contact:

Dr. Jason T. Eberl Department of Philosophy, IUPUI  
Phone: 317-278-9239

#### Other combined degrees offered by the McKinney School of Law

Doctor of Jurisprudence (J.D.) and Master of Business Administration; J.D. and Master of Public Affairs; J.D. and Master of Health Administration; J.D. and Master of Public Health; J.D. and Doctor of Medicine; J.D. and Master of Library Science; and the J.D. and Master of Social Work

### Faculty

#### Dean and Paul E. Beam Professor of Law

Andrew R. Klein

#### Faculty

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Program Director

Professor Patricia J. Gallagher\*, Ph.D

Graduate Division Office, MS 207

## Life Sciences

### School of Medicine

Department E-mail: [biomed@iupui.edu](mailto:biomed@iupui.edu)

Departmental URL: <https://medicine.iu.edu/graduate-degrees/phd/indianapolis/curriculum>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Degree Offered

### Ph.D. Minor in Life Sciences

#### Minor Description

The doctoral minor Life Sciences is a 12 credit hour minor designed to provide Ph.D. students in the IUSM Graduate Division and any program throughout IU the opportunity to gain a breadth of fundamental understanding of biomedical and life sciences as applied toward interdisciplinary team science where the ability communicate and work with team members from diverse training backgrounds is a key skill set to be developed.

#### Plan of Study

For Ph.D. programs within the I.U. School of Medicine, a life sciences minor may be selected by a student with the consent of the student's advisory committee. This minor requires a minimum of 12 credit hours of advanced graduate level courses taken outside of the student's major department. At least 6 credit hours must be in a single department/program. The minor representative on the advisory committee must be selected from one of the departments in which courses for the minor are taken and will ordinarily be from the department contributing two or more courses to the minor.

*For students enrolled in the combined MD/PhD program only*

Students enrolled in the combined MD/PhD program may select the following courses below to count towards the life sciences minor, instead of the above plan of study, unless they are also being used to fulfill requirements towards their PhD program. In that specific case, another GRDM-X course can be used in its place. Please note that these are graduate level versions of Phase 1 courses from the Doctor of Medicine curriculum:

- GRDM-X630: Molecules to Cells and Tissues (8 cr.)
- GRDM-X640: Fundamentals of Health and Disease (6 cr.)

The following courses taken by students admitted through the Indiana Biomedical Gateway (IBMG)

Program for PhD Study **cannot** be applied to the Life Sciences minor:

- COMM-C534: Distilling Your Message (1 cr.)
- COMM-C533: Improvisation for Scientists (1 cr.)
- ENG-W533: Science Writing (1 cr.)
- GRDM-G505: Responsible Conduct of Research (1 cr.)
- GRDM-G506: Responsible Conduct of Translational Research (1 cr.)

- GRDM-G507: Reagent Validation as a Means for Enhanced research Reproducibility (1 cr.)
- GRDM-G702: Entering Biomedical Research (1 cr.)
- GRDM-G855: Experimental Design and Biostatistics (1 cr.)

### Admission Requirements

To be admitted to the Ph.D. minor in Life Sciences, you must be a currently enrolled doctoral student in good academic standing in any IU or IUPUI school.

### Grading Policy

A minimum of B (3.0) is required in each course that is to count toward the minor. If a minimum of B (3.0) is not earned in a course, that course must be retaken. A course may be retaken only once. Students who fail to achieve the minimum grade of B (3.0) the second time they take a course, will not be able to earn this Ph.D. minor.

### Qualifying Exam

This Ph.D minor does not require a Qualifying Exam

***Examples of Courses that could be selected for the Life Sciences Minor unless they are required for the PhD program major plan of study:***

#### Graduate Medicine (GRDM)

- GRDM-G700 – Translating Foundational Sciences to Contemp. Know. (1 cr.)
- GRDM-G715 – Biomedical Sciences 1 (2 cr. Or 3 cr.)
- GRDM-G716 – Biomedical Sciences 2 (2 cr. Or 3 cr.)
- GRDM-G717 – Biomedical Sciences 3 (2 cr. Or 3 cr.)
- GRDM-G703 – Physiology of the Coronary Circulation (1 cr.)
- GRDM-G707 – Physiology of Smooth Muscle (1 cr.)
- GRDM-G708 – Cardiac and Coronary Physiology of Exercise (1 cr.)
- GRDM G720 – Stem Cell Biology (2 cr.)
- GRDM-G724 – Molecular Cancer Genetics (1 cr.)
- GRDM-G725 – Gene Therapy (1 cr.)
- GRDM-G727 – Animal Models of Human Disease (1 cr.)
- GRDM-G728 – Fundamental Concepts of Infection and Immunity (1 cr.)
- GRDM-G729 – Introduction to the Immune System (1 cr.)
- GRDM-G745 – Fundamentals of Intracellular Signal Transduction (1 cr.)
- GRDM-G747 – Principles of Pharmacology (1 cr.)
- GRDM-G748 – Principles of Toxicology 1 (1 cr.)
- GRDM-G751 – PHAR-G 751 Advanced Concepts in Cytosolic and Nuclear Signal Transduction (2 cr.)
- GRDM-G761 – Molecular and Cellular Physiology of Ion Channels (1 cr.)
- GRDM-G762 – Renal Physiology (1 cr.)
- GRDM-G780 – Foundations of Neuroscience (6 cr.)
- GRDM-G788 – Next Generation Sequencing (3 cr.)
- GRDM-G817 – Molecular Basis of Cell Structure and Function (2 cr.)
- GRDM-G805 – Diabetes and Obesity (2 cr.)



- GRDM-G801 Cell Biology of the Neuromusculoskeletal System (4 cr.)
- GRDM-G819 Basic Bone Biology (3 cr.)
- GRDM-G807 – Structural and Chemical Biology (2 cr.)
- GRDM-G826 – Heterologous Expression of Proteins and Small Molecules
- GRDM-G848 – Bioinformatics, Genomics, Proteomics & Systems Biology (2 cr.)
- GRDM-G852 – Concepts of Cancer Biology: Signaling Gone Awry (2 cr.)

### **Anatomy and Cell Biology**

- ANAT-D501 Human Gross Anatomy (5 cr.)
- ANAT D528 Gross Anatomy for Health Care Professionals (5 cr.)
- ANAT-D502 Basic Histology (4 cr.)
- ANAT-D527 Neuroanatomy: Contemporary and Translational (3 cr.)
- ANAT-D701 Translational Neuroscience (5 cr.)

### **Cellular and Integrative Physiology**

- PHSL-F513 Human Physiology (6 cr.)
- PHSL-F603 Integrated Medical Physiology (3 cr.)

### **Medical and Molecular Genetics (MGEN)**

- MGEN-Q580 – Basic Human Genetics (3 cr.)
- MGEN-Q612 – Molecular and Biochemical Genetics (3 cr.)
- MGEN Q613 – Molecular and Biochemical Genetics Lab (2 cr.)
- MGEN-Q620 – Cytogenetics (2 cr.)
- MGEN-Q630 – Population Genetics (1 cr.)

### **Medical Neuroscience**

- MNEU-N711 – Translational Neuroscience and Neurogenetics (2 cr.)
- MNEU-N880 – Advanced Topics in Medical Neuroscience (1 cr. – titles vary)

### **Microbiology and Immunology (MICR)**

- MICR-J807 – Current Topics in Immunology (2 cr.)
- MICR-J829 – Current Topics in the Molecular Genetics of Microorganisms (2 cr.)
- MICR-J842 – Neoplastic determinants (2 cr.)

### **Pathology and Laboratory Medicine**

- PATH-C693 – General and Clinical Pathology (4 cr.)

### **Pharmacology and Toxicology**

- PHAR-F850 – Experimental Design and Grant Writing in Pharmacology and Toxicology (1 cr.)
- PHAR-F818: Principles of Medical Pharmacology (3 cr.)
- PHAR-F828 Principles of Pharmaceutical Toxicology in the 21st Century (2 cr.)

## **Medical and Molecular Genetics**

### **School of Medicine**

Departmental URL: <http://genetics.medicine.iu.edu>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The

University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### **Curriculum**

#### **Degrees Offered**

Master of Science in Medical and Molecular Genetics and Doctor of Philosophy

#### **Special Program Requirements**

(See also general University Graduate School requirements.)

#### **Admission Requirements**

**MS Non-counseling plan:** Bachelor's degree or its equivalent, including two years of chemistry, mathematics through calculus, two years of biology, and one course in principles of genetics. Promising students deficient in one or more areas may be accepted if it appears to the admissions committee that deficiencies can be removed during graduate study. Results of the Graduate Record Examination (GRE) General Test are not required for admission.

#### **MS Genetic Counseling plan:**

Bachelor's degree or its equivalent, including at least one semester in biology, genetics, psychology and either organic chemistry or biochemistry. Results of the Graduate Record Examination (GRE) General test are not required for admission.

#### **Master of Science Degree**

##### **MS Non-counseling Plan Course Requirements**

For students not in the genetic counseling study track, a minimum of 30 credit hours of approved courses, including no more than 7 credit hours of research, plus either the thesis option or non-thesis option of an additional 6 credit hours (see "Thesis" section below). At least 20 credit hours must be taken in medical genetics or approved equivalents, including at least four of the following five areas with grades of B or higher: basic human genetics (Q580), introduction to clinical genetics (MGEN-Q625), cytogenetics (MGEN-Q620), molecular and biochemical genetics (MGEN-Q612), and population genetics (MGEN-Q630). The student must maintain a minimum of 3.0 GPA and a B or better in all coursework.

#### **Thesis**

A student not in the genetic counseling study track may complete one of the following options in addition to the 30 credits hours of approved coursework:

- prepare and defend a Master's thesis **OR**
- first authorship on a refereed publication with approval of the department **OR**
- complete an additional 6 hours of non-research coursework (non-thesis option)

#### **Final Examination**

The completion and passing of a written exam, oral exam, or combined written and oral exam is at the discretion of the student's advisory committee.

#### **Program Termination**



Academic or research deficiency will result in termination of the student's enrollment in the program.

### **MS Genetic Counseling Program Course Requirements**

For students on the genetic counseling study plan to meet requirements to take the certification examination of the American Board of Genetic Counseling, a minimum of 47 credit hours of approved courses must be taken in medical genetics. Required courses include at least 12 hours in clinical practicum courses (from MGEN-Q610, MGEN-Q710-Q717, or approved equivalent) and at least two credit hours of genetic counseling research (MGEN-Q810, MGEN-Q811) for the required genetic counseling graduate research project (see below). Students must earn a B- or better in all departmental coursework and maintain a minimum of a 3.0 GPA.

### **Genetic Counseling Graduate Research Project**

Genetic counseling students must choose either a clinical research project or case report with literature review for which they will enroll in at least two credits of Genetic Counseling Research (MGEN-Q810, MGEN-Q811) in addition to the required 45 credit hours from courses and clinical work.

### **Final Examination**

Genetic counseling MS students must pass a comprehensive written examination. Under exceptional circumstances, the student may petition the committee to be permitted to take the final examination one additional time.

### **Program Termination**

Academic, clinical, or research deficiency will result in termination of the genetic counseling student's enrollment in the program.

### **Doctor of Philosophy Degree Admission Requirements**

The Medical and Molecular Genetics Ph.D. program participates in an "open enrollment" system named The Indiana University School of Medicine BioMedical Gateway (IBMG) Program. The IBMG Program provides a shared first-year experience for all of the School of Medicine biomedical science pre-doctoral (Ph.D. program) students. The link for the IBMG program is: <http://grad.medicine.iu.edu/degree-programs/ibmg/>.

### **Course Requirements**

All Ph.D. students are required to take a minimum of 12 hours of coursework in the major, with a grade of B- or better, and the remaining hours will be of the minor, research and seminar credits, as well as the first-year common curriculum for new Ph.D. students, including six hours of research rotations, for a total of 90 credit hours. Information on first year required courses for the Ph.D. program (Indiana Biomedical Gateway – IBMG) program may be found under the Biomedical Sciences section of this bulletin. Up to 30 credit hours of non-clinical graduate level courses may apply toward the Ph.D. or the M.D./Ph.D. combined degree.

### **Minor**

Must be taken in a field related to the major, e.g., bioinformatics, cancer biology, cardiovascular sciences, diabetes and obesity, life sciences, health informatics, translational sciences, or with the approval of the student's Advisory Committee.. Number of credit hours (usually 12) and grades required are determined by the minor director for each minor. Minor credits must be separate from the Department of Medical and Molecular Genetics major course credit requirements.

### **Qualifying Examination**

The Qualifying Examination assesses the students research aptitude and critical thinking necessary to complete the requirements and intellectual rigors of the PhD. The Examination is composed of a detailed research proposal that is reviewed by the student's Advisory Committee and orally defended. Examination over the minor field at the discretion of the minor field department.

### **Research Proposal**

A written research proposal, presented and defended orally, is required for admission to candidacy and generally serves as the student's thesis proposal.

### **Final Examination**

Oral defense of dissertation.

### **Program Termination**

Research or academic deficiency, including two failures of the qualifying examination, will result in termination of the student's enrollment in the program.

### **Ph.D. Minor in Medical and Molecular Genetics**

Students outside the department desiring to obtain a doctoral minor in Medical and Molecular Genetics (MMGE) must complete a minimum of 9 credit hours across a variety of courses other than research (MGEN-Q800) and seminar (MGEN-Q660) focused on aspects of medical and molecular genetics with a grade of B (3.0) or better. Required courses consist of MGEN-Q580 Basic Human Genetics (3 cr.) and at least two of the following: Q612 Molecular and Biochemical Genetics (3 cr.), Q620 Human Cytogenetics (2 cr.), and Q630 Population Genetics (1 cr.).

### **Faculty**

#### **Chairperson**

**Joe C. Christian Professor of Medical & Molecular Genetics**

Tatiana Foroud\*

#### **Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### **Distinguished Professors**

Howard Edenberg (Biochemistry & Molecular Biology), Tatiana Foroud\*, Bernardino Ghetti\* (Pathology and Laboratory Medicine, Psychiatry, Neurology), Thomas Kaufman, John Nurnberger Jr.\* (Psychiatry)

#### **Chancellor's Professor**

Howard Edenberg\* (Biochemistry & Molecular Biology), Tatiana Foroud\*, Bernardino Ghetti\* (Pathology and Laboratory Medicine, Psychiatry, Neurology), Kenneth White\*

#### **Sutphin Professor of Cancer Genetics**

Gail H. Vance\*

#### **Michael Conneally Professor of Medical and Molecular Genetics**

Jungsu Kim\*

#### **Barbara and Peer Baekgaard Professor of Alzheimer's Disease Research**

Liana Apostolova\* (Neurology)

#### **Vera Bradley Foundation Professor of Breast Cancer Innovation**

Xiongbin Lu\*

#### **Roberts Family Professor of Alzheimer's Disease Research**

Bruce Lamb\*

#### **Richard L. Schreiner Professor of Pediatrics**

Wade Clapp\*

#### **Professors**

Raj Acharya, Micheala Aldred, (Medicine), Liana Apostolova\* (Neurology), Joseph Bidwell\* (Anatomy, Cell Biology & Physiology), Ira Brandt (Emeritus - Pediatrics), Brian Calvi, Joe Christian\* (Emeritus), Simon Conway\* (Pediatrics), Michael Econs\* (Medicine), Howard Edenberg\* (Biochemistry and Molecular Biology), Sherif Farag (Medicine), Anthony Firulli\* (Pediatrics), Bernardino Ghetti\* (Pathology and Laboratory Medicine), Alan Golichowski (Emeritus – Obstetrics & Gynecology), David Hains (Pediatrics), Tamara Hannon (Pediatrics), James Hartsfield, Reuben Kapur\* (Pediatrics), Robert Karn, Thomas Kaufman, Debomoy Lahiri\* (Psychiatry), Bruce Lamb, Yunlong Liu\*, Xiongbin Lu\*, Marc Mendonca (Radiation Oncology), John Nurnberger Jr.\* (Psychiatry), R. Mark Payne\* (Pediatrics), Terry Eugene Reed\* (Emeritus), Richard Rose (Emeritus), Andrew Saykin\* (Radiology & Imaging Sciences), David Severson, Weinian Shou\* (Pediatrics), Lois Travis (Medicine), Gail H. Vance\*, Stephanie M. Ware\* (Pediatrics), David Weaver (Emeritus), Ronald Wek\* (Biochemistry & Molecular Biology), Kenneth White\*

#### **Associate Professors**

Jeffrey Boldt, Qunfeng Dong, Molly Duman Scheel, Brett Graham, Brittney-Shea Herbert\*, Jason Meyer\*, Nuria Morral\*, Elliott Rosen (Emeritus), Bryan Schneider\* (Medicine), Todd Skaar\* (Medicine), Craig Stewart, Matteo Vatta, Peter Young (Emeritus – Obstetrics & Gynecology)

#### **Assistant Professors**

Gurkirat Baath, Sue Berend, Emily Farrow, Sarath Chandra Janga (Informatics), Janaiah Kota\*, Ben Landis (Pediatrics), Tao Lu (Pharmacology & Toxicology), Anirban Mitra, Heather O'Hagan, Lillie-Mae Padilla (Emeritus – Obstetrics & Gynecology), Milan Radovich

(Surgery), Susan Walsh, Jun Wan\*, Chi Zhang\*, Jie Zhang\*, Xinna Zhang\*

#### **Associate Research Professor**

Hanying Chen, Wayne Forrester

#### **Assistant Research Professors**

Daniela Bischof, Erica Clinkenbeard, Brenda Grimes, Emily Hopewell, Julia Hum, Joyce Hurley, Dongbing Lai, Younghye Moon, Kelly Nudelman, Nathan Pankratz, Tae-Hwi Linus Schwantes-An, Charles Tessier, Sreedhar Thirumala, Yue Wang, Wenting Wu

#### **Senior Research Professor**

Xiaoling Xuei

#### **Assistant Scientist**

Fang Fang, Sheng Liu, jill Reiter

#### **Lecturer**

Fang Fang, Joyce Hurley, Stephanie Sharpe, Kristyne Stone

#### **Clinical Professor**

Glenn Bingle (Medicine), Kenneth Cornetta, Bryan E. Hainline,

#### **Clinical Associate Professors**

Amy Breman, Jenelle Hodge, Stephane Pelletier, Victoria Pratt, Marwan Tayeh, Wilfredo Torres-Martinez, Laurence Walsh (Neurology), Janice Zurich (Emeritus)

#### **Clinical Assistant Professors**

Erin Conboy, Paula Delk, Sara Fitzgerald-Butt, Elle Geddes, Benjamin Helm, Jennifer Ivanovich, Melissa Lah, Tsai-Yu Lin, Molly McPheron, Marcus Miller, Vinaya Murthy, Sandra Prucka, Katie Spoonamore, Jennifer Weida (Obstetrics & Gynecology), Theodore Wilson

#### **Assistant Scientists**

Stephanie Bissel, Michael Edler, Hongyu Gao, Leah Wetherill

#### **Ph.D. & M.S. Graduate Advisor**

Daniel R. Brady, MS-0038, (317) 997-3321

#### **M.S. Genetic Counseling Program Director**

Paula Delk, IB 130, (317) 278-8837

#### **Courses**

##### **General**

- **MGEN-Q 580 Basic Human Genetics (3 cr.)**P: General genetics and consent of the instructor. An introduction to the genetics of human traits and heritable diseases. Emphasis will be on general aspects of eukaryotic genetics as it applies to humans, but some prokaryote genetics will be included for comparison.
- **MGEN-Q 581 Introduction to Quantitative Biomedical Sciences (3 cr.)** This course is designed to introduce students to diverse topics in the quantitative biomedical sciences connecting basic biology concepts with advanced quantitative

methodologies. It will serve as an introductory course for students with either basic biology or computational backgrounds. The topics cover bioinformatics, medical informatics, imaging informatics, and data sciences.

- **MGEN-Q 600 Practical Prenatal Genetic Counseling (2 cr.)**P: Consent of the instructor. An introduction to prenatal genetic counseling including fundamentals of prenatal screening and testing, genetic risk assessment in the prenatal clinic, the prenatal genetic counseling session, and psychological aspects of working with prenatal patients. Recurrent pregnancy loss, infertility and assisted reproductive options are reviewed.
- **MGEN-Q 604 Genetic Counseling Communication Techniques (4 cr.)**Genetic counseling models, methods and communication skills; professional issues related to client interactions. Practice-based learning through role play, analysis of genetic counseling case studies, and other class interactions.
- **MGEN-Q 606 Foundations in Genetic Counseling (2 cr.)**Introduction to the principles and practice of genetic counseling. Topics include genetic counseling techniques, pediatric/adult counseling, and support services.
- **MGEN-Q 608 Introduction to Genetic Counseling Research (1 cr.)**An overview of topics relevant to the development of genetic counseling research projects. Topics will include library tools, project development, research ethics, IRB, basic statistics, and manuscript preparation. Each student will develop a research proposal.
- **MGEN-Q 609 Practical Cancer Genetic Counseling (2 cr.)**Overview of hereditary cancer syndromes, genetic risk assessment for personal and family history of cancer, genetic counseling approaches, and testing issues.
- **MGEN-Q 610 Clinical Genetics Practicum (3 cr.)**P: Consent of the instructor. Methods for obtaining medical and family histories, approaches to evaluation of individuals and families with genetic disorders, and techniques for providing genetic counseling. May be repeated once for credit.
- **MGEN-Q 611 Genetics Analysis Laboratory (1-2 cr.)**P: Consent of the instructor. (Not currently being offered.) Computer storage and retrieval of family data. Use of programs for genetic analysis. Includes analysis of twins, families of twins, and genetic linkage and segregation.
- **MGEN-Q 612 Molecular and Biochemical Genetics (3 cr.)**Molecular and biochemical aspects of gene function in various genetic disorders. Emphasis on the DNA lesion when known, on aberrations in the metabolic pathways, and on structural defects. Discussion of hemoglobinopathies, phenylketonuria, storage diseases, and other conditions.
- **MGEN-Q 613 Molecular and Biochemical Genetics Laboratory (2 cr.)**The student will learn to perform many of the molecular and biochemical techniques for the determination of genetic markers that can be used for diagnosis, genotyping, and forensic applications.
- **MGEN-Q 614 Psychological Aspects of Genetic Counseling (3 cr.)**P: One course in introductory or abnormal psychology. Introduction to theory and research in the field of genetic counseling. Topics include risk assessment, psychosocial assessment, and decision-making. The social, ethical, and legal aspects of the delivery of genetic services are also covered.
- **MGEN-Q 615 Prenatal Diagnosis Practicum (3 cr.)**Training in prenatal genetic counseling. Counseling referrals may include advanced maternal age, abnormal prenatal screening, abnormal ultrasound, or other pregnancy complications. Not currently being offered
- **MGEN-Q 616 Specialty Clinics Practicum (2 cr.)**P: Consent of the instructor. An overview of the long-term management of patients living with a variety of genetic conditions. Students may provide genetic counseling while in these clinics. Not currently being offered
- **MGEN-Q 617 Genetic Counseling Practicum (1-2 cr.)**P: Q606, Q610, consent of instructor. Practice advanced genetic counseling skills in a weekly clinic. Develop proficiency in pedigree construction, patient education, and psychosocial assessment/counseling. Not currently being offered
- **MGEN-Q 618 Practical Cardiovascular Genetic Counseling (2 cr.)**P: Consent of the instructor. Fundamentals of cardiovascular genetic counseling including recognition of cardiovascular conditions and subsequent impact on medical management; risk assessment for hereditary/familial cardiovascular conditions; and psychosocial and ethical issues pertaining to inherited cardiovascular disease. Includes genetic testing for hereditary cardiovascular disease and results interpretation and communication.
- **MGEN-Q 620 Human Cytogenetics (2 cr.)**P: Consent of the instructor, basic genetics. Study of chromosome structure and replication, X-inactivation, meiosis, numerical and structural rearrangements in humans, and cytogenetics of malignancies.
- **MGEN-Q 621 Human Cytogenetics Laboratory (3 cr.)**P: Basic genetics, Q620, and consent of instructor. Current techniques in human cytogenetics. May be taken concurrently with Q620.
- **MGEN-Q 622 Cytogenetics of Malignancies (2-3 cr.)**P: Consent of instructor. This course will examine the biologic implications of cytogenetic abnormalities found in malignancies. Aberrant gene function as a result of cytogenetic abnormalities will be stressed.
- **MGEN-Q 623 Dysmorphology for Genetic Clinicians (1 cr.)**Study of human congenital malformations, deformations, disruptions and dysplasias; review of associated syndromes; approach to dysmorphology evaluation.
- **MGEN-Q 624 Clinical Management and Genetics of Metabolic Disease (1 cr.)**The student will gain a practical understanding of inborn errors of metabolism, the management of patients with these diseases and the genetic counseling issues that arise in the care of families with these diseases.

- **MGEN-Q 625 Introduction to Clinical Genetics (1 cr.)** This class will introduce the students to the broad areas of practice in clinical genetics, the ethical, legal, and social issues involved in the care of patients and families with genetic disorders, and the interface of clinical genetics and genetics research.
- **MGEN-Q 626 Fundamentals of Biochemical and Molecular Genetics (1 cr.)** Introduction to the concepts of molecular and biochemical genetics with emphasis on examples of pathogenesis of human disease. **Not currently being offered.**
- **MGEN-Q 627 Fundamentals of Human Cytogenetics (1 cr.)** An introduction to the principles of human cytogenetics with applications in basic genetics, including the clinical consequences of chromosomal abnormalities. **Not currently being offered.**
- **MGEN-Q 628 Fundamentals of Population Genetics (1 cr.)** Introduction to the broad areas of population genetics and gene discovery. **Not currently being offered.**
- **MGEN-Q 629 Embryology for Genetic Clinicians (2 cr.)** Normal human conception and embryonic/fetal development and factors causing birth defects.
- **MGEN-Q 630 Population Genetics (1 cr.)** P: Basic genetics. Basic probability and Bayes theorem, as applied to genetic counseling. Effects of mutation and selection on the survival of alleles in a population; consequences of consanguinity and inbreeding; methods of analysis including segregation and linkage including nonparametric methods; quantitative genetics such as twin studies, and heritability.
- **MGEN-Q 631 Quantitative Genetics (2 cr.)** P: G651 and G652 or equivalent. (Not currently being offered.) Inheritance of human quantitative traits, partitioning of phenotypic variation, estimation of genetic variance and heritability, methods of analyzing resemblance among relatives including nuclear families, twins, and half-siblings.
- **MGEN-Q 633 Professional Issues in Genetic Counseling I (1 cr.)** P: Consent of the instructor. Professional skills including keys to a successful genetic counseling job search, interviewing skills, communication skills, and professionalism; professional development in genetic counseling including expanded counselor roles, professional organizations and involvement, professional growth, and mentoring; and business foundations including insurance/billing, credentialing, licensing, and health systems.
- **MGEN-Q 634 Professional Issues in Genetic Counseling II (1 cr.)** P: Consent of the instructor. Professional skills including effective communication, media awareness, leadership, and clinical supervision; professional growth and development including communicating your worth, negotiation, expanded roles, effective teaching, course development, and becoming a master genetic counselor; and business foundations including risk management and alternative service delivery models.
- **MGEN-Q 640 Special Topics in Medical and Molecular Genetics (1 cr.)** Study of advanced topics/literature not already emphasized in Q580, problem-based learning, and skills helpful for the PhD (grant writing, examination preparation). **Not currently being offered.**
- **MGEN-Q 642 Dermatoglyphics (2 cr.)** P: Consent of instructor. (Not currently being offered.) Formation, development, classification and variation of finger, palm, and footprint patterns (dermatoglyphics) in humans; interpretation of results of quantitative and statistical techniques utilized in the study of the inheritance of dermatoglyphic traits, variation in twins, and applications in clinical genetics.
- **MGEN-Q 660 Medical Genetics Seminar (1 cr.)** P: Basic genetics. Topics chosen from aspects of medical genetics not extensively treated elsewhere. Various phases of research in medicine from a genetic and clinical point of view. Students may receive credit during each semester of residence on the Medical Center campus.
- **MGEN-Q 710 Advanced Clinical Genetics Practicum (2 cr.)** P: Consent of the instructor. Hands-on training in clinical genetics diagnostic and counseling clinics. Students participate in providing genetic evaluation, risk assessment and counseling to patients with indications including dysmorphic features; abnormal growth; difficulties with neurological, psychological and/or intellectual functioning; family history of genetic disorders; and abnormal genetic test results.
- **MGEN-Q 711 Metabolic Genetics Clinical Practicum (1 cr.)** P: Consent of the instructor. Hands-on training in metabolic genetics outpatient clinics and inpatient settings with introduction to the roles of the multidisciplinary biochemical genetics team. Students gain experience with the newborn screening program and conditions including PKU, galactosemia, organic acid disorders, and lysosomal storage diseases.
- **MGEN-Q 712 Cardiovascular Genetics Clinical Practicum (1 cr.)** P: Consent of the instructor. Covers presentation, long-term management and screening recommendations, risk assessment, genetic testing options and psychosocial issues associated with inherited cardiovascular conditions including cardiomyopathy, familial hypercholesterolemia, aortopathies and congenital heart defects. Students provide genetic counseling and follow-up in a supervised setting.
- **MGEN-Q 713 Cancer Genetic Counseling Clinical Practicum (variable, 1-2 cr.)** P: Consent of the instructor. Practicum includes presentation, long-term comprehensive management, risk assessment, genetic testing options and psychosocial issues associated with inherited oncology conditions. Students provide genetic counseling and follow-up in a supervised setting and become familiar with the genetic counselor's role in multidisciplinary tumor board meetings.
- **MGEN-Q 714 Advanced Cancer Genetic Counseling Clinical Practicum (1 cr.)** P: Consent of the instructor. This clinical practicum strengthens students' understanding of the presentation,

risk assessment, genetic testing options and psychosocial issues associated with inherited oncology conditions and builds upon their basic genetic counseling skills. Students provide genetic counseling, and follow-up in a supervised setting and attend multidisciplinary tumor board meetings.

- **MGEN-Q 715 Neurogenetics Clinical Practicum(1 cr.)**P: Consent of the instructor. Hands-on training in clinical neurogenetics diagnostic and counseling clinics. Students will participate in providing genetic evaluation, risk assessment and counseling to patients with indications including inherited structural brain anomalies, epilepsy syndromes, muscular dystrophies, developmental delays, autism, mitochondrial disorders, and adult onset neurodegenerative conditions.
- **MGEN-Q 716 Prenatal Genetic Counseling Clinical Practicum(variable, 1-2 cr.)**P: Consent of the instructor. Hands-on training in prenatal genetic counseling for cell-free fetal DNA and maternal serum screenings, abnormal screening results, ultrasound anomalies, teratogens, family history of genetic conditions, recurrent miscarriage and advanced maternal age. Students provide genetic counseling, case management and follow up in a supervised setting.
- **MGEN-Q 717 Prenatal Diagnosis Genetic Counseling and Stillbirth Assessment Clinical Practicum(1 cr.)**P: Consent of the instructor. Hands-on training in prenatal genetic counseling for a variety of prenatal and preconception indications. Students provide genetic counseling, case management and follow up in a supervised setting. Includes working with interpreters in an Hispanic genetic counseling clinic and case assessment in a stillbirth assessment program.
- **MGEN-Q 730 Methods in Human Genetics (3 cr.)**P: Basic genetics, differential calculus, and Q630 or equivalent. Sampling methods employed in study of human genetics; methods for analysis of segregation, linkage, mutation, and selection with family data collected under various forms of ascertainment.
- **MGEN-Q 800 Medical Genetics Research (arr. cr.)**
- **MGEN-Q 810 Genetic Counseling Research I** P:Enrollment in IU Genetic Counseling Graduate Program. Covers the design and initiation of independent research, under the mentorship of geneticists, genetic counselors and research faculty affiliated with the Genetic Counseling Graduate Program, relevant to clinical genetics or the genetic counseling profession.
- **MGEN-Q 811 Genetic Counseling Research II** P:MGEN-Q 810. Completion of independent research, under the mentorship of geneticists, genetic counselors and research faculty affiliated with the Genetic Counseling Graduate Program, relevant to clinical genetics or the genetic counseling profession. Culminates in dissemination of research via a seminar presentation and manuscript preparation.

### Graduate

- **GRAD-G 504 Introduction to Research Ethics (2-3 cr.)**Introduction to the basic concepts of

research ethics. The course will cover historical development of concern with ethics in science as well as practical information needed by students working in the science today. Format will be lecture and discussion.

- **GRDM-G 724 Molecular Cancer Genetics (1 cr.)**An introduction to cancer focusing on genetics. Topics include causes and effects of chromosome instability (including centromere/telomere failures and chromosomal translocations), epigenetic changes and genetic risk factors during cancer progression.
- **GRDM-G 725 Gene Transfer Approaches to Clinical and Basic Research (Gene Therapy) (1 cr.)**A lecture-based course of basic principles involved with the transfer and expression of genetic material. Focus on technical aspects of each vector system, followed by applications to human diseases/experimental animal models. Practical understanding of non-viral and viral gene transfer to utilize these techniques in research studies.
- **GRDM-G 727 Animal Models of Human Disease (1 cr.)**This class explores advantages and limitations of animal models of human disease. Topics include models for diabetes, psychiatric disorders, cancer, osteoporosis, polycystic kidney and cardiovascular disease. The goal of the course is to provide a framework for students to select experimental animal models in their future research careers.
- **MGEN-G 788 Introduction to Next Generation Sequencing (3 cr.)**Understanding the basic principles of next generation sequencing technology. This includes basic biological applications, basics in data processing, statistical and informatics theories in data analysis, advantages, limitations, and assumption of different methodologies, and biological interpretation of the results.
- **MGEN-G 901 Advanced Research (6 cr.)**For Ph.D. students who have at least 90 credit hours. May be taken for maximum of six semesters.

### Faculty

#### Program Director

Colleen M. DesRosiers, Associate Professor of Clinical Radiation Oncology ([cmdesros@iupui.edu](mailto:cmdesros@iupui.edu))

#### Curriculum Coordinator

Marvene M. Ewing, Senior Dosimetrist ([mewing@iuhealth.org](mailto:mewing@iuhealth.org))

### Faculty

Indra J. Das (Professor of Clinical radiation Oncology); Phil Dittmer (Assistant Professor of Radiation Oncology); Ted Hoene (Medical Dosimetrist, MPRI); Jeannie Jimerson (Medical Dosimetrist); John Kent (Certified Medical Physicist)

## Medical Dosimetry

**The University Graduate School and The School of Medicine**

**Departmental URL:** <http://radonc.medicine.iu.edu/medical-education/medical-dosimetry-graduate-certificate/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements



contained only in *The University Graduate School Bulletin*.)

### Curriculum Degree Offered Graduate Certificate

**The Medical Dosimetrist** is a member of the radiation oncology team who has knowledge of the overall characteristics and clinical relevance of radiation oncology machines and equipment, is cognizant of procedures commonly used in brachytherapy and has the education and expertise necessary to generate radiation dose distributions and dose calculations in collaboration with the medical physicist and radiation oncologist.

The Medical Dosimetry Graduate Certificate Program is a twelve-month program beginning with Summer Session II each academic calendar, typically this falls during the last week of June. The program is accredited by the JRCERT, of which there are only 17 Medical Dosimetry programs carrying this accreditation nationwide. 26 credit hours will be required for graduation of the class of 2016 and 29 credit hours will be required for classes graduating 2017 and later.

The IU Medical Dosimetry program offers training and experience in treatment planning for conventional 3D, Intensity Modulated Radiation Therapy, Stereotactic Body Radiotherapy, Volumetric Arc based therapy, and Brachytherapy. Students have the opportunity to rotate through 3 primary clinical sites: IU Health Simon Cancer Center, IU Health Methodist Hospital, and IU Health Bloomington Cancer Center.

This program is offered on site only. Rotations at clinical sites will be required to be within the State of Indiana. Clinical rotations are performed only through clinical affiliates of the program. Although enrollment in the program does not preclude the student from otherwise being employed, the program requires full-time, on-site attendance. On-line classes are not offered at this time.

### Admission Requirements

All applications must be processed through the School of Medicine Graduate Division Office. Please refer to the [Graduate Division Guidelines page](#) for important requirement information, in addition to our specific program requirements indicated below:

- All applicants must be accepted for admission to The University Graduate School.
- All applicants must hold a Bachelor degree from an accredited university; a Bachelor degree in radiation therapy is preferred, but others will be considered if all other requirements are met. A G.P.A. of 3.5 or higher must have been maintained in program related courses.
- All applicants must be ARRT (American Registry of Radiologic Technologists) certified in Radiotherapy Technology at the time of enrollment to the program.
- Three (3) professional letters of recommendation
- Official copies of all transcripts of all post-secondary institutions attended
- Completion of undergraduate prerequisite courses (or equivalent):

- a. College Algebra and Trigonometry and/or Pre-calculus
- b. Cross-Sectional Anatomy
- c. Radiation and Cancer Biology
- d. While not necessarily a requirement, preference will be given to students who have taken General Physics with a lab.
- e. Basic knowledge of computer technology

*Note: Students are admitted on a "rolling" basis. It benefits the student applicant to apply as early as possible to secure admission into the program.*

### Course Requirements

#### Summer Session II

**Title:** Concepts for Preparation and Planning in Medical Dosimetry I

Course # RAON#D601

Course Director: Colleen DesRosiers, Ph.D.

Instructor: Marvene M. Ewing, B.S., CMD

Prerequisites: Acceptance into the "Graduate Certificate Program in Medical Dosimetry"

2015: 2 credits

2016 : 3 credits

**Title:** Medical Physics for Radiation Oncology I

Course # RAON#D604

Course Director: Colleen DesRosiers, Ph.D.

Instructor: Colleen DesRosiers, Ph.D. et al

Prerequisites: Acceptance into the "Graduate Certificate Program in Medical Dosimetry" or instructor permission

1 credit

**Title:** Clinical Practicum I – General Dosimetry Introduction

Course # RAON#D606

Course Director: Colleen DesRosiers, Ph.D.

Clinical Instructor: Marvene M. Ewing, B.S., CMD

Prerequisite: Acceptance into the "Graduate Certificate Program in Medical Dosimetry"

2015: 1 credit

2016: 2 credits

#### Fall Session

**Title:** Concepts for Preparation and Planning in Medical Dosimetry II

Course # RAON#D602

Course Director: Colleen DesRosiers, Ph.D.

Course Instructor: Marvene M. Ewing, B.S., CMD

Prerequisites: Successful completion of Concepts for Preparation and Planning in Medical Dosimetry I

Suggested Course Abbreviation: *Concepts Prep & Plan Med Dos II*

2015: 1 credit

2016: 2 credits

**Title:** Clinical Oncology and Dosimetric Considerations

Course # RAON#D603

Course Director: Colleen DesRosiers, Ph.D.

Course Instructor/Coordinator: Marvene M. Ewing, B.S., CMD

Prerequisites: Acceptance into the "Graduate Certificate Program in Medical Dosimetry" or instructor permission

1 credit

**Title:** Medical Physics for Radiation Oncology II

Course # RAON#D605

Course Director: Colleen DesRosiers, Ph.D.

Course Instructor: Colleen DesRosiers, Ph.D., et al.

Prerequisites: Completion of RAON#D604

2 credits

**Title:** Clinical Practicum II # Intermediate Planning in Medical Dosimetry

Course # RAON#D607

Course Director: Colleen DesRosiers, Ph.D.

Course Coordinator/Instructor: Marvene M. Ewing, B.S., CMD

Prerequisite: Clinical Practicum I – General Dosimetry Introduction

4 credits

*Spring Semester*

**Title:** Clinical Practicum III – Advanced Topics in Medical Dosimetry

Course # RAON#D703

Course Director: Colleen DesRosiers, Ph.D.

Course Coordinator/Instructor: Marvene M. Ewing, B.S., CMD

Prerequisite: Clinical Practicum II – Intermediate Planning in Dosimetry

2015: 6 credits

2016: 8 credits

**Title:** Independent Study / Research in Radiation Oncology

Course # RAON#D701

Course Director: Colleen DesRosiers, Ph.D.

Prerequisites:

Suggested Course Abbreviation: Ind Study/Research/Rad Onc

2 credits

*Summer Session I*

**Title:** Clinical Practicum IV – Assessment Challenges in Medical Dosimetry

Course # RAON#D704

Course Director: Colleen DesRosiers, Ph.D.

Course Coordinator/Instructor: Marvene M. Ewing, B.S., CMD

Prerequisites: Clinical Practicum III – Advanced Topics in Medical Dosimetry

2015: 3 credits

2016: 4 credits

**Director**

Colleen M. DesRosiers, Ph.D.

(317) 274-0081

[cmdesros@iupui.edu](mailto:cmdesros@iupui.edu)

**Curriculum Coordinator**

Marvene M. Ewing, B.S., CMD

[mewing@iuhealth.org](mailto:mewing@iuhealth.org)

## Medical Humanities and Health Studies

**School of Liberal Arts**

**Departmental E-mail:** [medhum@iupui.edu](mailto:medhum@iupui.edu)

**Departmental URL:** <http://liberalarts.iupui.edu/mhhs/>

**Program Information:** For additional program information, contact Cavanagh Hall 141, phone (317) 274-4755, fax (317) 274-4758.

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Medical Humanities Program

The Graduate Program in Medical Humanities offers an interdisciplinary course of study drawn from the humanities and social sciences disciplines of Liberal Arts, as well as courses and participation of faculty from other schools. The field of Medical Humanities provides students with the qualitative humanistic and socio-cultural perspectives on health care, in contrast to the clinical/objective approach traditionally taken in biomedicine.

The science, study, and practice of medicine and health are multi-faceted in scope and impact. Many factors affect the outcome of health practice, which in turn, affect patients, families, and the greater public. This graduate program is interdisciplinary in nature and health-related in focus. It permits graduate students to study more comprehensively, and in-depth, the social, cultural, and humanistic determinants and consequences of human health, illness, and care. It takes advantage of the unique wealth of health-related graduate courses already offered by the School of Liberal Arts, the whole of which is even greater than the sum of its parts.

This program will be of great interest to students whether they go on to specialized training – i.e., in medicine, allied health professions, and graduate-level disciplinary or interdisciplinary studies – or for those entering (or continuing in) the health workforce.

### Graduate Certificate in Medical Humanities

The primary goal of the Graduate Certificate in Medical Humanities (15 credit hours) is to enrich students' humanities-based education and professional development as they prepare for graduate work in the health professions, or to supplement and enrich their existing degree and/or health-related career. The program provides graduate students with the opportunity to study, in-depth, medicine, health, and illness from the perspective of such disciplines as literature, philosophy, history and social science. Students view past, present, and future problems in health care from multiple and varied standpoints and work to resolve them using narrative, visual, ethical, historical, and social science methods. Through this approach, students gain greater insight into the human condition, the value of human life, the nature of suffering, and efforts to alleviate it.

In addition, the inclusion of the social sciences in the curriculum allows students the opportunity to focus on the investigation of the social and cultural construction of health, illness, and provision of healthcare using the tools of social science research. This includes understanding the cultural definitions of life/death and health/illness, the geographic and economic provision and constraints to medical and healthcare, the social and power structures that impact access to healthcare, and a familiarity with the analysis, application and limitations of social science research methods. In this way, this program develops informed graduates with analytical skills, cultural awareness, and ethical sensitivity through application, evaluation, critical analysis and synthesis.

For specific requirements and options for cross-listed courses, see the Medical Humanities web site or meet with an academic advisor. Students in other graduate programs who wish to add the Graduate Certificate to their program of study must formally apply to the Medical Humanities program separately.

### Doctoral Minor

The Doctoral Minor in Medical Humanities (12 cr.) consists of a required introductory course, followed by three approved elective courses that allow the student explore various topics in Medical Humanities. This graduate minor builds on the implementation of the graduate certificate in Medical Humanities and is interdisciplinary in nature and health-related in focus. It gives graduate students the opportunity to study more comprehensively, and in-depth, the social, cultural, and humanistic determinants and consequences of human health, illness and care. The degree takes advantage of the unique wealth of health-related graduate courses already offered by the School of Liberal Arts, the whole of which is even greater than the sum of its parts.

The graduate minor may be of particular interest to students getting a doctorate in a health-related non-Liberal Arts field, providing an opportunity to further round out and diversify the student's course of graduate study. This is of enormous value to students whether they go on to specialized training – i.e., in medicine,

allied health professions, and post-graduate disciplinary or interdisciplinary studies – or for those entering (or continuing in) the health workforce.

### Course Requirements

The Medical Humanities Graduate Certificate consists of 15 credit hours of course work, including a required introductory course (3 cr.), a clinical practicum (3 cr.), and a choice of three courses (9 cr.) from a list of approved electives.

The Doctoral Minor consists of 12 credit hours of course work, including a required introductory course (3 cr.), and a choice of three courses (9 cr.).

All courses must be passed with a grade of B or above to count for the certificate or the minor. The Clinical Practicum must be approved by a faculty advisor prior to registration. For students currently engaged in a clinical practice, a substantial research and writing project based on their clinical practice, or an additional elective, may be substituted for the practicum. Those students will register for and enroll in the Clinical Practicum, but will not be required to undertake additional clinical time to complete the course. In either case, students will work closely with a faculty mentor to complete the practicum.

#### Graduate Certificate requirements (15 cr.)

- MHHS M501 The Human Condition (3 cr.)
- MHHS M595 Clinical Practicum in Medical Humanities (3 cr.)
- Approved Electives (9 cr.)

#### Doctoral Minor requirements (12 cr.)

- MHHS 501 The Human Condition (3 cr.)
- Approved Electives (9 cr.)

### Faculty

#### Director

Emily Beckman, Assistant Professor (Medical Humanities & Health Studies)

#### Graduate Faculty

Emily Beckman, DMH (Medical Humanities & Health Studies)

Jane A. Hartsock, JD, MA (Medical Humanities & Health Studies)

Richard B. Gunderman, MD, PhD (Radiology, Pediatrics, Medical Humanities & Health Studies, Philosophy)

Brandon Brown, MD (Radiology & Imaging Sciences, Medical Humanities & Health Studies)

Margaret Gaffney, MD (Medicine, Medical Humanities & Health Studies)

Elizabeth Nelson, PhD (Medical Humanities & Health Studies, History)

Cavanaugh Hall 141, (317) 274-4755 Fax: (317) 274-4758

### Courses

#### Core Courses, Medical Humanities Graduate Certificate (6 cr.):

- MHHS, M501 The Human Condition, 3 cr. - This course is an in-depth scrutiny of the philosophy and empiricism of medical science. The nature of Medical Humanities is explored by debating issues affecting the human condition in general, and the illness experience in particular.
- MHHS M595 Clinical Practicum in Medical Humanities, 3 cr. - The clinical practicum introduces graduate students to various aspects of clinical medicine including but not limited to doctor-patient interaction, qualitative research, ethics committee meetings and patient consultation, IRB processes, Grand Rounds, Morbidity and Mortality Conferences, Nursing, Medical Social Work and hospital chaplaincy. Please note the alternative available to students who are already engaged in clinical practice.

#### **Core Course, Medical Humanities Doctoral Minor (3 cr.)**

- MHHS, M501 The Human Condition, 3 cr. - This course is an in-depth scrutiny of the philosophy and empiricism of medical science. The nature of Medical Humanities is explored by debating issues affecting the human condition in general, and the illness experience in particular.

#### **Graduate Certificate and Doctor Minor Elective Courses (9 cr.)**

- MHHS M504 Intro to Res Ethics
- MHHS M520 Culture of Mental Illness
- MHHS M592 Topics in Medical Humanities & Health Studies [Note: cannot be repeated if taken on the same topic as an undergraduate]
- MHHS M-598 Readings in Medical Humanities and Health Studies
- PHIL P547 Foundations of Bioethics
- PHIL P696 Topics in Biomedical Ethics
- PHIL P555 Ethical and Policy Issues in International Research
- COMM C592 Advanced Health Communication
- COMM C510 Health Provider-Consumer Communication
- COMM C521 Family Communication in Health Contexts
- COMM C591 Variable Topics in Health Communication
- COMM C695 Seminar in Communication and Healthcare
- SOC-R 585 Social Aspects Mental Health/Mental Illness
- SOC R515 Sociology of Health and Illness
- SOC S610 Sociology of Health and Illness Behavior
- SOC S526 Sociology of Human Sexuality
- SOC 560 Topics in Medical Sociology [Note: cannot be repeated if taken on the same topic as an undergraduate]
- ANTH A 560 Topics in Medical Anthropology [Note: cannot be repeated if taken on the same topic as an undergraduate]
- ENG L 592 Literature and Medicine [Note: cannot be repeated if taken as an undergraduate]

- HIST-H546 History of Science, Medicine and Technology, [Note: cannot be repeated if taken as an undergraduate]

## **Medical Neuroscience**

### **School of Medicine**

**Departmental E-mail:** [snri@iupui.edu](mailto:snri@iupui.edu)

**Departmental URL:** <https://medicine.iu.edu/research-centers/neurosciences/education/Medical-Neuroscience-Graduate-Program>

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### **Curriculum**

#### **Doctor of Philosophy Degree Course Requirements**

A total of 90 credit hours, including dissertation.

#### **Minor**

Twelve (12) credit hours must be taken to fulfill minor requirements in one of the following programs: bioinformatics, biostatistics, cancer/cancer biology, cardiovascular sciences, clinical research, communicating science, diabetes and obesity, health informatics, life sciences, policy analysis for biomedical sciences, therapeutic development and translation. Details for each minor are at <https://medicine.iu.edu/graduate-degrees/phd/indianapolis/curriculum>. The Medical Neuroscience Education Coordinator will assist the student in fulfilling the chosen minor requirements.

#### **Qualifying Examination**

Written and oral.

#### **Final Examination**

Oral defense of written dissertation.

The core courses for Medical Neuroscience are G780, PSY6000, N800, N801, Science Communication (one of the following: COMM-C 534, COMM-C 533, ENG-W 533), and F850. Additional appropriate courses within IUSM and IUPUI graduate school program will be accepted for credit toward the major electives with prior approval of the Program Co-Directors and Medical Neuroscience Training and Advisory committee. Students should select electives that relate closely to their area of research.

The neuroscience sections under N880 are strongly encouraged. A more comprehensive list of suggested major electives is available upon request.

#### **Major Requirements**

- G780 – Foundations of Neuroscience (6 cr)
- PHAR-F850 – Experimental Design and Grant Writing in Pharmacology and Toxicology (1 cr)
- GRDM-G505 – Responsible Conduct of Research (1 cr)
- Science Communication Course: Students take one of the following: COMM-C524, COMM-C533, or ENG-W533 (1 cr)
- PSY-60000 Statistical inference (3 cr)



- MNEU-N801 – Seminar - Topics in Medical Neurobiology (1 cr)

### Suggested Electives

- MNEU-N880 Advanced Topics in Medical Neuroscience (2 cr ea.) – *more than one section can be taken for credit. Example of topics:*
  - *Principles of Neuroimmunology*
  - *Experimental Methods and Animal Models for Neuroscience Disorders*
  - *Molecular Bases and Pathogenesis of Neurodegenerative Diseases*
  - *Synaptic Plasticity in the Central Nervous System*
- ANAT-D527 Neuroanatomy: Contemporary and Translational (3 cr)
- GRDM-B848 Bioinformatics, Genomics, Proteomics, and Systems Biology (2-3 cr)
- PHAR-G751 Advanced Concepts in Cytosolic and Nuclear Signaling Transduction (2 cr)
- GRDM-G745 Fundamentals of Intracellular Signal Transduction (1-2 cr) (note: this is a module contained within G780)
- GRDM-F761 Molecular and Cellular Physiology of Ion Transport (1 cr)
- GRDM-G817 Molecular Basis of Cell Structure and Function. (2 cr)
- GRDM-G720 Stem Cell Biology (2 cr)
- GRDM-G727 Animal Models of Human Disease (1 cr)
- GRDM-G725 Gene transfer Approaches to Clinical and Basic Research (Gene Therapy) (1 cr)
- BIOL-54410 Sensory systems (3 cr)
- BIOL-56010 Clinical and molecular aspects of neurodegenerative diseases (3 cr)
- BIOL-56800 Regenerative biology and medicine (3 cr)
- BIOL-57100 Developmental neurobiology (3 cr)
- BIOL-57310 Stem cell biology (3 cr)
- PSY-51800 Memory & cognition (3 cr)
- PSY-61500 Introduction to behavioral neuroscience (3 cr)
- PSY-62200 Animal learning (3 cr)
- PSY-I 535 Clinical neuroscience (3 cr)
- PSY-I 545 Psychopharmacology (3 cr)
- PSY-I 650 Developmental psychology \*3 cr)

### Research Credits

MNEU-N800 – Research in Medical Neuroscience (in addition to coursework hours, until 90 total credit hours have been reached. For example, if a student has the minimum of 30 coursework hours, 60 research hours are needed. If a student has 40 coursework hours, 50 research hours are needed.

NOTE 1: students who participated in the IBMG Program for PhD Study may apply **GRDM-G718: Research in Biomedical Science** towards their research credit total (2 credits each; taken three times for a total of six credits

NOTE 2: students who participated in the combined MD/PhD program may apply **GRDM-G803: Research** towards

their research credit total (3 credits; taken three times for a total of nine credits

### Medical Neuroscience Minor

Students in other IUSM/IUPUI graduate programs may select a minor in Medical Neuroscience. The Medical Neuroscience minor consists of 12 credit hours. A minimum of 6 credit hours must be neuroscience-focused courses, including, but not limited to, neuroscience courses supported by the Medical Neuroscience Program, as well as other neuroscience and brain-related courses offered within IUSM and IUPUI. There are no required courses. However, students without any didactic neuroscience exposure are strongly encouraged to take GRDM-G780. Students will work with the Co-Directors and the Education Coordinator to ensure the course content aligns well with the research interests of the student.

As new neuroscience courses become available, they may be considered for credit toward the minor. The Medical Neuroscience Training and Advisory Committee must approve any additional courses not present on this list. Courses used for a student's PhD minor cannot also be used towards the PhD major, and vice versa.

- GRDM-G780 Foundations of Neuroscience (6 cr.)
- GRDM-G743 Fundamental Neuroscience I: Electrical Signaling and Ion Channel Biology (2 cr)
- MNEU-N880 Advanced Topics in Medical Neuroscience Courses (2 cr ea.). Currently available sections:
  - Principles of Neuroimmunology
  - Experimental Methods and Animal Models for Neuroscience Disorders
  - Synaptic Plasticity in the Central Nervous System
  - Molecular Bases and Pathogenesis of Neurodegenerative Diseases
- ANAT-D527 Neuroanatomy: Contemporary and Translational (3 cr)
- GRDM-G745 Fundamentals of Intracellular Signal Transduction (1-2 cr)
- BIOL-54410 Sensory systems (3 cr)
- BIOL-56010 Clinical and molecular aspects of neurodegenerative diseases (3 cr)
- BIOL-57100 Developmental neurobiology (3 cr)
- PSY-51800 Memory & cognition (3 cr)
- PSY-61500 Introduction to behavioral neuroscience (3 cr)
- PSY-62200 Animal learning (3 cr)
- PSY-I 535 Clinical neuroscience (3 cr)
- PSY-I 545 Psychopharmacology (3 cr)
- PSY-I 650 Developmental psychology (3 cr)
- GRDM-G715 Biomedical Science I. Biochemical Basis of Biological Processes (2 cr)
- GRDM-G716 Biomedical Science II. Molecular Biology and Genetics (2 cr)
- GRDM-G717 Biomedical Science III. Cellular Basis of Systems Biology (2 cr)

### Faculty

### Program Directors



Gary Landreth, PhD, Vice Director of Education, Stark Neurosciences Research Institute (SNRI)  
Karmen Yoder, PhD, Director, Medical Neuroscience Graduate Program

William Truitt, PhD, Co-Director, Medical Neuroscience Graduate Program

Rene Baugh, MA, Manager, SNRI Education Program

### Graduate Faculty

Mentors must be Primary Members of the Stark Neurosciences Research Institute, and must meet mentorship requirements established by the Medical Neuroscience Training and Advisory Committee. A list of SNRI faculty and their research interests can be found at the following link, which is updated periodically:

<https://medicine.iu.edu/research-centers/neurosciences/Investigators>

### Courses

- **MNEU-N 800 Research in Medical Neurobiology (arr cr.)**P: Consent of instructor with whom research is being done. Supervised literature and laboratory research in selected area(s) of medical neurobiology.
- **MNEU-N 801 Seminar: Topics in Medical Neurobiology (1 cr.)** Required of all graduate students in program. Recent topics in medical neurobiology covered by literature and research reports and discussions by faculty, graduate students, and invited guest lecturers.
- **MNEU-N 880: Advanced Topics in Medical Neuroscience Courses (elective; 2 cr. ea.)** More than one section can be taken for credit. Current sections (subject to change):
  - Principles of Neuroimmunology
  - Experimental Methods and Animal Models for Neuroscience Disorders
  - Molecular Bases and Pathogenesis of Neurodegenerative Diseases
  - Synaptic Plasticity in the Central Nervous System

### Graduate

- **GRDM-G 780 Foundations of Neuroscience (6 cr.)**: This course provides an introduction to the nervous system and its disorders. The course will provide a broad-based introduction to the structure of the nervous system, its cellular composition and mechanisms through which neurons communicate and regulate behavior and cognition. The course incorporates an in-depth analysis of the current literature.

### Psychology (IUPUI)

- **PSY 60000 Statistical Inference (3 cr.)** This course introduces the foundations of inferential statistics, both parametric and nonparametric, including probability theory. Students study the general linear model, statistical analyses for inferences about mean differences (e.g., t-tests,

ANOVA) and strengths of relation (e.g., correlation, regression), and their application to research. Because Medical Neuroscience requires this course, the IBMG requirement of GRDM-G855 is waived.

## Microbiology and Immunology

### School of Medicine

**Departmental E-mail:** mkaplan2@iu.edu

**Departmental URL:** <https://medicine.iu.edu/microbiology-immunology>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Science and Doctor of Philosophy

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

#### Admission Requirements

The Graduate Record Examination General Test is required. For the Ph.D.: see IBMG requirements. For the Master of Science degree: undergraduate courses in basic biology, including cell biology and genetics; general and organic chemistry; physics; mathematics, including calculus. Biochemistry is recommended. Deficiencies should be removed during the first year of enrollment. Overall grade point average of at least 3.0 (B).

#### Master of Science Degree

Course Requirements: At least 30 credit hours, including at least 16 credits of thesis research (J810) and at least 10 credits of non-thesis course work. Non-thesis credits will include one rotation (J810, 1 cr.), G505 (1 cr.), G700 (1 cr.), and G855 (1 cr.); plus one of the following: G715, G716, or G717 (2 cr. each); plus at least 4 credits from among the following: G720 (2 cr.), G728 (1 cr.), G729 (1 cr.), G852 (2 cr.), J807 (2 cr.), J829 (2 cr.), and J842 (2 cr.). With the approval of the student's Advisory Committee and the Graduate Advisor, other courses may be substituted for those listed above. Depending on the student's interests and career goals, additional graduate courses within or outside the Department may be taken. Students will also attend the weekly departmental seminar series and attend and, starting in the second year, annually present research at the weekly departmental Research in Progress (RIP) student seminar series. MS students are encouraged to participate in a journal club in their area of study.

#### Grades

An overall average of at least a B (3.0). Only 3 credits of C (2.0) can be counted toward the required credits of didactic coursework.

#### Thesis

Required (a minimum of 16 cr of J810).

## Final Examination

Oral Defense of thesis.

## Doctor of Philosophy Degree

### Focus Areas

The major focus areas are cellular and molecular immunology and hematology and molecular microbial pathogenesis. Students entering the program may design a course of study from one of these areas through a combination of selected course work and research activities.

### Course Requirements

A total of 90 credit hours, of which a minimum of 26 credit hours must be in courses other than dissertation research. Of these, at least 12 credits will be taken in a minor of the student's choosing, and at least 14 credits of course work is required to complete the Microbiology and Immunology major. In addition to 3 rotations (GRDM-G718, MICR-J802, or GRDM-G803), each student will take G728 (1 cr.), G729 (1 cr.), and one of the following: J807 (2 cr.) or J829 (2 cr.). A student may elect to apply one or more of these courses to their minor plan of study. In that case, with the approval of the student's Advisory Committee and the department's Graduate Advisor, other courses may be substituted to fulfill the major course work. MD-PhD combined degree students may substitute other course work (see below) for G728 and G729, which overlap substantially with the medical school curriculum. MD-PhD students are required to take J807 or J829.

With the approval of the Graduate Advisor, directly admitted students who have identified a mentor prior to matriculation, and who have significant prior research experience with that mentor, may forgo laboratory rotations and instead take additional didactic coursework to complete the major. These students will be expected to take at least 1 credit of J810 each term while completing didactic coursework.

In addition to the required courses listed above, students may choose from the following courses to complete the Microbiology and Immunology major, unless a given course is taken to fulfill the student's minor plan of student (a course may not count toward both the student's major and minor plans of study): G505, G507, G700, G702, G715, G716, G717, G855, G720, G852, Phar-F 850, COMM-C 533, COMM-C 534, ENG-W 533. MD-PhD dual degree students may include any of the following courses in their major: GRDM-X 620, GRDM-X 630, GRDM-X 640, GRDM-X 660. With the approval of the student's Advisory Committee and the department's Graduate Advisor, other courses may be substituted for those listed above.

### Grades

An overall average of at least a B (3.0). Only 3 credits of C (2.0) can be counted toward the required credits of didactic coursework.

### Minor

Students must complete a minimum of 12 credit hours in a minor area of study. Microbiology and Immunology PhD students may take any minor plan of study at IUPUI or may utilize an individualized minor, in consultation with

their mentor and Advisory Committee. Specific minor programs may require or allow some of the courses listed above. If a course is taken for a minor, that course cannot also count toward the major; no course can count toward both the major and the minor.

### Qualifying Examination

Within the first 25 months of studies (18 months for combined M.D./Ph.D.), the student submits a written research proposal in the form of a grant application to the advisory committee. The student then has an oral examination administered by the advisory committee and based primarily on the written research proposal. With consent of the advisory committee, the student can request an extension of four months from the faculty to take the qualifying examination. Doctoral studies are continued if the qualifying examination and other work, including research, are deemed satisfactory by the majority of the advisory and research committees.

### Dissertation Research

Beyond didactic course work, students will enroll in GRDM-J 810 Research in Microbiology to complete the 90-credit minimum requirement. Students must complete at least 40 credits of J810.

### Final Examination

Oral defense of the dissertation.

### Other Requirements

In addition to course work and research, students will attend the weekly departmental seminar series, participate in a journal club in their area of study, and attend and, starting in their second year, annually present research at the weekly departmental Research in Progress (RIP) student seminar series.

Submission of a manuscript based on the dissertation research for publication in a primary journal in the field is required.

It is the policy of the Department that all requirements of the degree program must be completed and the final, approved thesis deposited with the University Graduate School within 5 years of the date of passing the Qualifying Examination. Failure to complete the degree within 5 years of passing the Qualifying Exam will result in dismissal from the program.

### PhD Minors Offered

#### Ph.D. Minor in Microbiology and Immunology

This minor is open to all Ph.D. students at Indiana University, except those within the IU School of Medicine whose major is Microbiology and Immunology.

Students completing the 12-credit Minor in Microbiology and Immunology will take both of the following introductory courses: G728 Fundamental Concepts of Infection and Pathogenesis (1 cr.) and G729 Introduction to Immunological Systems (1 cr.), and students will take at least one of the following advanced courses in Immunology or Microbiology: J807 Current Topics in Immunology (2 cr.) or J829 Current Topics in Molecular Genetics of Microorganisms (2 cr.). If both advanced courses are taken, the second course may be applied to the Minor Electives category (see below).

**Minor Electives:** Students may choose from the following courses to complete the Microbiology and Immunology minor: G505, G715, G716, G717, G720, G724, G725, G727, G747, G780, G805, G817, G848, G852, G855, J710, J800, J807, J829, MNEU-N880. Additional course may be used or substituted with the approval of the Department of Microbiology and Immunology Graduate Advisor.

No course with a grade below B- may count toward the minor.

**Minor Representative:** Any faculty member with a primary or secondary appointment within the Department of Microbiology and Immunology may serve as the minor representative for students completing the Microbiology and Immunology minor. The minor representative will approve the course work for this minor based on the student's interests.

### **Ph.D. Minor in Cellular and Molecular Biology of Biomedical Systems**

A minimum of 12 credit hours of course work outside the student's major department, including G865 Fundamental Molecular Biology and G817 Eukaryotic Cell Biology (unless these are required by the major department). Since the minor is intended to expose the student to both cellular and molecular biology, at least one course (and preferably two) from each area should be taken. Courses for the minor must be selected from the following list and approved by the advisory committee, the minor representative of which will be selected from outside the student's major department. Courses: Anatomy D863, D866; Biochemistry B807, B810, G817, G841; Medical and Molecular Genetics Q612, Q620, Q622; Pharmacology and Toxicology F835, Cellular and Integrative Physiology F710.

The Department is not currently admitting students to this program.

### **Faculty**

#### **Primary Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### **Distinguished Professor**

Hal E. Broxmeyer\*

#### **Chancellor's Professors**

Janice S. Blum\*, Ann Roman\* (Emeritus)

#### **Professors**

Randy Brutkiewicz\*, Alexander L. Dent\*, Roman Dziarski\* (Emeritus), Roy W. Geib\* (Emeritus), Mark Kaplan\*, David Nelson\*, Louis M. Pelus\* (Emeritus), Robert H. Schloemer\* (Emeritus), Stanley Spinola\*, Xiaofeng Frank Yang\*, Andy Yu\*

#### **Associate Professors**

Carla J. Aldrich (Emeritus), Margaret E. Bauer\*, Haitao Guo\*, Michael J. Klemsz\*, Steven Larsen\* (Emeritus), Glenn J. Merkel\* (Emeritus), Martin Richer\*, Warner Wegener\* (Emeritus), Charles E. Wilde III\* (Emeritus),

### **Assistant Professors**

Maegan Capitano, Wei Luo, Christopher Robinson, Laura Snell

### **Assistant Research Professors**

Stephanie Condotta, Wei Li, Julu Zhang, Wenwu Zhang

### **Secondary Faculty**

#### **Distinguished Professor**

Wade Clapp\* (Pediatrics)

#### **Professors**

Elliot Androphy (Dermatology)\*, Byron Batteiger\* (Medicine) (Emeritus), Darron Brown\* (Medicine), Joan Cook-Mills\* (Pediatrics), Kenneth Cornetta\* (Medicine), Kenneth Fife\* (Medicine) (Emeritus), Thomas Gardner\* (Urology), David S. Hains\* (Pediatrics), Laura Haneline\* (Medicine, Pediatrics), Roland Herzog\* (Pediatrics), Chandy John\* (Pediatrics), Reuben Kapur\* (Pediatrics), Kelvin Lee (Medicine), M.D., Ph.D. (Pediatrics), Edward Srour\* (Medicine), William Sullivan\* (Pharmacology and Toxicology)

#### **Associate Professors**

Gustavo Arrizabalaga\* (Pharmacology & Toxicology), Utpal Davé\* (Medicine), Eric Paul Hanson\* (Medicine), Mircea Ivan\* (Medicine), Travis Jerde\* (Pharmacology/Toxicology), Chinghai Kao\* (Urology), Rachel Katzanellenbogen\* (Pediatrics), Nathan Schmidt\* (Pediatrics), Weidong Xiao\* (Pediatrics), Baohua Zhou\* (Pediatrics)

#### **Assistant Professors**

Sabrina Absalon\* (Pharmacology/Toxicology), Stephen J. Jordan\* (Medicine), Andrea Shin (Medicine), Ngoc Tung Tran (Pediatrics), Tuan M. Tran\* (Medicine), Matthew Turner\* (Dermatology), Kai Yang (Pediatrics)

#### **Associate Research Professor**

Matthias Clauss\* (Physiology)

### **Courses**

- **MICR-J 510 Infectious Microbes and Host Interactions (3 cr.)P:** Graduate-level biochemistry. Emphasis on the molecular and cellular events which permit pathogenic bacteria and viruses to enter human cells and disrupt cell function while evading the host's immune system.
- **MICR-J 610 Medical Immunology (2 cr.)** Introduction to natural and acquired immune mechanisms, with consideration of their significance to medicine. Topics will include both normal and abnormal immune processes, including recovery from and prevention of disease, immune-mediated pathological processes, tumor immunology, immunodeficiency, and auto-immunity. Designed to precede and complement J602 Medical Microbiology. Department is not currently offering this course.
- **MICR-J 710 Practical Training in Teaching Clinical Microbiology and Immunology (1 cr.) P:** Consent of Instructor. This course provides practical training in teaching the fundamentals and clinical applications of microbiology and immunology

for nursing and other health pre-professional students. Students will be introduced to educational concepts, including curriculum design and delivery, and will receive hands-on experience teaching undergraduate-level microbiology and immunology with clinical applications.

- **MICR-J 800 Advanced Microbiology (arr cr.)P:** Consent of instructor. The approach to problems in microbiology, including the application of techniques of bacteriology, genetics, immunology, mycology, parasitology, virology, and zoology.
- **MICR-J 802 Introduction to Research (2 cr.)P:** Consent of instructor. Laboratory research instruction in microbiology and immunology. Purpose is to introduce students to three different research programs in microbiology and/or immunology.
- **MICR-J 805 Molecular Immunology (3 cr.)P:** B500 or equivalent; consent of instructor. Characterization of immunologically relevant molecules in terms of molecular genetics, synthesis and assembly, structure-function and evolutionary relationships, and functional roles in immune responses. Entities to be considered include members of the immunoglobulin superfamily and functionally associated molecules. Department is not currently offering this course.
- **MICR-J 806 Immunochemistry: Laboratory (arr cr.)P:** J805. C. Antigen preparation; separation and purification of antibodies; modern methods of antibody determination and analysis. Department is not currently offering this course.
- **MICR-J 807 Current Topics in Immunology (2 cr.)P:** Graduate standing, J805 or J840 or equivalent or consent of instructor. Discussion and review of current literature in selected topics in immunology. Emphasis on molecular and cellular events in lymphocyte activation and regulation. Topic varies from year to year. May be repeated for credit.
- **MICR-J 810 Research in Microbiology (arr cr.)P:** Consent of instructor. \*\*Data obtained in this course may be used to meet the thesis requirements for graduate degrees.

\*\*These courses are eligible for a deferred grade.

- **MICR-J 821 Microbial Pathogenicity (3 cr.)P:** Consent of instructor. This course will consider in detail the determinants of microbial virulence and the mechanisms of host responses to infection and how these two factors interact in the pathogenesis of infectious diseases. Department is not currently offering this course.
- **MICR-J 822 General and Medical Microbiology (3 cr.)**Lectures covering the biology of various pathogenic organisms such as bacteria, viruses, fungi, and parasites, their role in human disease with emphasis on determinants of microbial virulence, the mechanisms of host responses to infection, and the role of these factors in the pathogenesis of disease. Department is not currently offering this course.
- **MICR-J 826 Bacteriology (3 cr.)P:** J601 or J822 or their equivalent and consent of instructor. General concepts of bacteriology. Department is not currently offering this course.
- **MICR-J 828 Virology: Lecture (3 cr.)P:** BIOC B500 or equivalent and consent of instructor. Basic biological principles of viruses; agents causing

diseases in animals, including humans; interactions of animal viruses with their host cells in tissue culture. Department is not currently offering this course.

- **MICR-J 829 Current Topics in Molecular Genetics of Microorganisms (2 cr.)P:** Graduate standing, J821, J828 or G865, consent of instructor. In-depth study of a specific topic in contemporary molecular genetics of microorganisms. Topic varies; may be taken for credit more than once.
- **MICR-J 830 Seminar in Microbiology (1 cr.)P:** Consent of instructor. Provides students with background and practical experience in communication of their research. Department is not currently offering this course.
- **MICR-J 840 Mechanisms of Immune Regulation (2 cr.)P:** Consent of instructor. A current overview of the cellular mechanisms which regulate immune responses. Topics include cells and cytokines involved in antigen presentation, lymphocyte activation and function, development, and tolerance. Department is not currently offering this course.
- **MICR-J 842 Neoplastic Determinants (2 cr.)P:** G865, G817 or equivalent and consent of instructor. Focus on the genetic basis of the cancer phenotype. Consider effects of DNA sequence mutations; chromosomal rearrangements, and/or introduction of new genetic information on DNA repair, oncogene products and tumor suppressors. Intra- and intercellular consequences of these discrete alterations will be included. Department is not currently offering this course.
- **MICR-J 854 Hematopoiesis (2 cr.)P:** G817, G865, and consent of the instructor. Principles of blood cell formation, including the regulation of production, biologic function, and cell culture and recombinant DNA technologies that contribute to our understanding. Stem cells, growth factors, cytokine involvement, gene transfer/gene therapy, and clinical applications. Department is not currently offering this course.
- **GRDM-G 505 Responsible Conduct of Research (1 cr.)** The purpose of this course is to provide its students with a formal setting to learn about the basic rules and acceptable standards required for anyone conducting scientific research. It will help its students obtain knowledge and develop skills for dealing with potential ethical problems in the research laboratory on their own. This course is designed for all beginning graduate students working in the life sciences or related fields and other researchers who require basic training in the responsible conduct of research. This course fulfills the NIH requirement for training in the responsible conduct of research.
- **GRDM-G 720 Stem Cell Biology (2 cr.)**This course will cover the self-renewal, proliferation, survival, differentiation, and migration/homing characteristics of hematopoietic and embryonic stem cells, how these functions are regulated by cytokines/chemokines and other external stimuli particularly within stem cell niches, and what their clinical capabilities are and might be.
- **GRDM-G 728 Fundamentals of Infection and Pathogenesis (1 cr.)**This course will cover



concepts of host-pathogen interactions, ranging from pathogen entry, growth, and spread in the host to pathogen-mediated injury, immune evasion, pathogen survival strategies, and transmission to new hosts. Basics of bacterial, viral, and parasitic structures will be considered as they relate to pathogenesis.

- **GRDM-G 729 Immunology I: Introduction to the Immune System (1 cr.)**An introductory biomedical science, lecture-based, core course intended for all incoming basic science graduate doctoral students in the School of Medicine programs or other interested graduate students. The course will cover components of the immune system, development of the immune system, the immune response to pathogens, and immunological disease.
- **MICR-G 837 Mammalian DNA Repair and Disease (3 cr.)**P: Consent of instructor. The molecular biology of genetic repair and mutation; emphasis on human systems and human disease states related to DNA repair; mechanisms of DNA repair and regulation of DNA repair in mammalian cells. Department is not currently offering this course.

## Museum Studies

### School of Liberal Arts

Departmental E-mail: [museum@iupui.edu](mailto:museum@iupui.edu)

Departmental URL: [liberalarts.iupui.edu/mstd/](http://liberalarts.iupui.edu/mstd/)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Museum Studies Program

The Museum Studies Program provides an integration of museum history and theory with hands-on instruction in museum techniques and practices. It encompasses the scholarly exploration of museums, including their history, operations, ethics and role in society from interdisciplinary perspectives, while also training students in the technical aspects of museum work such as collections care and management, administration, education, exhibit planning and design, curatorial practices, visitor studies and technology. The program offers a master's degree and a graduate certificate. Students considering application to the certificate or degree program are welcome to take classes prior to formal admission. Students admitted to the graduate program may apply to count credits earned as a non-degree student toward their graduate credential (up to 6 credits toward the graduate certificate and up to 9 credits toward the Master's degree). Please see the Web site for admissions deadlines and current course offerings.

As an urban university, IUPUI is part of a community with a rich heritage of museums and cultural arts. Faculty appointed as Public Scholars of Civic Engagement craft relationships and sustainable partnerships with area museums and cultural institutions and involve undergraduate and graduate students in meaningful ways in those collaborations. The Museum Studies Program has an extensive network of adjunct faculty and guest lecturers who bring state-of-the-art museum

practice to the curriculum. The program also offers opportunities for student learning through the resources of the museum community with experiences such as internships; collaboration on exhibit development and design; exhibition- and collections-focused projects; collections research; collaboration with faculty on museum research projects; and participation in museum-sponsored seminars, lectures, and professional meetings. The integral role of Indianapolis museums in the Museum Studies curriculum fosters a critical, reflective, and scholarly discourse on museums that is applied to current practices and issues in the field.

#### Graduate Certificate in Museum Studies

The Graduate Certificate in Museum Studies (18 credit hours) provides students with interdisciplinary training in museum practice and knowledge of contemporary issues in the museum field. It trains students in specialized aspects of museum practice such as education, exhibit planning and design, collections care, curatorial practices, philanthropy, and nonprofit management by combining Museum Studies course work with curriculum in other IU schools (e.g., Anthropology, Public History, Philanthropic Studies, Education, SPEA, Library Science). Students are given an introduction to the history and philosophy of museums and an opportunity to focus on particular aspects of museum practice.

The Graduate Certificate may be taken as a freestanding credential or paired with graduate work in another related discipline. Because it offers an opportunity to focus on specific areas of museum practice, the graduate certificate is also a suitable credential for current museum professionals who wish to enhance their professional training or develop new specialties. For specific requirements and options for cross-listed courses, see the Museum Studies web site or meet with an academic advisor. Students in other graduate programs who wish to add the Graduate Certificate to their program of study must formally apply to the Museum Studies program separately.

Students in the Public History Program who add the Museum Studies Certificate can combine certain Public History Courses with Museum Studies offerings to complete the certificate with just one additional course. Students should consult with advisors in both programs to establish their program plan.

#### Master's Degree Course Requirements

The Museum Studies Graduate Certificate consists of 18 credit hours of course work, including an introductory course MSTD A503 (3 cr.), an internship MSTD A508 (3 cr.), four courses (12 cr.) from the Museum Studies curriculum which may include an approved course from outside the program including those in Public History, Anthropology, Education, Sociology, Public Relations, Philanthropic Studies, Non-Profit Administration (SPEA) and Herron School of Art and Design (min. 9 cr. from the MSTD curriculum). All these courses must be passed with a grade of B– or above in order to count for the certificate. Internships must be approved by a faculty advisor prior to registration. Certificates are only awarded in the months of May, August and December.



All students should file a curriculum plan with the Museum Studies office before the end of their first semester.

### Graduate Certificate requirements (18 cr.)

- MSTD A503 Introduction to Museum Studies (3 cr.)
- MSTD A508 Museum Internship (3 cr.)
- Courses (12 cr.)

In order to complete the certificate while simultaneously completing the M.A. in History (Public History concentration), students must apply and be admitted to both the History MA program and Museum Studies Graduate Certificate program and complete the requirements for both the degree and the certificate. Students should consult with advisors in both programs to establish their program plan to follow the approved course of study within both programs. The certificate must be awarded before or at the same time as the master's degree in History. Certificates are only awarded in the months of May, August and December.

The following courses fulfill requirements in both programs:

- Taking HIST H543 Internship: Practicum in Public History *when focused on museums* (4 cr.) counts as an equivalent for MSTD A508
- Taking HIST H548 Historic Administration/Museum Administration (3 cr.) counts as an equivalent for MSTD A548
- Taking HIST H542 Public History (4 cr.) may count as an equivalent for MSTD A503
- Any HIST H547 Special Topics in Public History (3 cr.) classes are approved electives for the museum studies graduate certificate curriculum
- History MA (Public History concentration) students may use up to two museum studies courses to count as the "6 credits outside the department of History" requirement.

### Master's Degree in Museum Studies

The Museum Studies M.A. curriculum (36 credit hours) consists of a required introductory course, a set of integrated core courses which provide a broad-based interdisciplinary training in museum practice, a choice of elective courses that allow the student to develop a particular specialty, and a capstone colloquium course preparing students for entry into the museum workforce. The course work is complemented by an internship that provides an opportunity for an intensive applied learning experience in a museum. The interdisciplinary curriculum and flexible structure allow students to achieve either a generalist breadth suitable for those working in smaller museums or to focus on a particular area of museum practice appropriate for a specialist on the staff of a larger museum.

Team-based and applied projects form a core learning experience in all classes and present opportunities to work with community partners as well as peers in the program. Team projects such as exhibit development and visitor studies prepare students for the collaborative approach that is central to the museum field.

### M.A. requirements (36 cr.)

- The Master's degree program consists of 36 credit hours of course work, including a required introductory course (A503) (3 cr.), core courses (A510, A512, A516, A548) (12 cr.), an internship (A508) (6 cr.), a colloquium (A530) (3 cr.), and a choice of elective courses (12 cr.) selected from the Museum Studies curriculum or approved courses from outside the program including those in Public History, Anthropology, Education, Sociology, Public Relations, Philanthropic Studies, Non-Profit Administration (SPEA) and Herron School of Art and Design. All these courses must be passed with a grade of B– or above in order to count for the degree. Internships must be approved by a faculty advisor prior to registration.
- MSTD A503 Introduction to Museum Studies (3 cr.)
- MSTD A508 Museum Internship (6 cr.)
- MSTD A530 Museum Colloquium (3 cr.)
- Core courses (12 cr.)
- Electives (12 cr.)

### Faculty

#### Director

Professor Elizabeth Kryder-Reid (Museum Studies, Anthropology)

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Professors

Owen Dwyer (Geography), Elizabeth Kryder-Reid (Museum Studies, Anthropology), Paul Mullins (Anthropology), Jean Robertson (Art History), Philip Scarpino (History),

#### Associate Professors

Holly Cusack-McVeigh (Museum Studies, Anthropology), Laura Holzman (Museum Studies, Art History), Youngbok Hong (Visual Communication), Modupe Labode (Museum Studies, History), Jennifer Lee (Fine Arts), Elizabeth Brand Monroe (History) Rebecca Shrum (History)

#### Professor Emeritus

Larry Zimmerman (Museum Studies and Anthropology)

#### Academic Advisor

Professor Elizabeth Kryder-Reid, (317)274-1406

### Courses

- **MSTD-A 503 Introduction to Museum Studies (3 cr.)** This survey of museology introduces students to the history of museums and to debates on the philosophical nature of museums and their roles in society. The course covers the types and definitions of museums, traces the history of museums, discusses contemporary museum practice and examines current issues in the museum profession.
- **MSTD-A 505 Museum Methods (3 cr.)** This survey of museum practice introduces students to methods, skills, and resources in three areas of museum work: artifacts, interpretation, and organizational administration, as well as to the ethical ramifications

of these methods (course does not count toward the Master's degree, but it does count toward the graduate certificate).

- **MSTD-A 508 Museum Internship (1-6 cr.)**P: A503 and two other museum studies graduate courses or consent of the instructor. An arranged learning experience in museum work appropriate to individual career goals, focusing on an aspect of museum practice and working with a museum mentor. May be repeated for credit.
- **MSTD-A 510 Museum Education (3 cr.)**P: A503 or consent of instructor. This survey of museum education introduces students to a variety of professional skills through exercises, projects, museum visitor observation, and in-museum classes. It covers education theory most central to museum practice, the duties of museum educators, and current issues in museum education. (Core course)
- **MSTD-A 509 Applied Research in Museums (3 cr.)**An interdisciplinary research practicum conducted in collaboration with museum studies students, faculty and museum partners. The course provides students with an opportunity to work in conjunction with museum professionals to conduct research and carry out public projects in museum settings. The course may focus on exhibition planning, public programs and symposia, curatorial projects, and national collaborations.
- **MSTD A511: Object –Based Learning**This class is about objects, broadly construed, and our relationship to them in and out of museum settings. The class examines the multiple ways that people learn from and with objects in museums using a range of disciplines including education, history, semiotics, material culture, anthropology, and psychology. Students will investigate the strategies needed to fully support learning from and with objects in the museum setting and consider how visitors learn through their transactions with objects.
- **MSTD-A 512 Exhibit Planning and Design (3 cr.)**P: A503 or consent of instructor. This course offers a survey of museum exhibit planning and design through an integration of theory and practice. The class introduces students to exhibit development, including exhibit administration, design, and evaluation, and to a variety of professional skills through hands-on exercises, exhibit critiques, museum observations, and in-museum classes. (Core course)
- **MSTD A513: Curatorial Practices** This seminar-style course will examine current and historical curatorial practices in museums and other exhibition contexts. Case studies will introduce a range of approaches to the storytelling practices involved in curatorial work. Over the course of the semester students will also develop and execute their own curatorial project.
- **MSTD-A 514 Museums and Technology (3 cr.)**P: A503 or consent of instructor. This course surveys the growing use of technology in museums. It examines applications for information management in collections, conservation science, and archives. It examines critically the use of technology in the service of education both in exhibit contexts and in the variety of educational programs and Web-based dissemination of knowledge.
- **MSTD-A 516 Collections Care and Management (3 cr.)**P: A503 or consent of instructor. A survey of techniques for the management and care of collections in museums. It covers documentation, management of collections, processes, administrative functions, risk management, and ethical and legal issues. The course also covers the physical care and conservation of collections. (Core course)
- **MSTDA517: Preventive Conservation** This course offers a theoretical and practical investigation of preventive conservation which aims to eliminate or modify conditions that encourage deterioration. Preventive conservation is the broadest technique by which preservation of museum objects and collections is achieved. Emphasis is placed on measures that prevent or reduce the potential for damage and loss. Central to preventive conservation methodology, topics include handling procedures, proper storage, environmental management, agents of deterioration, risk analysis, emergency preparedness and planning.
- **MSTD-A 518 Museums and Audiences (3 cr.)**P: A503 or consent of instructor. This course examines the ways museums seek to better understand their audiences, serve them more effectively, and strive to reach new audiences. The course looks at a broad range of visitor studies and the ways in which museums and audiences interact.
- **MSTD A521: Museum Theatre and Live Interpretation** The purpose of this course is to provide an in-depth look at the use of museum theatre and live interpretation in museum settings to advance the educational mission and nature of museums. The class examines theatrical techniques, program development and management, and interpretation approaches for a wide variety of museum exhibits and audiences.
- **MSTD-A 530 Museum Colloquium (3 cr.)**This course provides graduate students with the tools and knowledge necessary to assess, understand, and utilize the links among their education, goals, and career opportunities. It supports graduate students approaching the end of their degree program in 1) exploring the connections between the museum knowledge they have mastered and the skills they have developed, 2) framing and articulating their knowledge and skills as well as their vocational goals to others including prospective employers, 3) developing critical competencies for community-focused museum work, and 4) creating professional plans as they transition into or advance in the work force or pursue further education.
- **MSTD A531: Critical Approaches to Museum Practice** This class examines the potential of applying critical pedagogical methods to curatorial practices, interpretation, museum education, and exhibition development as a way to focus on engaging the visitor with artifacts, opening up civic discourse, and promoting deeper connection to community.
- **MSTDA540: Cultural Heritage** This course explores a variety of issues related the stewardship of cultural

property on a local, national, and global scale. Through readings, case studies, discussion, and a semester-long project, students will explore ethical, economic, legal, political, and pragmatic issues related to tangible and intangible heritage and will increase their understanding of the practices and processes of cultural heritage management.

- **MSTD-A 548 Museum Administration (3 cr.)** This course presents an overview of issues faced by administrators and mid-level managers who work in museums, historical societies, archives, special collection libraries, and other cultural resource agencies. Topics, speakers, and readings are focused on issues that are unique to agencies that collect, preserve, and interpret cultural resources. (Core course)
- **MSTD-A 560 Current Topics in Museum Studies (3-9 cr.)** Intensive graduate-level study and analysis of selected topics in museum studies. Topics will vary from semester to semester. Includes topical courses such as Museum Communication Strategies, Museums and Sustainability, Museum Ethics, Museums and Indigenous People, African-American Museums, Archaeological Curation. May be repeated three times for 9 credits.

#### Current Topics and Special Topics Course Descriptions

- **MSTDA560: Current Topics in Museum Studies (3 cr.)** Intensive graduate-level study and analysis of selected topics in museum studies. Topics will vary from semester to semester – see specific course descriptions below. May be repeated for credit.
- **MSTD A560: Current Topics: Community Collaboration & Curation (3 cr.)** This course was created for students in various fields, including anthropology, museum studies and Native studies. Students will participate in a community-based, community driven project while gaining a deeper understanding of Anishinaabe culture (Ojibwa, Odawa and Potawatomi peoples of the Great Lakes region). This course will include lectures, group discussions, and a community component off-campus that will take place at tribal museums and culture centers in the Great Lakes region (details and dates to be announced).
- **MSTD A560: Current Topics: Museums, architecture, and the politics of space (3 cr)** When museum scholars and professionals discuss the social function of the museum, they often consider how the institution operates as a temple, or place to find enlightenment, and a forum, or community center. Recognizing that this language is rooted in architecture, this course will examine the ways in which museum buildings and their grounds reflect mission, shape visitor experience, and shed light on the complex relationships between a museum and the communities it serves or alienates. Through readings, visual analysis, site visits, and discussion, students will consider exhibition spaces ranging from the converted European palaces of the eighteenth century to the recently opened National Museum of African American History and Culture in Washington, DC. Students will apply concepts and methods from our group study in independent research projects about local museums and their grounds.
- **MSTDA560: Current Topics: Museums and Indigenous People (3 cr.)** This class examines the rapidly changing relationships between museums and Indigenous peoples and explores a wide range of topics from repatriation; to appropriate and culturally sensitive care of objects; to the inclusion of Indigenous voice in exhibitions and programs. The course incorporates a range of learning methods including, video, occasional lectures, guest speakers, museum visits, and hands-on projects.
- **MSTDA560: Current Topics: Museum Ethics (3 cr.)** This course introduces current ethical concerns relevant to museums and the various audiences they serve. It focuses on the philosophical and practical dilemmas faced by exhibiting institutions in their efforts to formulate and fulfill their missions. It pays particular attention to the relationships between the governing bodies of these institutions and their staff, their intended audiences, and the source communities which they represent. The course also provides an historical framework tracing the development of these issues in order to contextualize the present situation.
- **MSTDA560: Current Topics: Issues in Native American Representation (3 cr.)** From sports mascots, tourist “junk,” and New Age paraphernalia to superb films and museum exhibits, the images of Indians presented to the public and Indians themselves become confusing and often are stereotypical. Through readings, videos, online materials, and hands-on projects using exhibits in the Eiteljorg Museum, the course will consider a wide range of issues including economics, ethics, authenticity, stereotyping, and sovereignty. Because the subject matter cross-cuts the realm of Indigenous issues, the class and readings will necessarily touch upon similar issues in non-Native American Indigenous cultures.
- **MSTD A560: Current Topics: Indigenous Object Care. (3 cr.)** This course encourages students from various fields, including anthropology, archaeology, history and museum studies, to think beyond the tangible qualities and physical care of objects made by Indigenous communities throughout the world. Students will explore the complex historical relationship between Indigenous communities and museums; consider the deeper meanings embedded in cultural heritage, intellectual property and the relationships, past and present, that define and redefine meaning. Through contemporary case studies, students will examine the ways that communities are re-shaping museum practice while simultaneously re-defining “the museum” in response to community needs and priorities. Students will be challenged to think “beyond the museum” and realize that a museum is a fully Western concept that reinforces colonialism.
- **MSTDA560: Current Topics: Museum Education Research Methods (3 cr.)** This course is an overview of the theoretical foundations of educational research and practical application of those methods in a museum setting. It incorporates an overview of techniques in museum education and visitor studies research, and emphasizes the utility of research in museum

education practices. Students will participate in project-based activities with museum professionals and researchers, as well as become active consumers, reviewers, and advocates of research in the museum field.

- **MSTD-A 595 Independent Learning in Museum Studies (1-9 cr.)** A supervised, in-depth examination through individual reading and research on a particular Museum Studies topic selected and conducted by the student in consultation with a faculty member. May be repeated three times for 9 credits.

## Nonprofit Management

### School of Public and Environmental Affairs

Departmental Email: [speaga@iupui.edu](mailto:speaga@iupui.edu)

Departmental URL: [www.spea.iupui.edu](http://www.spea.iupui.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degree Offered

Ph.D. Minor in Nonprofit Management

The minor requires 12 credit hours. Students in a Ph.D. program at Indiana University may select nonprofit management as an outside minor.

#### Course Requirements

1. The doctoral student must secure an advisor from the faculty of the School of Public and Environmental Affairs.

The faculty advisor will serve as the representative of SPEA in all examinations and other requirements of the student's Ph.D. program that pertain to the minor.

2. The minor in nonprofit management requires 12 credit hours of courses approved by the advisor.

- **Required**
- SPEA-V 522 Human Resources Management in the Nonprofit Sector
- SPEA-V 525 Management in the Nonprofit Sector
- SPEA-V 526 Financial Management in the Nonprofit Sector
- One other SPEA course including:
- SPEA-V 544 Marketing for Nonprofit Organizations
- SPEA-V 557 Proposal Writing and Grant Administration
- SPEA-V 558 Fund Development for Nonprofit Organizations
- SPEA-V 559 Principles and Practices of Social Entrepreneurship
- Other courses may be approved by the advisor.

3. A minimum cumulative grade point average of 3.0 (B) must be attained in all courses used for the minor.

4. *Special requirement for 500-level courses.* Students taking a 500-level course (and SPEA-V 602) are required to show that they have completed doctoral-level work in conjunction with the course in order to count the course for the minor. Students must alert the instructor

to their doctoral status and request additional alternative assignments. If the instructor is unwilling to provide them, the student should select a different course in conjunction with the candidate's advisor.

### Faculty

#### Graduate Faculty

(An asterisk[\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Associate Dean for Graduate and Executive Education

Dr. Jody Sundt

317-278-0426jsundt@iupui.edu

## Nursing

### School of Nursing

Departmental E-mail: [nursing@iu.edu](mailto:nursing@iu.edu)

Departmental URL: <http://nursing.iupui.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Program Information

The Doctor of Philosophy in Nursing Science (PhD degree) is offered through the University Graduate School. In addition, the School of Nursing offers a Master of Nursing Science (MSN degree) and Doctor of Nursing Practice (DNP degree). See the [IU School of Nursing Graduate Program Bulletin](#) for more information about the MSN and DNP Programs.

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

#### Doctor of Philosophy Degree

The PhD program encompasses a wide scope of scientific inquiry including Clinical Nursing Science, and Health Systems research, which includes nursing education research. Clinical Nursing Science, based on biological, behavioral, and other types of investigations, provides the scientific basis for the care of individuals across the lifespan, families, and/or communities. Health Systems research examines ways to improve health outcomes in complex systems including those related to the availability, quality, and costs of health care services. Nursing education research focuses on how students learn professional practice as well as strategies to improve educational processes and outcomes in the preparation of clinicians, nurse educators, nurse administrators, and scientists using traditional and innovative teaching strategies.

#### On-Campus and Distance-Accessible PhD Options

The Indiana University School of Nursing (IUSON) offers both on-campus and distance-accessible courses. The distance-accessible option offers BSN and/or MSN prepared nurses access to our PhD program

using distance technologies. Faculty and students use web-based courses, video conferencing, telephone conferencing, and other emerging technologies to communicate synchronously at a distance. Distance-accessible courses and faculty mentoring are coupled with two required on-campus summer intensives for all students. Admission criteria and curriculum are the same for on-campus or distance-accessible options.

### Focus Areas of Study with Wide Application

Students who pursue the PhD in Nursing Science choose one of two focus areas; Clinical Nursing Science and Health Systems, which includes nursing education science. PhD students work closely with faculty mentors utilizing the resources available at the Indiana University School of Nursing and participate in intensive research studies. Focus areas reflect faculty research strengths.

#### Clinical Nursing Science

Clinical Nursing Science concentrates on the interrelationships of health promotion, health behavior and quality of life in acute and chronic illness throughout the lifespan. This focus area includes the prevention and early detection of disabilities across the continuum of care and the enhancement of the health and well-being for individuals, families and communities.

Examples of faculty research within the focus area of Clinical Nursing Science include:

1. Improving quality of life in persons with chronic illness, including epilepsy, stroke and renal disease
2. Behavioral oncology across the cancer continuum (including cancer prevention, detection, and symptom management)
3. Family caregiving across the lifespan
4. Tailored intervention studies to improve quality of life
5. Childhood and family adaptation to chronic illness
6. Patient care safety

#### Health Systems

Health Systems operate to create structures and resources that enable individuals and communities to achieve optimal health. This focus area includes the science of nursing education, health policy, and administration.

Examples of scholarship and faculty research within the focus area of Health Systems include:

1. Nursing Education
2. Teaching and learning in web-based courses
3. Clinical reasoning
4. Assessment of learning and program evaluation
5. Health policy and public policy analysis
6. Computer systems to enhance care delivery
7. Community-based care coordination
8. Patient care simulations

### PhD Minors

The IU School of Nursing offers two different doctoral minors that are open to PhD students in other disciplines.

#### PhD Minor in Symptom Science and Self-Management

The minor is designed for doctoral students and postdoctoral fellows in health science programs. This 12-credit minor will prepare students to: 1) understand the

NIH Symptom Science Model to guide symptom research; 2) explore biological and patient-reported measures, research methods, and models relevant to symptom science; 3) examine the role of self-management in improving outcomes for people with chronic conditions; and 4) determine the components of effective self-management interventions.

Required Courses (6cr):

- NUR 702: Biological and Behavioral Foundations of Self-Management Interventions (3 cr. distance-accessible)
- NUR 703: Symptom Science: Models, Methods, and Measures (3 cr. distance accessible)

Select two additional elective courses from the following list (6cr):

- D609: State of the Science (3 cr, distance accessible)
- R601: Instrumentation and Measurement (3 cr, distance accessible)
- R605: Design and Applications of Advanced Research (3 cr, distance accessible)

#### PhD Minor in Advanced Research Methods

This minor is designed for postdoctoral fellows or PhD students enrolled in health science programs. The 12-credit minor will prepare students to: 1) understand the philosophical and historical underpinnings of quantitative research methods; 2) understand the philosophical and historical underpinnings of qualitative research methods; 3) evaluate the key tenets, procedures, strengths and limitations of advanced research designs; 4) apply advanced research methods to a program of research.

Select 12 credit hours from the below lists of courses. Advanced Methods courses placement and permissions will be evaluated to ensure prerequisites for courses are satisfied:

Core Methods courses:

- R603 Quantitative Methods
- R610 Qualitative Methods
- R601 Instrumentation, Measurement

Advanced Methods courses:

- R605 Design and Applications of Advanced Research (3cr)
- R613 Grounded Theory (3cr)
- R615 Comparative Effectiveness (3cr)

### Admission Requirements

Successful applicants must meet the following criteria and submit an online [application](#) by November 15 of each year for admission to the PhD the following summer semester (May).

Admission Criteria:

- Completion of a Bachelor of Science in Nursing or Master of Science in Nursing from a program within a regionally accredited institution of higher education. (Indiana University School of Nursing faculty retain the right to determine acceptable accreditation status of nursing programs from which applicants have graduated.)



- A baccalaureate cumulative grade point average of 3.0 on a 4.0 scale. For applicants holding a Master's degree, a cumulative graduate GPA of 3.0 or higher is required. (The master's degree GPA will supersede the baccalaureate GPA)
- Completion of a 3-credit-hour graduate level statistics course with a grade of B- or higher before the date of proposed enrollment for students applying to the MSN-PhD track only.

#### Required Application Materials:

- Official transcripts for all post-secondary coursework\*
- Confirmation of support from an IU School of Nursing faculty advisor
- Three references indicating ability to succeed in the PhD program, including at least one from a nurse faculty member who has knowledge of the applicant's academic ability
- Personal statement. A two- to three-page double-spaced essay summarizing your career aspirations and the reasons that you are seeking a PhD in Nursing Science. Note and explain your particular area of research interest. Please summarize your immediate and long-range professional goals. Describe past research, teaching, and professional accomplishment, including your scholarly presentations or experiences. Please explain what you think the achievement of a PhD will do for you.
- Evidence of the capacity for original scholarship and research in nursing, as demonstrated by reports, published and unpublished papers, or a thesis.
- Current resume or curriculum vitae
- Proof of English Proficiency for non-native English speakers
- Qualified applicants will be invited to a formal admission interview with PhD faculty

#### Opportunities for Financial Aid

Information about financial resources for doctoral nursing students including traineeships, fellowships, research teaching assistantships, and scholarships may be obtained from the Indiana University School of Nursing's Center for Academic Affairs, or by visiting our Web site at <https://nursing.iupui.edu/graduate/tuition/index.shtml>. PhD students have been successful in securing funding for their doctoral education from:

- Research Training Grants and Fellowships
- Nurse Faculty Loan Program
- The American Organization of Nurse Leaders
- The National Institute of Nursing Research
- The Mary Margaret Walter Program for Cancer Care Research
- The American Cancer Society
- The Oncology Nursing Foundation

Students interested in financial aid should consult with the Office of Student Financial Aid Services at [gradaid@iupui.edu](mailto:gradaid@iupui.edu) or <https://studentcentral.iupui.edu/funding/index.html>. Students are encouraged to complete the FAFSA. In addition, a number of nursing scholarships are available to IU School of Nursing students, awarded on an annual basis. Schol-

arships are awarded on the basis of the availability of funds in each scholarship account. The amount of each scholarship may vary from year to year and, furthermore, if adequate funds are not available, some scholarships may not be awarded every year.

All scholarship applications are reviewed and recipients selected by the Scholarship Committee of the School of Nursing.

Scholarship application forms and further information may be obtained on the IUSON website: <https://nursing.iupui.edu/undergraduate/tuition-aid/index.shtml>.

#### Curriculum Concentrations

The PhD curriculum consists of six core areas and MSN to PhD Bridge coursework totaling 90 credit hours. Up to 30 of these credit hours may be met by Master of Science course work.

1. Professional Development Core (6 cr.)
2. Nursing Theory Core (6 cr.)
3. Nursing Science Research Major (15 cr.)
4. Nursing Science Concentration (8 cr.)
5. Minor (external or internal) (9-12 cr.)
6. Dissertation (16 cr.)
7. BSN-PhD Bridge Coursework or MSN transfer credits (30 cr.)

Total: 90 credits, minimum

#### Professional Development Core: (6 credits)

- NURS D602 Responsible Conduct of Research or equivalent (1 cr.)
- NURS D701 Nursing Inquiry and Scholarship (3 cr.)
- NURS T800 Preparing Future Faculty (2 cr.)

#### Nursing Theory Core: (6 credits)

- NURS D607 Theoretical Perspectives of Nursing Science (3 cr.)
- NURS D608 Middle-Range Theory (3 cr.)

**Nursing Science Research Major (15 credits total);** the following 9 credits are required. Students select the remaining 6 credits from the list of Cafeteria Options below:

- PBHL B562 Biostatistics for Public Health II (3 cr.)
- NURS R603 Foundations of Quantitative Research (3 cr.)
- NURS R610 Foundations of Qualitative Research (3 cr.)

**Cafeteria Options: Select two methods courses from below:**

- PBHL B583 Applied Multivariate Analysis (3 cr.)
- NURS R601 Instrumentation and Measurement (3 cr.)
- NURS R605 Advanced Research Design and Interventions in Nursing (3 cr.)
- NURS R611 Advanced Qualitative Inquiry and Methods (3 cr.)
- NURS R613 Grounded Theory (3 cr.)
- NURS R615 Comparative Effectiveness Research and Patient-Centered Outcomes Research (CER/PCOR) (3 cr.)

- NURS W540 Writing for Publication (3 cr.)

### **Nursing Science Concentration (8 cr.)**

- NURS D751 Advanced Topics in Nursing Science (various topics offered) (3 cr.)
- NURS D752 Directed Research Practicum (3 cr.)
- NURS D609 State of the Science (2 cr.)

### **Internal or External Minor (9-12 cr.)**

Cognate or supporting course work from inside or outside nursing. May include minor in an alternate focus area, other approved minors, or individualized plans developed by the student's program planning advisory committee.

### **Dissertation: (16 credits)**

- NURS R899 Dissertation in Nursing (16 cr.)

### **BSN to PhD Bridge Coursework (30 cr.)**

- NURS D751 Relationship-centered Leadership (3 cr.)
- NURS N502 Theory I (3 cr.)
- NURS R505 Measurement and Data Analysis or equivalent (3 cr.)
- NURS R500 Nursing Research Methods I (3 cr.)
- Additional graduate coursework totaling (18 cr.)

### **Qualifying Exam**

After the student has completed all required course work for the PhD, students are required to take and pass a qualifying examination. The student, in conjunction with their Advisory Committee, will determine the manner in which the examination is given, which may be composed of a written and an oral component. The qualifying examination must be passed within one semester after completion of course work and at least eight months before the date the degree is awarded.

### **Oral Defense of the Dissertation (Final Examination)**

Students provide an unbound copy of the completed dissertation to each member of the Research Committee in sufficient time to read it in its entirety. After reading it, the committee members should have direct communication with the committee chairperson regarding perceived readiness for the defense. The candidate submits to the School of Nursing and the University Graduate School the Dissertation Defense Announcement e-Document noting the date, time and location of the final Dissertation Defense. The announcement must be approved by the University Graduate School a minimum of 30 days prior to the defense. The Dissertation Defense is scheduled for two hours; the first hour is a public presentation of the dissertation research. The second hour is a closed meeting with the Research Committee and student.

For rules and guidelines for final submission of the dissertation and completion of all degree requirements, students should refer to <https://graduate.iupui.edu/theses-dissertations/index.html>.

## **Faculty**

### **Dean and Distinguished Professor**

Robin P. Newhouse, PhD, RN, NEA-BC, FAAN\*

### **Associate Dean for Academic Affairs**

Rebecca Bartlett Ellis, PhD, RN, ACNS-BC\*

### **Graduate Faculty**

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### **Distinguished Professors**

Janet S. Carpenter, PhD, RN, FAAN\*

### **Edward and Sarah Stam Cullipher Endowed Chair, and Distinguished Professor**

Victoria L. Champion, PhD, RN, FAAN\*

### **Angela McBride Endowed Professor in Mental Health**

Claire B. Draucker, PhD, RN, APRN, FAAN\*

### **Centennial Endowed Professor, Innovations in Nursing Education**

Janet S. Fulton, PhD, RN, ACNS-BC, FAAN\*

### **Holmquist Professor in Pediatric Oncology Nursing**

Joan E. Haase, PhD, RN, FAAN\*

### **Sally Reahard Endowed Chair**

Susan J. Pressler, PhD, RN, FAHA, FAAN\*

### **Doris J. Froebe Endowed Professor**

Susan Rawl, PhD, RN, FAAHB, FAAN

### **Professor and Macy Faculty Scholar**

Deanna Reising, PhD, RN, ACNS-BC, FAAN, FNAP, ANEF\*

**For a complete directory of IUSON Professors,** Associate Professors, Assistant Professors, Clinical Professors, Clinical Associate Professors, and Clinical Assistant Professors, please visit the IUSON [Faculty Directory](#).

## **Courses**

See the [IU School of Nursing Graduate Program Bulletin](#) for a complete list of offerings.

### **Core Courses**

- **NURS-D 602** Responsible Conduct of Research (1 cr.) Students will develop knowledge regarding the responsible conduct of research, including conflict of interest, responsible authorship, policies for handling misconduct, data management, data sharing, policies regarding the use of animals and/or human subjects, and institutional vs. individual responsibilities for scientific integrity. This meets the NIH requirements for instruction of pre- and postdoctoral fellows.
- **NURS-D 607** Theoretical Perspectives of Nursing Science (3 cr.) This course focuses on comparison of philosophical approaches to knowledge development. Emphasis will be on concepts as building blocks of theory and approaches to concept development and analysis for theory development.
- **NURS-D 608** Middle Range Theory (3 cr.) This course focuses on evaluation of theory, the utility

of theories in research, and the influence of various theoretical perspectives on research strategies. Emphasis is on midrange, multidisciplinary theories relevant to nursing research.

- **NURS-D 609** State of the Science Seminar (2 cr.) P: NURS-D 607. This course focuses on increasing the students' understanding of how knowledge has developed relevant to their phenomena of interest. Each student will develop skills needed to critically analyze and synthesize relevant literature in the area of a specific phenomenon. Special emphasis is placed on the application on critical analysis and synthesizing skills.
- **NURS-D 701** Nursing Inquiry and Scholarship: Introduction to Doctoral Study (3 cr.) P: Admission to the Ph.D. program. C: NURS-D 607. Examination and development of knowledge, skills, and strategies to support critical and creative thinking, identification of research and evaluation interests, socialization, and development of scholarship in nursing.
- **NURS-D 721** Advanced Leadership in Complex Systems (3 cr.) This course focuses on synthesis of leadership research, theory, and organizational models within the context of health systems. Environmental influences, team relationships, partnership models, organizational culture, and achieving performance outcomes are explored and applied. Self-knowledge, strategic vision, risk-taking, and effective communication are discussed relative to complex systems.
- **NURS-D 752** Directed Research Practicum (3 cr.) P: Admission to the Ph.D. program. C: Linked in curriculum to NURS-D 751 but need not be taken concurrently. Students will develop research skills through directed study and supervised research experience. Learning is related to a NURS-D 751 focus course and the student's interest area. Multidisciplinary research experience may include, but is not limited to, pilot-testing and evaluating research methods, data collection, data analysis, and secondary analysis of existing datasets relevant to the student's research interests. This course may be taken more than once.
- **NURS-G 901** Advanced Research (Independent Study) (6 cr.) Individual assignments arranged for doctoral students.
- **NURS-J 692** Independent Study in Nursing (1-6 cr.) Individual assignments arranged.
- **NURS-R 601** Instrumentation and Measurement (3 cr.) P: NURS-R 603, NURS-R 604, or consent of faculty. This course provides an opportunity for the student to develop expertise in developing and testing the psychometric properties of an instrument to measure health-related phenomena. Content focuses on theoretical foundations of measurement, item construction, questionnaire design, and content analysis, item analysis, assessment of reliability and validity, accuracy and precision, and manuscript preparation to report psychometric properties.
- **NURS-R 603** Foundations of Quantitative Research (3 cr.) P: Doctoral students with a graduate course in research design in methods. This course is intended for students enrolled in a doctoral program who have had a graduate course in research design and methods. The focus of this course is an in-depth critique of quantitative research designs and methods including those used to test interventions. In depth critique of strengths of limitations of quantitative research will lead to development of a research study to evaluate a phenomenon of interest.
- **NURS-R 605** Design and Applications of Advanced Research Designs/Interventions (3 cr.) P: NURS-R 603, NURS-R 604. Evaluates and applies issues relevant to intervention research and health services research. Content will include intervention dosage, sensitivity, mediators and moderators, and quality assurance and feasibility of intervention delivery. Translational research, multisite research, intent-to-treat, nested designs, and outcome designs will be discussed for application.
- **NURS-R 610** Foundations of Qualitative Research (3 cr.) The focus of this course is on in-depth critique of the quality indicators for qualitative research designs. Designs, sampling methods, data collection methods, and analysis methods are evaluated for credibility, neutrality, consistency and usefulness of findings. In addition, the consistency among research questions, purpose, design, data analysis and conclusions are examined.
- **NURS-R 611** Advanced Qualitative Research Methods (3 cr.) P: NURS-R 500, NURS-R 603, NURS-R 610, or consent of faculty. Elective course provides context for deeper analysis of selective qualitative methodologies. Critical skills include developing research questions appropriate for selected methodologies and defending methodological choice. Students refine and conduct a pilot research project, including IRB submission, data collection/analysis, application of quality criteria, and preparation of a publishable research report.
- **NURS-R 613** Grounded Theory Research (3-3 cr.) P: NURS-R 610 or introductory course in qualitative methods. This course focuses on the methods of grounded theory research within the context of its origins, history and philosophical foundations.
- **NURS-R 615** Comparative Effectiveness Research and Patient-Centered Outcomes Research (CER/PCOR) (3 cr.) This course provides an overview of comparative effectiveness and patient-centered outcomes research (CER/PCOR). Topics include history, definitions, and key terms; engaging patients and stakeholders; evidence-based medicine; health technology assessment; policy issues; government and private sector roles and programs; CER/PCOR funding; role of cost and quality; and methods and standards.
- **NURS-R 702** Biological and Behavioral Foundations of Self-Management Interventions (3 cr.) This course provides in-depth analysis of the theoretical and research literature that provides evidence for biological and behavioral factors that influence self- and family management. Students will critically evaluate theories/models applicable to self- and family-management and complete an in depth analysis of self-management interventions relevant to their area of interest.
- **NURS-R 703** Symptom Science: Models, Methods, and Measures (3 cr.) This course focuses on

models, methods, and measures used in symptom science. The NIH Symptom Science Model and core symptoms of cognition, depression, fatigue, pain, and sleep will be examined. Students will critically evaluate scientific literature and conduct an in-depth evaluation of one symptom related to their area of research interest.

- **NURS-R 704** Developing Grant Applications for Health Sciences (3 cr.) In this course, students develop beginning grantsmanship skills by understanding the process of successful grant writing and common components of grant applications. Students will collaborate with research mentors/teams to develop substantive content of a grant application that has potential for funding. Students will participate in peer review and critique.
- **NURS-R 899** Dissertation in Nursing (1-9 cr.) P: All doctoral coursework and the qualifying exam must be completed. Dissertation research is facilitated through individualized research mentoring. Each semester, goals/objectives and a timeline for work to be accomplished are mutually determined by the student and chair. The student and dissertation chair meet regularly and dissertation committee members are involved as needed to ensure consistent progress.
- **NURS-R 900** Continuation in Study or Thesis (1 cr.) Following enrollment in NURS-R 899, the student must enroll every semester and first summer session in NURS-R 900 until the dissertation has been completed.
- **NURS-T 800** Preparing Future Faculty (2 cr.) P: Students should have completed one year of doctoral level coursework. This course helps students develop competencies as doctorally-prepared educators in academic and other complex organizations. Course concepts include functioning within the educational environment; understanding the relationship between teaching, research/scholarship and service and preparing to be a doctorally prepared member of the faculty.
- **NURS-W 540** Writing for Publication (3 cr.) P: Permission of the faculty. This course focuses on writing for publication. The goal is to enable students to gain skill in presenting their ideas for readers of the professional/scientific literature in any discipline. The content of the course is organized to help the student through the process from the conceptualization of an idea to submission of the paper for journal review. Achieving success and overcoming obstacles, such as lack of self-confidence in writing skills and avoidance behavior, will be emphasized. Assignments are designed to facilitate the process, and students will receive personal reviews from faculty at each stage of manuscript development. The end-product will be a paper that is ready for submission for publication.

## Nutrition and Dietetics

**School of Health and Human Sciences**

**Departmental E-mail:** ndiupui@iupui.edu

**Departmental URL:** shhsinfo@iupui.edu

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The

University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

## Curriculum

### Master of Science in Nutrition and Dietetics

The program is located at the IUPUI campus in Indianapolis and utilizes facilities throughout central Indiana. The purpose of the program is to provide an opportunity for Registered Dietitians to deepen their knowledge base and practice skills, particularly in the area of clinical nutrition. The curriculum is designed for the student who has a special interest in the nutrition requirements and provision of nutrition therapy in acute and chronic conditions, or across the lifecycle. Program affiliations throughout central Indiana provide the opportunity for the student to work with patient populations in both outpatient and inpatient settings, as well as with the general public. Students may specialize in adult nutrition.

### Degree Requirements

To earn the M.S. degree, a minimum of 36 credit hours at the graduate level are required. Candidates for this degree may petition to apply up to 8 credit hours of graduate work from other institutions or programs to this degree.

### Admission Requirements

Applicants should have a bachelor's degree from an accredited college or university, a minimum grade point average of B (3.0 on a 4.0 scale) overall, a current dietetic registration status and three letters of recommendation addressed to the Department of Nutrition and Dietetics.

The applicant must complete IUPUI Online Graduate and Professional Admissions Application and submit official transcript from all universities attended. Indiana University graduates should request that the Registrar's Office send unofficial copies of their transcript. Non-Indiana University graduates must submit at least one official transcript from each university attended. Proof of current dietetic registration status is required. A nonrefundable application fee is required.

### Grade Requirement

A minimum of a 3.0 (B) grade point average in graduate work is required for continuance in graduate study. When the grade point average of a student falls below 3.0 or the student is not making sufficient progress toward the degree, the Graduate Studies Committee will review the student's record and recommend to the dean that the student be placed on probation. Unless the student achieves a 3.0 grade point average or begins making satisfactory progress, in the next semester of enrollment, the student will not ordinarily be allowed to continue in the graduate program. For more information about academic regulations, contact the program director.

### Thesis

Students may elect to complete a thesis or a project. Contact the graduate advisor for details.

### Curriculum

Degree Requirements for the Thesis and Non-Thesis Options in the M.S. in Nutrition and Dietetics are listed below.

## Requirements

### Core Courses (19-21 credits)

#### Science Requirement (8-9 cr.)

- BIOC B500 Biochemistry (3 cr.)
- BIOL 556 Physiology I (3 cr.) and
- BIOL 557 Physiology II (3 cr.)

OR

- PHSL F503 Human Physiology (5 cr.)

#### Statistics and Research Methods (12 cr.)

- NURS R505 Measurement and Data Analysis (3 cr.) OR
- PBHL P551 Biostatistics for Public Health (3 cr.)
- NTRD N563 Research Methods in Nutrition and Dietetics (3 cr.) OR
- NTRD W520 Evidence Based Critical Inquiry in the Health Sciences\*\* (3 cr.) OR
- NTRD N598 Research in Nutrition (6 cr.)

#### Adult Nutrition Option (15-17 cr.)

- NTRD N550 Human Nutritional Pathophysiology I (3 cr.)
- NTRD N552 Human Nutritional Pathophysiology II (3 cr.)

Total 36 (for both options)

## Faculty

### Chairperson

Clinical Professor Jacquelynn O'Palka

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

M. Sue Brady (Emerita), Jacquelynn O'Palka, Karyl Rickard\*

### Associate Professors

Sara Blackburn, Judith Ernst

### Assistant Professor

Ada Van Ness (Emeritus)

### Adjunct Professors

James Lemons (Pediatrics), Donald Orr\* (Pediatrics)

### Graduate Advisor

Jacquelynn O'Palka, 224 Coleman Hall, 1140 W. Michigan Street, Indianapolis, IN 46202-5180, (317) 278-0933, [jopalka@iupui.edu](mailto:jopalka@iupui.edu)

## Courses

**SHRS-N 500 Nutrition I (3 cr.)** P: Graduate standing. Undergraduate courses in biological sciences or consent

of instructor. This course applies the principles of physiology, chemistry, and biology to describe the role of nutrition and exercise in the human body, explores the interrelated and protective role of nutrition and exercise in wellness, health promotion, and disease prevention. This course is taught online.

**SHRS-N 544 Diet Therapy (3 cr.)** P: Dietetic internship. Study of physiological and biochemical alterations that occur during disease states and their effect on nutritional requirements and methods of providing nutrients.

**SHRS-N 546 Medical Lectures (arr cr.)** Lectures by professional staff and invited guests in the health care field.

**SHRS-N 550 Human Nutritional Pathophysiology I (3 cr.)** P: N500, F503 or BIOL 557, or consent of instructor. An integrated study of the biochemical and physiological aspects of human carbohydrate and lipid metabolism with special reference to fundamental nutrition issues, including determination of nutrient quality, nutrient interrelationships, micronutrients, and energy balance in humans and in common clinical problems.

**SHRS-N 552 Human Nutritional Pathophysiology II (3 cr.)** P: N550 or consent of instructor. A continuation of N550. An integrated study of the biochemical and physiological aspects of human protein and micronutrient metabolism, including determination of nutrient quality, nutrient interrelationships, and energy partitioning in humans and in common clinical problems.

**SHRS-N 560 Review of Nutrition Standards (3 cr.)** Review of various nutrition standards including those of the United States, the United Kingdom, Canada, and the World Health Organization. Course includes a review of all cited literature for one of the nutrients listed in the Recommended Dietary Allowances.

**SHRS-N 563 Research Methods in Nutrition and Dietetics (3 cr.)** P: Graduate level statistics course or consent of instructor. Study of research methodology utilized in nutrition and dietetics. Course includes critique of literature and preparation of a grant proposal.

**SHRS-N 567 Management Issues in Dietetics (1 cr.)** P: Dietetic intern. Advanced study in institutional and hospital dietetic management including personnel, financial, operational, and regulatory issues.

**SHRS-N 570 Pediatric Nutrition I (3 cr.)** P: B500, BIOL 557, undergraduate metabolic nutrition course, or consent of instructor. An application of principles of physiology, biochemistry, and nutrition to the specialized nutrient needs and nutritional care of healthy infants, children, and adolescents and those with the most common pediatric conditions/illnesses or disorders of broad nutritional significance.

**SHRS-N 572 Advanced Pediatric Nutrition (3 cr.)** P: N550, N570, or consent of instructor. An application of principles of physiology, biochemistry, and nutrition to the specialized nutrient needs and nutritional care of infants, both pre-term and term, and patients with complex pediatric conditions/illnesses that have a significant nutritional component.

**SHRS-N 574 Nutrition Management of High Risk Neonates and Infants (3 cr.)** P: N572. An application of



physiology, biochemistry, and nutrition to the specialized nutrient needs and nutritional care of neonates, both preterm and term, who require intensive care. Discussion will include nutritional management issues related to the infant(s) during hospitalization, at discharge, and after discharge.

**SHRS-N 576 Leadership Development in Pediatric Nutrition (3 cr.)** This is an entry-level leadership development series of experiential learning activities, including a leadership development project for post-baccalaureate health care professionals and fellows.

**SHRS-N 590 Dietetic Internship (4-10 cr.)** P: Dietetic internship. Supervised clinical experience in clinical and community nutrition and food service systems management. Course meets the requirements of the Accreditation Council for Education in Nutrition and Dietetics for the postbaccalaureate experience needed for dietetic registration. Previous admission into dietetic internship required. Not applicable to a graduate degree program. May be taken for a maximum of 23 credit hours.

**SHRS-N 591 Seminar in Nutrition and Dietetics (1 cr.)** Exploration of various topics and issues in nutrition. May be repeated for a maximum of 4 credits.

**SHRS-N 593 Topics in Nutrition (1-3 cr.)** P: Consent of instructor. Exploration of a selected topic in nutrition at an advanced level. May be repeated once for credit if topics differ.

**SHRS-N 595 Readings in Nutrition (1-3 cr.)** P: Consent of instructor. Individualized readings on topics not covered in regular course offerings.

**SHRS-N 596 Clinical Dietetics (arr cr.)** Clinical study in specialized areas of dietetics. May be taken more than once with the consent of the department for a maximum of 15 credit hours.

**SHRS-N 598 Research in Dietetics (arr cr.)** Original research as approved by the department.

**SHRS-N 581 Medical Nutrition Therapy & Pathophysiology I (1 cr.)** C: SHRS P531 Physiological and biochemical alterations that occur during selected disease states, their effect on nutritional requirements and methods of providing food & nutrients to clients/patients.

**SHRS-N 582 Medical Nutrition Therapy & Pathophysiology II (1 cr.)** P: SHRS N581 C: SHRS P532 Physiological and biochemical alterations that occur during selected disease states, their effect on nutritional requirements and methods of providing food & nutrients to clients/patients.

**SHRS-N 583 Medical Nutrition Therapy & Pathophysiology III (1 cr.)** P: SHRS N581, N582 C: SHRS K508 Nutritional screening and assessment using anthropomorphic, medical, social and nutrient intake data is a necessary component of physical diagnosis.

**SHRS-N 584 Medical Nutrition Therapy & Pathophysiology IV (1 cr.)** P: SHRS N581, N582, N583 C: SHRS K504 Interrelationships between nutrients and food components, nonprescription and prescription medications, herbal compounds. Role of nutritional supplements in improving nutrient status, appropriate

use in oral feedings and nutritional support for the adult, pediatric, geriatric and pregnant patients.

## Pathology and Laboratory Medicine

**School of Medicine**

**Departmental E-mail:** [pathdept@iupui.edu](mailto:pathdept@iupui.edu)

**Departmental URL:** [www.pathology.iupui.edu](http://www.pathology.iupui.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Science in Pathology and Doctor of Philosophy

#### Areas of Specialization

Specialization is available in various areas of anatomical, clinical, and experimental pathology. Areas of emphasis are neuropathology, experimental pathology, clinical chemistry, clinical microbiology, hematopathology, immunohematology, molecular pathology, and others. All Ph.D. degree students and M.S. degree students in the Experimental Pathology and Laboratory Science tracks choose one of these subspecialties for concentrated course work and thesis/dissertation research. M.S. students in the Pathologists' Assistant track complete courses and practical experiences involving anatomic pathology techniques.

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

#### Admission Requirements

Applicants for the M.S. degree must have a bachelor's degree in clinical laboratory science (formerly medical technology), cytotechnology, microbiology, chemistry, or another biological science or have a bachelor's degree in another subject area but have completed all of the prerequisite courses for the degree track of interest. A completed application form, transcripts from all colleges attended, letters of recommendation, and scores on the Graduate Record Examination General Test must all be received before an application will be considered. A minimum grade point average of 3.0 (B) in undergraduate science courses and an interview with the graduate program committee are required. The route of entry into Ph.D. studies in pathology is through the Indiana University School of Medicine BioMedical Gateway (IBMG) program. For IBMG information, visit <http://grad.medicine.iu.edu/degree-programs/ibmg>.

#### Master of Science in Pathology Degree Course Requirements

Requirements vary, according to the area of emphasis.

#### M.S. Degree in Pathology with Emphasis in an Area of Experimental Pathology

This course of study is recommended for students who have an interest in basic science research and plan

careers as research scientists. A minimum of 30 credit hours, including completion of a graduate-level general biochemistry course with a grade of C or higher and C808 Graduate Seminar; a maximum of 2 credits of C808 can be applied toward the required 21 credit hours of course work. Most students will also take C693 General and Clinical Pathology. A grade of B or higher is required in C693. At least 21 credit hours must be in courses other than research. At least 3 but not more than 9 credits must be in research.

### **M.S. Degree in Pathology with Special Concentration in Pathology Laboratory Sciences**

This course of study is recommended for students who wish to conduct investigative work in applied laboratory science. Graduates are primed for positions involving clinical teaching, laboratory supervision, and research and development. The M.S. with special concentration in one of the subspecialty areas of clinical pathology requires at least 30 credit hours but may require up to 40 credit hours or more, depending on the area of concentration, the background of the student, and the prerequisites needed for certain advanced courses. At least 3 but not more than 9 credit hours in research, a graduate-level biochemistry course, and C808 Graduate Seminar are required; a maximum of 2 credits of C808 can be applied toward the required 21 credit hours of course work. Development of each student's curriculum of lecture and laboratory courses and of research and teaching requirements will be a joint effort of the student and the graduate advisory committee. Course work differs, depending on whether the M.S. degree is to be focused in the areas of clinical chemistry, clinical microbiology, hematopathology, immunohematology, or another clinical laboratory specialty area.

#### **Thesis**

Required for M.S. Experimental Pathology and Laboratory Science tracks. In special cases, published research may be substituted for the thesis. Consult the graduate advisor.

#### **Final Examination**

Oral, on the thesis.

### **M.S. Degree in Pathology: Pathologists' Assistant Track**

This education prepares individuals to serve as pathologists' assistants. The pathologists' assistant is a health professional, qualified by academic and practical training, who assists in providing service in anatomic pathology under the direction and supervision of a qualified anatomic pathologist. The pathologists' assistant assists in the examination, dissection, and processing of tissue samples and participates in gross autopsy dissection. Pathologists' assistants also assist with education and research in the area of anatomic pathology. This M.S. track is a 22-month program. The first year includes basic science courses in gross anatomy, histology, microbiology, and physiology. Didactic pathology techniques courses and practical experience make up the second year. Requires 40 credits: 31 course credits and 9 credits from practicum experiences.

#### **Thesis**

Not required for M.S. Pathologists' Assistant track. A thesis option is available. Consult the graduate advisor.

### **Doctor of Philosophy Degree in Experimental Pathology**

The route of entry into Ph.D. studies is through the Indiana University School of Medicine BioMedical Gateway (IBMG) program. Admitted students take a common curriculum of didactic courses and rotate in various research laboratories. Selection of a research laboratory at the end of the first academic year determines the student's degree department. For IBMG information visit <http://grad.medicine.iu.edu/degree-programs/ibmg/>.

#### **Course Requirements**

A total of 90 credit hours, of which a minimum of 35 credit hours must be in courses other than research. Required courses include a graduate-level general biochemistry course, one additional graduate biochemistry or molecular biology course, C693 General and Clinical Pathology or equivalent, and C808; a maximum of 4 credits of C808 can be applied toward the required 35 credit hours of course work. Additional appropriate courses will be identified by the student's advisory committee and may be selected from core courses in the Department of Pathology and Laboratory Medicine or other graduate basic medical science departments. A minimum of 45 credit hours in dissertation research (C859) is required.

#### **Grades**

Overall average of at least a B (3.0). A grade of C or higher in a graduate-level general biochemistry course and a grade of B or higher in C693 General and Clinical Pathology are required.

#### **Minor**

At least 12 credit hours in a related discipline or in life science involving lecture/laboratory courses other than research. If a life sciences minor is approved, a minimum of 6 credit hours must be obtained in a single department.

#### **Foreign Language**

Not required.

#### **Qualifying Examination**

Written and oral, covering course work and research proposal (in form of a National Institutes of Health grant proposal).

#### **Research Proposal**

Required (in form of a National Institutes of Health grant proposal); must be approved by student's advisory committee before completion of dissertation research.

#### **Dissertation**

Required.

#### **Faculty**

##### **Chairperson**

John N. Eble\*

## Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Distinguished Professor and Chancellor's Professor

Bernardino Ghetti\* (Medical and Molecular Genetics, Neurobiology, Psychiatry)

### Nordschow Professor of Laboratory Medicine

John N. Eble\*

### Clyde Culbertson Professor of Pathology

Thomas E. Davis, Jr.\*

### Centennial Professor of Pathology

David J. Grignon\*

### Louis Y. Mazzini Professor of Pathology

Xiao-Ming Yin\*

### Professors

Sunil Badve\*, Merrill D. Benson\*, Liang Cheng\*, Oscar W. Cummings, Thomas E. Davis Jr.\*, Hong Du\*, John N. Eble\*, Kenneth Fife\* (Microbiology and Immunology, Medicine), Roy Geib\* (Microbiology and Immunology), Bernardino Ghetti\*, Richard Gregory\* (Oral Microbiology), David J. Grignon\*, Eyas M. Hattab\*, Dean Hawley\*, Meredith Hull (Emeritus), Chao-Hung Lee\*, Diane Leland\*, Helen E.B. Michael\*, Bernadette F. Rodak (Emeritus), Lawrence Roth\* (Emeritus), Kenneth W. Ryder\*, Romil Saxena, Daniel S. Smith, James Smith\* (Emeritus), Thomas M. Ulbright (Emeritus), Cong Yan\*, Xiao-Ming Yin\*

### Associate Professors

John Baenziger, William N. Crabtree, Harvey M. Cramer\*, Magdalena B. Czader\*, Robert Emerson, Barbara Kluge-Beckerman\*, Raymond Lloyd Konger\*, Linda Marler, :, Carrie L. Phillips\*, Ruben G. Vidal\*, Xiaoyan Wang

### Assistant Professors

Shaoxiong Chen, Rong Fan, Muhammad Idrees, Jingmel Lin, Mehdi Nassiri, Amy Schmidt, Bryan Schmitt, Chen Zhang, Shanxiang Zhang, Jiehao Zhou, Michelle Zimmerman

### Graduate Advisor

Professor Diane Leland\*, IU Health Pathology Laboratory Building, Room 6002H, (317) 491-6292.

## Courses

**PATH-C 603 General Pathology (6 cr.)** Basic concepts and principles of disease processes.

**PATH-C 690 Techniques for Specimen Processing (2 cr.)** P: Graduate courses in physiology and histology. Designed for M.S. iPathologists' Assistant students. Didactic and laboratory experiences in specimen management and tissue processing methods: histotechnology techniques including specimen procurement, processing, fixation, and staining, cytologic methods and electron microscopy sample processing.

**PATH-C 691 Gross Surgical and Pediatric Pathology Techniques (3 cr.)** P: Graduate physiology, histology, microbiology, gross anatomy, and C690. Designed for Pathologists' Assistant students. Didactic and laboratory experiences emphasize proper handling and evaluation of tissues removed during surgery and examined in the surgical or pediatric pathology laboratory. Human embryology and medical photography and terminology are also included.

**PATH-C 692 Autopsy and Forensic Pathology Techniques (3 cr.)** P: Graduate physiology, histology, microbiology, gross anatomy, C690, and C691. Designed for Pathologists' Assistant students. Didactic and laboratory experiences in autopsy and forensic pathology introduce students to all phases of the human post-mortem examination, including evisceration, dissection, description of findings, and preparation of post-mortem reports.

**PATH-C 693 General and Clinical Pathology (3 cr.)** P: Graduate physiology, histology, microbiology, gross anatomy, C690, C691, and C692. Designed for Pathologists' Assistant students. Didactic and laboratory experiences introduce students to the basic concepts of pathologic processes and provide them with a working knowledge of clinical pathology testing, including chemistry, hematopathology, transfusion medicine, and microbiology.

**PATH-C 694 Systemic Pathology (3 cr.)** P: Graduate physiology, histology, microbiology, gross anatomy, C690, C691, C692, and C693. Designed for Pathologists' Assistant students. Didactic and laboratory experiences in systemic pathology provide students with a broad base of knowledge of pathologic processes in various organ systems including the nervous, pulmonary, cardiovascular, genitourinary, digestive, and musculoskeletal systems.

**PATH-C 695 Practicum for Pathologist Assistants (1-4 cr.)** P: Graduate physiology, histology, microbiology, gross anatomy, C690, C691, and C692. Designed for Pathologists' Assistant students. Students complete seven to nine month-long modules involving surgical, pediatric, autopsy, and forensic pathology at various facilities. Students also study medical ethics, laboratory operations, management, and information systems, and educational techniques.

**PATH-C 700 Clinical Chemistry I (3 cr.)** P: B500 or B800 or equivalent. Methodology, instrumentation, and interpretation with clinical correlation of procedures in the clinical chemistry laboratory.

**PATH-C 701 Clinical Chemistry II (2-3 cr.)** P: B500 or B800 or equivalent. Special clinical chemistry therapeutic drug monitoring and radioassay, radioimmunoassay, and enzyme immunoassay.

**PATH-C 800 Advanced Pathology (arr cr.)** Subject material and credit hours arranged to conform to needs of student.

**PATH-C 802 Advanced Morphologic Hematology (2 cr.)** P: Consent of instructor. A graduate-level course with emphasis on diagnostic morphologic hematology. This course covers several aspects of morphologic hematology, including erythrokinetics, myeloid and erythroid morphology, leukemia classification, myelodys-

plastic syndromes, myeloproliferative disorders, and newer concepts in diagnostic hematology.

**PATH-C 803 Diagnostic Immunopathology (2 cr.)**

P: Basic undergraduate immunology and permission of instructor. Emphasis on immunobiology and diagnostic immunopathology. This course covers several aspects of immunopathology including autoimmune disease, transplantation biology, immunodeficiency disorders, and use of molecular diagnostics.

**PATH-C 808 Graduate Seminar in Pathology (1 cr.)**

P: Consent of instructor. One-hour, graduate-level seminar series with emphasis on experimental pathology. First-year graduate students present critical literature reviews of contemporary research topics. More advanced students present proposals and reports of their research.

**PATH-C 820 Advances in Diagnostic Microbiology (3 cr.)**

Discussions of infectious diseases and agents of infectious diseases including source, clinical manifestations, pathogenesis, epidemiology, treatment, and prevention and control, and the correlation of these subjects with laboratory diagnostic methods. Contemporary subjects will be emphasized.

**PATH-C 850 Cellular Structure of the Nervous System (3 cr.)**

Cellular structure and ultrastructure of the C.N.S. in normal and experimental situations, including cell biology of neurons, astrocytes, oligodendroglia, brain macrophages, mast cells, brain vessels, and barriers. Organization of neural systems into global and point-to-point circuits; generative and regressive phenomena; and cerebral transplantation in neurodegenerative conditions.

**PATH-C 858 Experimental Pathology (5 cr.)** Review and performance of selected experiments in pathology illustrating the types of pathologic processes.

**PATH-C 859 Research in Pathology (arr cr.)** Supervised initiation of a research project in pathology, and counseling in the completion of a thesis. This course is eligible for a deferred grade.

**PATH-C 862 Basic Pathologic Techniques (5 cr.)**

Methods of the histologic and chemical laboratories of pathology; principles of examination used in the usual procedures of surgical and autopsy pathology.

**PATH-C 875 Biochemical Pathology (3 cr.)** P: C603 or B800. A survey of biochemical pathology as demonstrated by recent advances in research in pathology. Selected topics for lecture and discussion will include aspects of tissue, cellular, subcellular, and molecular pathology.

**PATH-G 556 Methods of Humane Animal**

**Experimentation (1 cr.)** The purpose of this course is to provide graduate students entering careers in life science disciplines with the opportunity to obtain training in the proper care and humane use of laboratory animals. Federal regulations and considerations in the selection of animal models will also be discussed.

**PATH-G 655 Research Communications Seminar (2 cr.)**

Study of the methodological and systematic treatments of scientific data required for effective communication through written primary and secondary research publications, oral presentations, abstracts, poster presentations, and grant proposals.

**PATH-G 890 Methods in Molecular Biology and Pathology (3 cr.)**

P: G865 or J838, and consent of instructor. Basic principles and techniques in molecular biology and pathology. Particular emphasis will be on molecular techniques that can be used to study problems related to biochemistry and pathology.

## Pharmacology and Toxicology

### School of Medicine

Departmental E-mail: [PHTXgrad@iu.edu](mailto:PHTXgrad@iu.edu)

Departmental URL: <http://pharmtox.iusm.iu.edu/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

#### Admission Requirements

Pharmacology and Toxicology Ph.D. programs participate in an "open enrollment" system named The Indiana University School of Medicine BioMedical Gateway (IBMG) Program. The IBMG Program provides a shared first year experience for all of the School of Medicine biomedical science pre-doctoral (Ph.D. program) students. The link for the IBMG program is: <http://grad.medicine.iu.edu/degree-programs/ibmg/>.

We accept MS students on a very limited basis. These degree offerings are mostly reserved for students who have started on the PhD course of study and who, for a variety of reasons, find they must end their studies before they complete their Doctorate.

Students desiring only a master's-level program must first find a faculty member in the Department who is willing to act as mentor and provide financial support. Only after the student obtains this consent from a faculty member in the department would the student's application be evaluated.

Guidelines for admissions into the Pharmacology and Toxicology MS programs:

GRE: >30% percentile on the Verbal Reasoning section

>50% percentile on the Quantitative Reasoning section

GPA: >3.2/4.0 in core science courses

English proficiency: TOEFL: >620 paper; >260 computer; >105 internet test; IELTS: >7.5

The student is responsible for contacting directly a faculty member s/he is interested in working with to arrange the research prior to submitting an application to the program. If an arrangement for master's-level training and support is secured, the faculty member must notify the Graduate Advisor in the Department of Pharmacology and Toxicology. At that point, special arrangements would be made to evaluate the student's application to start



the degree in the following fall semester. Pharmacology Program

See also "Pharmacology" in the entry for the Medical Sciences Program, Bloomington, in this bulletin.

### **Pharmacology and Toxicology Graduate Student Advisor**

(317) 274-1534

Travis J. Jerde, Ph.D., A418E VanNuys Medical Sciences Building, [tjjerde@iu.edu](mailto:tjjerde@iu.edu)

### **Degrees Offered**

Master of Science and Doctor of Philosophy

### **Master of Science Degree Course Requirements**

A minimum of 30 hours is required to fulfill the graduate requirements for a Master of Science degree. All M.S. students will be required to take a minimum of 15 hours of coursework (of that 4 hours will be research course F825 in the first year), and a minimum of additional 15 hours of research and seminar.

### **Thesis**

Required.

### **Final Examination**

Not applicable.

### **Doctor of Philosophy Degree Course Requirements**

All Pharmacology Ph.D. students will be required to take 28 hours of coursework (of that 6 hours will be rotations); an additional 62 hours will be research and seminar, for a total of 90 hours. Other requirements for completing the Ph.D. program are (1) publishing two first-author papers, or submitting a statement from the student's research committee indicating that these will be forthcoming; and (2) achieving two of the following: (a) submitting a grant application, (b) co-authoring a third paper, and (c) presenting two abstracts at regional, national, or international meetings.

### **Minor**

Students generally minor in life sciences, but have the option to minor in any program approved by the IUSM Graduate Office. Students should consult the Graduate Student Advisor in planning their program to ensure all major *and* minor requirements are met.

### **Advisory Committee**

An advisory committee is appointed when the student declares Pharmacology as their Ph.D. program.

### **Qualifying Examination**

Written and oral, over concepts and research in pharmacology.

### **Final Examination**

Oral defense of dissertation. See also "Pharmacology" in the entry for the Medical Sciences Program, Bloomington, in this bulletin.

### **Toxicology Program Degrees Offered**

Master of Science and Doctor of Philosophy

### **Master of Science Degree in Toxicology Course Requirements**

A minimum of 30 hours is required to fulfill the graduate requirements for a Master of Science degree. All M.S. students will be required to take a minimum of 15 hours of coursework (of that 4 hours will be research course F812 in the first year), and a minimum of additional 15 hours of research and seminar.

### **Thesis**

Required.

### **Final Examination**

Not applicable.

### **Master of Science track in Translational Toxicology Course Requirements**

A minimum of 30 hours is required to fulfill the graduate requirement for the accelerate program of a Master of Science in Translational Toxicology. All students will be required to take 14 hours of Foundational courses, 13 hours of Specialization Core courses (in which one will be an eight hour summer internship (F807), and a minimum of three credits of electives. All course work should be complete during the year long program.

### **Minor**

Not required

### **Advisory Committee**

Not required

### **Doctor of Philosophy Degree Course Requirements**

All Toxicology Ph.D. students will be required to take 28 hours of coursework (of that 6 hours will be rotations); an additional 62 hours required will be research and seminar, for a total of 90 hours. Other requirements for completing the Ph.D. program are (1) publishing two first-author papers, or submitting a statement from the student's research committee indicating that these will be forthcoming; and (2) achieving two of the following: (a) submitting a grant application, (b) co-authoring a third paper, and (c) presenting two abstracts at regional, national, or international meetings.

### **Minor**

Students generally minor in life sciences, but have the option to minor in any program approved by the IUSM Graduate Office. Students should consult the Graduate Student Advisor in planning their program to ensure all major *and* minor requirements are met.

### **Advisory Committee**

An advisory committee is appointed when the student declares Toxicology as their Ph.D. program.

### **Qualifying Examination**



Written and oral, over concepts and research in toxicology.

### Final Examination

Oral defense of dissertation.

### Faculty

#### Chairperson

Bryan Yamamoto\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Robert Forney Professor of Toxicology

Bryan Yamamoto\*

#### H. H. Gregg Professor of Oncology

Ahmad R. Safa\*

#### Showalter Professor

Grant D. Nicol\*

#### Paul Stark Professor

Michael R. Vasko\*

#### Andrew and Peggy Thompson Chair in Hematology/Oncology

Jian-Ting Zhang\*

#### Professors

Nikolai Broustovetski\*, Theodore R. Cummins\*, Gerry Oxford\*, William J. Sullivan, Jr.\*

#### Associate Professors

Gustavo Arrizabalaga\*, Richard M. Nass\*,  
**Assistant Professors**

Jill C. Fehrenbacher\*, Travis J. Jerde\*, Tao Lu\*

#### Clinical Assistant Professors

Jennelle Richardson

#### Research Assistant Professors

Zizheng Dong, Jing-Yuan Liu, Zhiyong Tan

#### Primary Emeritus Faculty

Sherry F. Queener\*, Joseph A. DiMicco\*, Lynn R. Willis\*

Adjunct Faculty

#### Adjunct Professors

Robert M. Bigsby\* (Emeritus, Cellular and Integrative Physiology), D. Craig Brater\* (Emeritus, Medicine), Zeruesenay Desta (Medicine), David Flockhart\* (Medicine), Maria B. Grant (Ophthalmology), Theresa A. Guise\* (Oncology), Helmut Hanenberg\* (Pediatrics), Eri Hashino\* (Anatomy and Cell Biology), Mark Kelley\* (Pediatrics), Anantha Shekhar\* (Psychiatry), Weinian Shou\* (Pediatrics), Jeffrey Travers\* (Dermatology), Fletcher A. White (Anesthesiology)

### Adjunct Associate Professors

Brittney-Shea Herbert\* (Medical and Molecular Genetics), Andy Hudmon\* (Biochemistry), David R. Jones\* (Medicine), Karen Pollok\* (Pediatrics), Daniel Rusyniak\* (Emergency Medicine), Todd Skaar (Medicine)

### Adjunct Assistant Professors

Timothy W. Corson\* (Ophthalmology), Michael Rubart-von der Lohe\* (Pediatrics), Cheikh I. Seye (Cellular and Integrative Physiology)

### Courses

- **PHAR-F 818 Principles of Medical Pharmacology (3 cr.)** P: A course in basic biology or physiology equivalent to BIOL K324 or BIOL 501. Introductory course in pharmacology and toxicology primarily for senior undergraduate students. The course provides an overview of the molecular basis of drug action and pharmacological properties of several of the major drug groups used in medical science.
- **PHAR-F 602 Pharmacology: Lecture (5 cr.)** P: BIOC B800, PHSL F613, F614. Mode of action of drugs as a basis for therapy.
- **PHAR-F 801 Introduction to Research in Pharmacology and Toxicology (1-3 cr.)** Application of basic laboratory methods to pharmacological problems. Consideration of theoretical principles, instrumentation, and applications.
- **PHAR-F 804 Introduction to Pharmacology and Toxicology I (3 cr.)** **Not currently being offered.** This course will teach the fundamental principles of pharmacology and toxicology for the beginning graduate student, as an introduction to the discipline.
- **PHAR-F 809 Neuropharmacology (3 cr.)** P: F598 or F602 and BIOC B835, or permission of instructor. **Not currently being offered.** Drugs which affect the nervous system, with particular emphasis on their central action. Although neurochemical effects will be stressed, evidence from neurophysiology and behavior will also be considered.
- **PHAR-F 812 Research in Toxicology (1-12 cr.)** Independent laboratory research to fulfill dissertation requirements for either a master's or a doctorate degree in toxicology. Students must be enrolled in graduate studies in the Department of Pharmacology and Toxicology to register for this course.
- **PHAR-F 813 Clinical Pharmacokinetics (3 cr.)** Offered Spring of even numbered years. Design and complete mathematical analysis of pharmacokinetic studies in humans. The clinical utility of pharmacokinetics will be stressed, but the course will also have definite value for those involved with drug studies in animals.
- **PHAR-F 816 Clinical Toxicology (3-5 cr.)** P: P598 or F602. Signs and symptoms resulting from common poisons and drugs. Chemical analyses as aids in diagnosis.
- **PHAR-F 819 Chemical Carcinogenesis (3 cr.)** This course examines the biochemical and molecular mechanisms by which chemicals cause cancer. Emphasis will be on the uptake, metabolism, cellular targets and specific stage(s) of the cancer process that are affected by chemical carcinogens.

Discussions will expand on the basic principles of carcinogenesis as they apply to the latest advances in the field. **Not currently being offered.**

- **PHAR-F 820 Cancer Chemoprevention (3 cr.) Not currently being offered.** This course will examine the biochemical and molecular mechanisms of natural and synthetic cancer chemopreventive agents.
- **PHAR-F 825 Research in Pharmacology (1-12 cr.)** Independent laboratory research for fulfilling dissertation requirements.
- **PHAR-F 826 Seminar in Toxicology (1 cr.)** Literature and research reports by students and staff.
- **PHAR-F 830 Seminar in Pharmacology (1 cr.)** Literature and research reports by students and staff.
- **PHAR-F 835 Molecular Mechanisms of Drug Action (3 cr.) Not currently being offered.** Biochemical mechanisms underlying drug actions and reactions including toxicologic effects of drugs will be covered, with emphasis on molecular mechanisms involving drug receptor interaction, the actions of drugs and hormones on regulatory mechanisms in various disease states.
- **PHAR-F 836 Physiological Disposition of Drugs (3 cr.)** Factors affecting the absorption, distribution, metabolism, and excretion of drugs will be discussed in terms of environmental, biochemical, and physiochemical parameters. Pertinent literature will be reviewed and special problems discussed.
- **PHAR-F 838 Cellular and Molecular Toxicology (3 cr.)** This course examines the cellular mechanisms that mediate xenobiotic toxicity at the cellular, biochemical and molecular level. The course emphasizes mechanisms through which toxic chemicals act to evoke cell injury and cell death.
- **PHAR-F 840 Advanced Topics Pharmacology (2-5 cr.)** P: F598 or F602. Advanced studies of pharmacodynamic mechanisms in cardiovascular, central nervous system, and renal pharmacology and toxicology. Experimental design related to recent advances and current hypotheses concerning drug action and toxicity. May be repeated three times for credit.
- **PHAR-F 841 Advanced Topics in Toxicology (1-3 cr.)** This course will involve a series of lectures and discussions on new advances in toxicology. The course will focus on metabolic, cellular, and molecular mechanism by which toxic agents produce injury.
- **PHAR-F 850 Experimental Design Analysis/Grant Writing (1 cr.)** P: F598 or F602. This course presents experimental methods and data analysis used in pharmacological and toxicological experimentation. Emphasis will be on experimental design.
- **GRAD-G 743 Fundamentals of Electrical Signaling and Ion Channel Biology (1 cr.)** Experimental basis for cellular and molecular concepts of electrical excitability and membrane transport through ion channels. The goals are to foster an understanding of how we accumulate information and to provide students with tools to evaluate hypotheses and to define unanswered questions, rather than provide current "facts" to memorize.
- **GRAD-G 747 Principles of Pharmacology (1 cr.)** This course is intended for incoming basic science doctoral graduate students in the School of Medicine Pharmacology & Toxicology programs or other interested graduate students. This course covers the basics of drug-receptor interactions, drug metabolism, pharmacogenetics, and pharmacokinetics. This course will include PowerPoint presentations and student presentations.
- **GRAD-G 748 Principles of Toxicology 1 (1 cr.)** This course will present the fundamental concepts of toxicology necessary to understand the effects of chemicals on human health. Cellular and molecular mechanisms involved in toxic responses elicited by pharmaceutical and environmental agents, activation and detoxification of drugs and chemicals, and the principles of carcinogenesis and mutagenesis will be presented.
- **GRAD-G 754 Principles of Toxicology 2 (1 cr.)** Xenobiotic-induced target organ toxicity will be discussed with respect to the biological and/or chemical factors that influence toxicity at a tissue site, the modes of action for producing damage, and the methodology used to measure injury. This course is designed to provide a foundation for understanding the complex interactions between toxicants and biological systems from a basic science approach.
- **GRAD-G 755 Principles of Toxicology 3 (1 cr.)** The effects associated with specific classes of chemicals, including chemical agents that either demonstrate a great chance for injury and/or pose significant potential for human exposure will be presented. The chemical classes covered will include selective metals, solvents and alcohols, pesticides, plastics, and gases.
- **PHAR-F 808 Myocardial Biology (3 cr.)** The cellular biology of muscle, with emphasis on the regulation of the internal ionic milieu and its effect on function of cardiac cells. The contractile proteins and the ion transport systems, Na<sup>+</sup>, K<sup>+</sup> -ATPase, sarcoplasmic reticulum, and mitochondria will be considered in detail. **Not currently being offered.**
- **GRAD-G 745 Fundamentals of Intracellular Signal Transduction of Neurons (2 cr.)** Experimental basis for cellular and molecular concepts of intracellular signaling cascades. The goals are to foster an understanding of how we accumulate information and to provide students with tools to evaluate hypotheses and to define unanswered questions, rather than provide current "facts" to memorize.
- **PHAR-G 751 Advanced Concepts in Cytosolic and Nuclear Signal Transduction (2 cr.)** This course is designed to give graduate students in biological sciences a state-of-the-art education in cellular signaling mechanisms and the methodology used to study them. Landmark and breaking scientific journal articles.

## Philanthropic Studies

### Lilly Family School of Philanthropy

Departmental URL: [philanthropy.iupui.edu](http://philanthropy.iupui.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

The Lilly Family School of Philanthropy's degree programs bring together an understanding of how philanthropy works with why people give. The school emphasizes a comprehensive approach to the study of philanthropy in society that gives you the knowledge and understanding to be active in the nonprofit field. This broad approach gives you more choices throughout your life to pursue your passions and improve your community locally or globally.

New courses and degree programs develop rapidly. For up-to-date information, please contact the Lilly Family School of Philanthropy ([philanthropy.iupui.edu](http://philanthropy.iupui.edu)).

### Degrees Offered

Located on the IUPUI campus, the school offers an undergraduate degree, the first Bachelor of Arts Degree in Philanthropic Studies. On the graduate level we offer master's and doctorate degrees. We value a multi-disciplinary approach to understanding philanthropy, with courses in the humanities, social sciences, and professions. The school's research and learning environment includes Lake Institute on Faith & Giving, the Women's Philanthropy Institute, the Mays Family Institute on Diverse Philanthropy, The Fund Raising School, the Research Department, the Payton Philanthropic Studies Library, the Ruth Lilly Archives, and the Center for Service and Learning.

### Master of Arts in Philanthropic Studies

#### Admission Requirements

The Master of Arts in Philanthropic Studies is a gateway to understanding the social, cultural, political, and economic roles played by philanthropy and nonprofit organizations, and facilitates broad understanding that prepares graduates for leadership practice within the nonprofit sector. Students gain experience in understanding and applying cutting-edge research and develop critical thinking skills about the complex issues confronting the nonprofit sector.

This 36-credit-hour graduate program includes 27 hours of core course work, 9 hours of electives, OR a 9-hour thesis option in lieu of electives.

#### Application Deadlines

Summer/Fall Admission Deadlines:

- **On-campus—April 1** (applications accepted through July 15 as space permits)
- **Executive—April 1** (applications accepted through July 15 as space permits)
- **Online—June 1** (applications accepted through July 15 as space permits)

Spring Admission Deadlines:

- **On-campus—October 15** (must apply by this date to be considered for financial assistance; applications accepted through November 15 as space permits)
- **Executive—October 15** (applications accepted through November 15 as space permits)
- **Online—October 15** (applications accepted through November 15 as space permits)

#### Admission Requirements

**Prior Academic Work:** A bachelor's degree from an accredited college or university is required with a minimum of a 3.0 overall grade point average (on a scale of 4.0), and a minimum of a 3.0 average in your major field. Applicants with a grade point average below 3.0 may be considered for conditional admission.

- Official undergraduate and graduate transcripts should be mailed to: Student Services, Lilly Family School of Philanthropy, University Hall, Suite 3000, 301 University Blvd., Indianapolis, IN 46202.

**Graduate Record Examination General Test:** Applicants are expected to demonstrate an appropriate level of proficiency on the GRE or a comparable proficiency test (i.e., GMAT, LSAT). Results from the Graduate Record Examination taken within the past five years are required.

- Please use the IUPUI code R1325

**TOEFL:** Applicants whose native language is not English must pass the TOEFL with a score of 69 or higher.

**Recommendations:** Three letters of recommendation to the Admissions Committee are required. Preference will be given to those candidates who can demonstrate ability to successfully perform academic work. In selecting your recommenders, try to select those people who can best speak to indications of your ability to successfully do academic work. If a recommender is not in an academic environment, encourage him/her to assess your knowledge, skills, and abilities as they relate to your ability to do academic work.

**Statement of Purpose:** Preference will be given to those candidates whose goals and interests, broadly speaking, match those of the Master of Arts in Philanthropic Studies and its curriculum.

**Résumé:** Please send updated résumé to the Office of Student Services.

### Ph.D. in Philanthropic Studies

Our doctoral program trains future scholars and professionals in conducting original research on philanthropy and related topics. The Ph.D. program engages both humanities and social science theory to prepare you to make an original contribution to the field.

Doctoral students have examined a wide range of topics including the history of philanthropy, why people give, the role of nonprofits in policy, the effectiveness of foundations and faith-based initiatives, and the role of social movements in society.

Students take two years of coursework **on campus**, pass qualifying exams, defend a dissertation proposal, then research, write, and defend a final dissertation. You should plan to complete coursework, pass exams, and

defend your dissertation proposal within three years of full-time enrollment.

All doctoral students submit annual progress reviews to the director of graduate programs and their research committee chair.

### Admission eligibility

Students [apply online](#) through the IUPUI Graduate School. You must have a master's degree in a field relevant to philanthropic studies. Other requirements include a statement of research interest that identifies [Lilly Family School of Philanthropy faculty](#) with whom you seek to work, a résumé, undergraduate and graduate school transcripts, standardized test scores such as the GRE, and letters of recommendation that attest to the your ability to conduct original research.

**Graduate Record Examination General Test:** Applicants are expected to demonstrate an appropriate level of proficiency on the GRE or a comparable proficiency test (i.e., GMAT, LSAT). Results from the Graduate Record Examination taken within the past five years are required.

- Please use the IUPUI code R1325

TOEFL: Applicants whose native language is not English must pass the TOEFL with a score of 69 or higher.

### Ph.D. outcomes

We admit approximately four or five full-time students annually to the doctoral program. From 2004–2015, doctoral students completed their degree in an average of 6.25 years. One hundred percent of Ph.D. graduates who sought employment were employed in tenure track (75 percent) or high-level philanthropic professional positions (25 percent).

### Financial support

One hundred percent of our Ph.D. students, who are enrolled full-time, receive financial support in the form of tuition scholarships, health insurance, and an assistantship stipend for up to four years. Tuition scholarships are 88 percent of tuition for in-state students and 95 percent of tuition for non-resident students. To be eligible, you must work 20 hours per week as a research assistant or teaching assistant, attend monthly doctoral student meetings, and attend regular research seminars.

### Requirements

Students must complete at least 90 credit hours, 30 of which often can transfer from a completed master's degree program. Of the remaining 60 credit hours, 42 credit hours are coursework and 18 hours are dissertation research credits. Course work includes five core courses, three methodology courses, four courses in your minor field, and two electives.

You will identify your minor field of study and minor field advisor within your first year on campus, and pursue a variety of minor fields including Africana studies, business, economics, higher education, history, nonprofit management, philosophy, political science, religious studies, and sociology.

### Accelerated BA-MA

The B.A./M.A. accelerated option provides an opportunity for high-ability students who have excelled academically to enter the workforce with both a B.A. and M.A. within

five years. Since its inception as a school in 2013, the Lilly Family School of Philanthropy has identified several students who would have qualified for such an opportunity. The B.A./M.A. graduates will be well prepared to enter the philanthropic sector one year sooner with this accelerated option. Students in our bachelor's degree program who demonstrate academic excellence and aptitude for graduate level work are encouraged to apply to our accelerated B.A./M.A. program.

- Students submit an application to the M.A. program in their third year of the B.A. program.
- The application requires three letters of recommendation, résumé, and a statement of purpose. Applications to the accelerated B.A./M.A. program do not need to submit GRE scores.
- Students must have a minimum 3.3 GPA to be considered for admission. Students with a 3.3 or higher GPA are not guaranteed admission. The Admissions Committee will evaluate the entire application when considering an applicant's status.
- **Duplicative Courses**
- Two areas of study, fundraising and ethics of philanthropy, are required at both the B.A. and M.A. level. The Lilly Family School of Philanthropy has chosen to eliminate two potentially duplicative courses, one at the B.A. level and one at the M.A. level. Students enrolled in the B.A./M.A. joint degree program will take one of the M.A. ethics courses in lieu of PHST-P401 at the B.A. level. These students will take an additional M.A. elective in lieu of PHST-P558, because the B.A. fundraising course contains similar content and rigor. Students may take one of the advanced fundraising electives upon admission to the M.A. program.

The suggested plan of study for the accelerated B.A. and M.A. in Philanthropic Studies is:

Semester	Courses	Mode
Fall	P521 Nonprofit and Voluntary Sector	In person (T) <i>Waived</i>
	P558 Principles of Fundraising ( <i>waived</i> )	
Fall/Spring	P530 elective or research ( <i>in lieu of 1 advanced BA course</i> ) – 3 courses	TBD as offered
Fall/Spring Rotations	P556 Grantmaking and the Role of Foundations	Online – Fall In person (T) – Spring
P515 History or HIST H516 History	Online – Fall In person (W) – Spring	
PHIL-P542 Ethics	In person (W) – Fall ( <i>in lieu of P401</i> ) or Online - Spring	



P532 Ethics ( <i>in lieu of P401</i> )	
P524 Civil Society	In person (Tr) – Fall
	Online – Spring
P535 Law of Nonprofits	In person (M) - Fall
	Online – Spring/summer
P530 Economics or	Online – Summer/fall
ECON-E514 Economics	In person (MW)
Summer	TBD as offered
	P590 Directed Off-site Study ( <i>in addition to P490</i> )

### Dual Degree Programs

You can earn two master's degrees in related areas of interest in fewer credit hours than if you obtained each degree separately. By completing the dual degree option, you will have a richer education experience than you would receive through an individual degree. Upon graduation, you are more marketable because you will have a deeper awareness and knowledge of the types of organizations in which you may work. The dual degree programs are recommended if you are planning to:

- Pursue a doctoral degree
- Work in research
- Enter a specialized profession requiring in-depth knowledge of two related areas

### Master of Arts in Philanthropic Studies and Master of Jurisprudence (48 credit hours) or Juris Doctor (108 credit hours)

We are partnering with the Robert H. McKinney School of Law to offer a joint master's degree program. [Learn more about this program.](#)

### Master of Arts in Philanthropic Studies and Master of Public Affairs in Nonprofit Management

You will learn the whys and how-tos of philanthropy and nonprofits through this option. If you are interested in becoming a reflective practitioner, this program is designed for you. An education in both the technical and conceptual aspects of philanthropy increases your value in the job market. The Dual Master of Arts in Philanthropic Studies and Master of Public Affairs in Nonprofit Management totals 54 credit hours, in lieu of 75 hours for completing each degree separately.

### Master of Arts in Philanthropic Studies and History (51–54 credit hours)

The M.A. degree in philanthropic studies and history creates a unique opportunity for you to explore the historical, cultural, philosophical, and economic implications of philanthropy. Historians routinely study the role of nonprofit organizations, self-help groups, and

philanthropic institutions, and their contributions to the development of civil society and the modern world.

This dual degree program gives you rich insights into the important social relations of class, gender, and race in the last century. It offers an interdisciplinary focus on how philanthropy has affected the past, present, and future, and is attractive if you pursue:

- Careers that demand skills and talents developed by cross-training in history and philanthropy
- Doctoral programs that encourage new and creative approaches to the historical study of philanthropy, broadly defined

### Masters of Arts in Philanthropic Studies and Master of Library Science (51 credit hours)

You can prepare for management careers in libraries and nonprofit institutions by earning dual degrees in library science and philanthropic studies. Content includes management of special library programs, fundraising and endowment management, and capital project management. Opportunities can be found with academic, corporate, or large public libraries.

### Master of Arts in Philanthropic Studies and Economics (51 credit hours)

You will be prepared to enter professional practice, work in independent research or academia, or pursue a Ph.D. with this option. The M.A. in economics provides you with the principles and methodologies to make informed decisions on policy and management, and the M.A. in philanthropic studies gives you the background on the institutions with which you will be working. This program provides you with an analytical and quantitative study of economics and its relation to public policy and nonprofit organizations. Whether you enter the private, government or nonprofit sector, this basis of study will enhance your career performance.

### Required M.A. curriculum (all courses are 3 credit hours) – 27 total credit hours

- Nonprofit and Voluntary Sector PHST-P521
- Civil Society in Comparative Perspective PHST-P524
- Law of Nonprofit Organizations PHST-P535
- Grantmaking and the Role of Foundations PHST-P556
- Principles and Practices of Fundraising PHST-P558
- History of Philanthropy HIST-H516 or PHST-P515
- Nonprofit Economy and Public Policy ECON-E514 or PHST-P530
- Ethics and Values of Philanthropy PHIL-P542 or Applying Ethics in Philanthropy PHST-P532
- Graduate-level elective in PHST as approved by Director of Graduate Programs
- 2 electives (6 credits) and P590 Internship (3 credits) required in the standalone degree are *waived*

### Required M.P.A. curriculum (all courses are 3 credit hours) – 27 total credit hours

- Statistical Analysis for Effective Decision Making SPEA-V506
- Human Resource Management in Nonprofit Organizations SPEA-V522
- Management in the Nonprofit Sector SPEA-V525



- Financial Management for Nonprofit Organizations SPEA-V526
- Law and Public Affairs SPEA-V540
- Public Program Evaluation SPEA-V562
- Governing and Leading in a Global Society SPEA-V598
- Capstone in Public and Environmental Affairs SPEA-V600
- Graduate-level elective in SPEA as approved by Director of Student Services
- Electives (6 credits) required in the standalone degree are waived

### Graduate Certificate in Philanthropic Studies

The Graduate Certificate in Philanthropic Studies provides students with education in the field of philanthropic studies. The degree program introduces students to the critical issues and values of philanthropic practices. It is designed for those who have an interest, and perhaps career need, for this education but who do not wish to pursue an M.A. or Ph.D. in Philanthropic Studies. It will provide opportunities both for students interested in learning more about the field as well as career professionals looking to expand their knowledge. The certificate may be completed on its own or in conjunction with other graduate study, e.g. museum studies, public affairs, or public health.

The student must have a bachelor's degree or higher from an accredited college or university with a minimum GPA of 3.0 to apply. Applicants with a GPA below 3.0 may be considered for conditional admission.

Those interested should apply online through the IUPUI graduate school, but no letters of recommendation or GRE are required. Applicants whose native language is not English must pass the TOEFL with a score of 69 or higher.

### Faculty

Our strength is our talent: our founders, our outstanding faculty, experts and thought leaders, and especially our students who will take the research and wisdom created here and apply it to improve the world. Throughout their careers, they can call upon the rich perspectives we nurtured to inform their ultimate contributions to our economic, social, and civic commonwealth.

» [Meet our Core Faculty](#)

» [Meet our Affiliate Faculty](#)

» [Meet our Adjunct Faculty](#)

### Courses

#### Core Courses

- **PHST-P521 Nonprofit and Voluntary Sector**  
Students examine issues of why people organize, give, and donate time; theories of the sector; policy formulation in the sector, etc., with the objective of becoming "philanthropically literate." The preferred first course in the M.A. program.
- **PHST-P524 Civil Society in Comparative Perspective**  
The course explores the relationship of civil society to the state, how the nonprofit sector affects the state, and how the state regulates the sector. A continuing theme is how and whether the state and philanthropic institutions make civil investments in strengthening civil society.
- **PHST-P535 Law of Nonprofit Organizations**  
This seminar examines aspects of the legal regulation of nonprofit organizations. Topics include the formation, operation, and governance of nonprofit organizations, duties and liability of officers and directors, charitable solicitation, tax-exempt status for public benefit and mutual benefit organizations, charitable contributions, political activities, foundations, membership organizations, and religious organizations.
- **PHST-P556 Grant Making and the Role of Foundations**  
This course explores questions of legitimacy, effectiveness, and accountability among U.S. philanthropic foundations. Students will explore the role of foundations in society, how roles are successfully fulfilled, how role fulfillment is measured, and what current trends in foundation philanthropy might mean for the future of local and global philanthropy.
- **PHST-P558 Principles and Practices of Fundraising**  
The course covers the salient aspects of the fundraising process as organized carried out by nonprofit organizations – its base of core values, preparing a case for philanthropic support, relevant techniques and strategies, assessing potential sources of support, effective engagement of human resources, and process management. The course includes relevant theory to undergird practice, examination and analysis of current practice, proposal of practice standards, and discussion and examination of ethical problems in fundraising.
- **PHST-P590 Internship/Directed Off-Site Study**  
A course for the advanced student of philanthropy. Students work 10 hours per week for a nonprofit organization, applying knowledge gained in earlier courses to practical situations. Requirements include a journal and a substantial paper.
- **PHST-P515/HIST-H516 History of Philanthropy**  
This course examines traditions of giving and receiving charity and philanthropy in the modern era. It takes a comparative approach to giving including different historical contexts and traditions. Among the topics covered will be donor motivations, definitions of need, identity formation, and philanthropy, politics and social change.
- **ECON-E514/PHST 530 Nonprofit Economy and Public Policy**  
Students examine the role of nonprofit organizations (universities, churches, hospitals, orchestras, charities, day care, research, nursing homes) in mixed economies. Public policy controversies such as regulation of fundraising, antitrust against universities, "unfair" competition with for-profit firms, and the tax treatment of donations are considered.
- **PHIL-P542/PHST 532 Ethics and Values in Philanthropy**  
This course reflects an inquiry into the ethics and values of philanthropy rooted in a general understanding of philanthropy, as voluntary action for the public good, as an ethical ideal. Students consider philanthropic activity in light of this ideal.

## Elective Courses

- **PHST-P518 History of International Humanitarian Assistance**

This course covers the history of international humanitarian assistance during the 19th and 20th centuries. Its focus is on the movements and activities that developed in wealthier countries (Europe and the U.S.) during this period which attempted to help those in other lands in need of assistance (e.g., food, shelter, medical care). These needs arose from a variety of causes, both natural and man-made, such as famine, flood, epidemics, earthquakes and volcanoes as well as wars and government oppression. The responses took many forms, governmental and non-governmental, in a world that underwent very dramatic changes during the 19th and 20th centuries.

- **PHST-P527 Cross-Cultural Dimensions of Philanthropy**

Examines cross-cultural research on philanthropy and pursues critical inquiry into the historical and cultural implications of philanthropy. The course focuses on the diverse system of giving and serving within philanthropy traditions in the United States and around the world.

- **PHST-P534 Gender and Philanthropy**

This course provides a broad overview and deeper understanding of giving and volunteering by gender from multiple perspectives, and how this knowledge can be applied across the nonprofit sector today. As the 21st century unfolds, nonprofit practitioners – whether CEO, fundraiser, board member, or volunteer – and donors must recognize that neither philanthropy nor fundraising follow a one-size-fits-all format. Woven throughout this curriculum are examples of how women exercise their power and influence in philanthropy.

## PHST-P530 Variable Topics

- **PHST-P530 Donor Motivation and Planned Giving**

This course will develop students' understanding of the motivations and behaviors of high net worth individuals, and their ability to plan effective strategies for donor identification, cultivation/education/ engagement, solicitation, and stewardship in support of major and planned gifts. Special attention will be paid to the law offundraising regarding major and planned giving as well as ethical standards of practice.

- **PHST-P530 Institutional Fundraising**

This course examines various types of institutional donors (corporations, foundations, federated organizations, etc.) and the design and implementation of effective fundraising strategies to engage them. Revenue generation from alternative sources of income (i.e., venture philanthropy, social entrepreneurship) will also be explored to enhance students' understanding of the changing dynamics of the fundraising landscape.

- **PHST-P530 Community Foundations**

The course will begin with a history of community philanthropy in the United States and the forces affecting community philanthropy today. We will then explore the implications for the management of community philanthropic organizations, with a

specific focus on: 1) revenue structure, including the management and use of endowments and program related investments, 2) donor engagement and donor advised funds, 3) community engagement, and 4) governance and strategic transformation. The course is conducted in a hybrid format.

- **PHST-P530 Philanthropy Ethics–East and West**

This course provides a graduate-level introduction to philanthropy ethics in comparative perspective, focusing on China and the United States. In addition to their in-person classes, students from Indiana University and selected universities in China will engage in discussion via Course Networking.

- **PHST-P530 Religion and Philanthropy**

This course explores three relationships between people's religious traditions and their philanthropic ideas and activities: 1) how diverse religious traditions have shaped distinctive philanthropic practices, 2) how political, economic and social forces have structured religious philanthropy, and 3) how competing visions of good lives and a good society have played out in the give and take of religious philanthropy. In examining the normative models of giving and service through a variety of religious traditions, we will analyze how religious narratives, practices, teachings and authorities have shaped people's generosity and humanitarianism. In studying religious philanthropy in particular historical contexts, we will explore how religious philanthropy has been influenced by secular states and market economies, transforming religious traditions and communities along the way. In observing the tensions between the purposes of givers and takers, we will locate religious philanthropy in the world of social action to assess claims about the uniquely selfless, altruistic, or civic nature of religious philanthropy.

- **PHST-P530 The Equity and Effectiveness of Philanthropy**

What do we know about the experience of receiving help? What is it like for someone to walk in the door of a homeless shelter, a legal aid clinic, or a job training program and ask for help? How much do we really know about the experiences of those who motivate us to start a nonprofit, donate money, or volunteer time? While we have spent a lot of time studying those who give and the experience of those giving, we know far less about the experience of those receiving this help. This course draws on literature from anthropology, sociology, social psychology, and political science to examine the experience of receiving help. We will tease out when giving help is effective, why it's often ineffective or less effective than it could be and then consider the implications for nonprofit management and public policy.

- **PHST-P530 Philanthropy and Public Policy: The European Context**

The study-abroad program provides students with a first-hand learning experience in philanthropy and public policy. Students will have the opportunity to learn from German and Dutch professors, researchers, policy-makers, and leaders from the nonprofit sector. Students will visit state and federal agencies, local nonprofit organizations, think tanks, and philanthropic foundations.

- **PHST-P530 Altruism and Health**  
Does giving lead to better living? Or is caring wearing? What are the psychological and physical health consequences of prosocial versus more self-interested traits and behaviors? This course examines how extremes of self and other-focus affect both psychological and physical health outcomes.
- **PHST-P530 Racial Equity Philanthropy**  
This course will cover giving traditions of various ethnic groups and examine current practices in the philanthropic field through a culturally-responsive lens. An examination of the histories of these groups and their struggles for representation, validation, and justice will undergird the journey through relevant literature and scholarly works.

## Philosophy

### School of Liberal Arts

Departmental URL: <http://liberalarts.iupui.edu/philosophy>

Program URL: <http://liberalarts.iupui.edu/philosophy/index.php/programs/graduate/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

Departmental E-mail: [crcarmic@iupui.edu](mailto:crcarmic@iupui.edu)

### Curriculum

#### Degrees Offered

Master of Arts in Philosophy, accelerated Five-Year Bachelor of Arts/Master of Arts in Philosophy, joint Master of Arts/Doctor of Jurisprudence (with the School of Law), joint Master of Arts/Doctor of Medicine (with the School of Medicine), joint Master of Arts/Master of Public Health (with the Department of Public Health in the School of Medicine), Ph.D. Minor, and Graduate Certificates in Bioethics and American Philosophy.

#### Master of Arts in Philosophy

The Department of Philosophy M.A. program offers two distinct paths to the M.A. degree: a general track that covers historical and topical areas of the discipline, and a bioethics track that integrates theory with practice to address an urgent need both in medical science and in the health care industry. Students who pursue the general track may take a number of elective courses focused on classical American philosophy, which is an area in which the department has particular strength.

#### Special Departmental Requirements

#### Admission Requirements

Applicants to the M.A. program are expected to have a bachelor's degree from an accredited university or its equivalent, with a grade point average of at least 3.0 overall (on a 4.0 scale) and at least 3.0 in the student's major. There is no specific major requirement, but applicants must show a record of course work (or equivalent experience), demonstrating that they are sufficiently prepared to do graduate work in philosophy. For applicants interested in the Bioethics concentration,

professional training or experience that involved health care or research ethics could be accepted in lieu of coursework. Applicants must also show an appropriate level of achievement on the Graduate Record Examination (GRE) General Test unless they already hold an advanced degree.

Foreign applicants are required to take the Test of English as a Foreign Language (TOEFL). They must also take the IUPUI English (ESL) examination prior to their first semester of coursework and may be required to take additional classes in English as a second language.

Deadlines for receipt of **completed applications** are as follows:

January 15th – For applicants who wish to be considered for a University Fellowship.

March 1st – For applicants seeking admission in the summer or fall semesters.

October 15th – For applicants seeking admission for the spring semester.

A complete application includes the following materials:

1. [Graduate School Application form with Application Fee](#)
2. Three Letters of Recommendation
3. Statement of Purpose
4. GRE Scores\*
5. TOEFL Scores (non-native English speakers only)
6. Official Transcripts (required from all institutions attended or currently attending)
7. Writing Sample†

Transcripts and writing sample should be sent directly to:

Philosophy Department

ATTN Graduate Admissions

425 University Blvd., CA 331

Indianapolis, IN 46202

USA

#### Program Requirements

Students are required to take a minimum of 30 credit hours. Students must complete a set of core courses as well as a set of open or concentration-specific electives. Students may apply to write a 6 cr. thesis in place of two 3 cr. graduate courses. Students must attend and complete these courses at IUPUI, except those courses accepted for transfer. At least 15 credit hours must be taken at IUPUI and at least 18 credit hours must be philosophy courses. No course with a grade lower than a B will count toward the degree.

#### General M.A. Curriculum

##### Philosophy Core (15 cr. required)

##### 1. History (6 cr. required)

- PHIL P515 Medieval Philosophy (3 cr.)
- PHIL P522 Topics in History of Modern Philosophy (3 cr.)
- PHIL P536 Topics in the History of Contemporary Philosophy (3 cr.) PHIL P558 Classical American Philosophy (3 cr.)

**2. Topics (6 cr. required)**

- PHIL P514 Pragmatism (3 cr.)
- PHIL P540 Contemporary Ethical Theories (3 cr.)
- PHIL P543 Social and Political Philosophy (3 cr.)
- PHIL P553 Philosophy of Science (3 cr.)
- PHIL P560 Metaphysics (3 cr.)
- PHIL P562 Theory of Knowledge (3 cr.)

**Electives (15 cr. required)**

- Any course from the Philosophy Core (above)
- PHIL P503 Semiotics of C.S. Peirce (3 cr.)
- PHIL P507 American Philosophy and the Analytic Tradition (3 cr.)
- PHIL P520 Philosophy of Language (3 cr.)
- PHIL P525 Topics in the History of Philosophy (3 cr.)
- PHIL P542 Ethics and Values of Philanthropy (3 cr.)
- PHIL P545 Legal Philosophy
- PHIL P552 Philosophy of Logic
- PHIL P561 Philosophy of Mind
- PHIL P572 Philosophy of Religion
- PHIL P600 Topics in Philosophy (3 cr.)
- PHIL P650 Topics in Semiotic Philosophy (3 cr.)
- PHIL P701 Peirce Seminar (3 cr.)
- PHIL P730 Seminar in Contemporary Philosophy (3 cr.)
- PHIL P748 Seminar in American Philosophy (3 cr.)
- Any PHIL course offered in the Bioethics concentration

**Thesis option:** Students may petition to write a thesis (P803, 6 cr.) under certain circumstances. They must secure permission from their graduate director and three faculty members who are willing to constitute a thesis committee. Students who receive permission to write a thesis need only take 9 cr. of electives.

**Bioethics Concentration Curriculum****Philosophy Core (6 cr. required)**

1. Required foundational course (3 cr.)
  - PHIL P540 Contemporary Ethical Theories (3 cr.)
1. Core electives (3 cr. required)
  - PHIL P514 Pragmatism (3 cr.)
  - PHIL P515 Medieval Philosophy (3 cr.)
  - PHIL P522 Topics in the History of Modern Philosophy (3 cr.)
  - PHIL P536 Topics in the History of Contemporary Philosophy (3 cr.)
  - PHIL P543 Contemporary Social and Political Philosophy (3 cr.)
  - PHIL P553 Philosophy of Science (3 cr.)
  - PHIL P558 Classical American Philosophy (3 cr.)
  - PHIL P560 Metaphysics (3 cr.)
  - PHIL P562 Theory of Knowledge (3 cr.)

**Concentration-specific Courses (18 cr. required)**

1. Required foundational course (3 cr.)
  - PHIL P547 Foundations of Bioethics (3 cr.)
2. Concentration-specific electives (15 cr. required)

**2a. Areas of central importance (5 cr. required)**

- PHIL P548 Clinical Ethics Practicum (3 cr.)
- LAW DN838 Bioethics and Law (2 cr.)
- MHHS M504 Introduction to Research Ethics (3 cr.)

**2b. Specialized electives (9 cr. required)**

- ANTH E445 Medical Anthropology (3 cr.)
- COMM C510 Health Provider-Consumer Communication (3 cr.)
- HIST H546 History of Medicine (3 cr.)
- LAW DN761 Law and Public Health (2 cr.)
- LAW DN845 Financing and Regulating Health Care (3 cr.)
- NURS N534 Ethical and Legal Perspectives in Advanced Nursing Practice (2 cr.)
- PHIL P549 Bioethics and Pragmatism (3 cr.)
- PHIL P555 Ethical and Policy Issues in International Research (3 cr.)
- PHIL P600 Topics in Philosophy (3 cr.) [When content is track-specific]
- PHIL P696 Topics in Biomedical Ethics (3 cr.)
- PHIL P730 Seminar in Contemporary Philosophy (3 cr.) [When content is track-specific]
- SOC R515 Sociology of Health and Illness (3 cr.)
- SOC S560 Topics: Death and Dying (3 cr.)

**Thesis or Research Project (6 cr. required)**

- PHIL P803 Master's Thesis in Philosophy (6 cr.)

In lieu of a thesis students may opt to complete a research project under the guidance of an appropriate faculty committee. Examples of admissible research projects: research that leads to a paper of sufficient length and quality to be considered for publication in a peer-reviewed journal; a comprehensive briefing paper for a legislative hearing; and analysis of a hospital, institutional, or research policy.

In lieu of the above, students may also opt for six credits of general electives; i.e., any graduate-level philosophy course offered by the IUPUI Philosophy Department that falls within the General M.A. Curriculum or the Bioethics Concentration Curriculum.

**Five-Year Bachelor of Arts/Master of Arts in Philosophy**

Available to philosophy majors only, this program allows students to complete a B.A. and M.A. in five years instead of six, with three years of undergraduate coursework, a fourth year of combined undergraduate and graduate coursework, and a final year devoted exclusively to graduate work. The program is open to students who have:

- Achieved junior status.
- A cumulative undergraduate GPA of 3.3 or better, and a GPA in their major of 3.5 or better.
- Completed at least 60 of their undergraduate credit hours and at least 15 of their Philosophy credit hours at IUPUI.
- Completed the 9 hours of introductory-level required undergraduate courses for Philosophy. Interested students may declare their interest in the program to the Director of Graduate Studies in Philosophy as soon as they start at IUPUI, in which case particular



efforts will be made to advise them in their choice of courses during their first three years.

Before the end of their junior year, students whose eligibility has been confirmed must apply to the five year program. Applications include all the materials listed above for the M.A. program, with the exception of the GRE, which is not required. Applications are due on March 1 of the student's junior year (October 15<sup>t</sup> if the student's final semester as a junior is in the fall).

Once admitted, during their senior year, participants in the program must complete and pass a maximum of four Philosophy courses (12 cr.) [CC3] offered as combined undergraduate/graduate courses (e.g., PHIL-P560/P385: Metaphysics), having registered and completed the requirements for the graduate course, with a grade of at least a B. These may then be double-counted towards the M.A. degree.

Students who are admitted to the program will take their remaining credits of graduate courses in their fifth year, and will complete the remaining program requirements for the M.A. degree as listed above. Students who double-count the maximum allowed 12 hours of graduate credit will only be required to take a total of 138 credit hours of coursework for their B.A. and their M.A., rather than 150 (120 + 30).

### Admission Requirements

Eligible students may apply to the philosophy B.A./M.A. program no later than March 1<sup>s</sup> during the final semester of their junior year (October 15<sup>t</sup> if their final semester as a junior is in the fall). The establishment of eligibility for the B.A./M.A. program does not automatically guarantee acceptance into the program. Complete applications include the same materials as listed above for the M.A. program, minus the GRE score, which is not required.

### Joint Degrees

#### Master of Arts in Philosophy and Doctor of Jurisprudence in the School of Law

This joint degrees program, in which 12 hours of course work may be creditable toward both degrees (provided the degrees are received simultaneously), affords the opportunity to earn both a Doctor of Jurisprudence (with an optional concentration in health law) and a Master of Arts in Philosophy (with a concentration in bioethics) while completing a total of only 108 credit hours. Program requirements include:

1. 90 hours credited in the School of Law, including all its required course work; and
2. 30 hours credited in the Department of Philosophy, including all of its required course work; and
3. a cumulative grade point average of at least 2.3 on all work done in the School of Law and at least 3.0 on all work done in fulfillment of the requirements for the M.A.

#### Master of Arts in Philosophy and Doctor of Medicine in the School of Medicine

The Department of Philosophy and the IU School of Medicine offer combined degrees in Medicine (M.D.) and Philosophy (M.A.), with a concentration in bioethics. Through the combined degrees program, the two

degrees can be obtained with a total of 181 credits of coursework rather than the 194 credits required if the two degrees are obtained independently. Furthermore, the IU School of Medicine requires students to achieve a level 3 (the mastery level of competence) in three of the nine competencies that comprise the IUSM curriculum in order to be eligible for graduation. The combined degrees program provides participating students with the opportunity to achieve a level 3 in the Moral Reasoning and Ethical Judgment competency.

#### Master of Arts in Philosophy and Master of Public Health Degree

Students completing this joint degree program will receive a Master of Public Health (M.P.H.) degree and a Master of Arts (M.A.) degree in Philosophy, with a concentration in Bioethics. Through the dual degrees program, the two degrees can be obtained with a total of 60 earned credits, as compared with the 75 cr. required if the degrees are obtained separately.

- P602: Public Health Internship (3 cr.) will be counted in place of PHIL P548: Clinical Ethics Practicum (3 cr.).
- Students must complete a capstone research project which will be counted for both degrees by receiving 3 cr. under P702/704/705 and 3 cr. under PHIL P803; the 6 cr. total will be counted toward both degrees.
- Students may also select up to 6 cr. of the following electives from either the M.A. or the M.P.H. curricula (no more than 3 cr. from each) which will be counted for both degrees:

#### M.A. Electives

- LAW DN761: Law and Public Health
- LAW DN838: Bioethics and Law
- SOC R515: Sociology of Health and Illness (Cross-listed course)
- PHIL P548: Bioethics and Pragmatism
- PHIL P555: Ethical and Policy Issues in International Research
- PHIL P696: Topics in Biomedical Ethics

#### M.P.H. Electives

- PBHL R515: Sociology of Health and Illness (Cross-listed course)
- PBHL P611: Policy Development, Implementation and Management
- PBHL P613: Public Health and Emergency Preparedness
- PBHL P631: Maternal, Child, and Family Health
- PBHL P632: History of Public Health

#### Ph.D. Minor

To earn a doctoral minor at IUPUI, the student must earn 12 credit hours of graduate courses in philosophy, with a grade point average of at least 3.0 (B), including 6 credit hours in courses selected from the Philosophy Core (P514, P522, P536, P540, P543, P553, P558, P560, P562).

#### Graduate Certificates

The department offers two graduate certificates, one in American Philosophy and one in Bioethics.



## Admission Requirements

Applicants are expected to have a bachelor's degree from an accredited university or its equivalent, with a grade point average of at least 3.0 overall (on a scale of 4) and at least 3.0 in the student's major. There is no specific major requirement, but applicants must show a record of coursework (or equivalent experience) demonstrating that they are sufficiently prepared to do graduate work in philosophy. Acceptable coursework includes an undergraduate degree in philosophy. For their application, students are required to submit in addition to their application form: a statement of purpose, official transcripts, and at least one letter of recommendation.

## Program Requirements

To complete the certificate students should take 15 credit hours in the IU system, at least 9 of which must be taken at the IUPUI campus. All courses must be at the 500-level or higher and be completed with a grade B or higher. Students for the American Philosophy certificate are required to take PHIL P558, whereas students for the Bioethics certificate are required to take PHIL P547. In addition, students should take nine credit hours in concentration-specific courses, while taking the remaining three credit hours either in concentration-specific courses or in courses that fall within the M.A. core.

## Faculty

### Chairperson

Professor Timothy D. Lyons

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Michael B. Burke\* (Emeritus), Edmund Byrne\* (Emeritus), André De Tienne, Richard Gunderman\* (Philosophy, Radiology, Philanthropy, and Medical Humanities), Nathan R. Houser\* (Emeritus), Laurence Lampert\* (Emeritus), Michael A. McRobbie\*, Eric M. Meslin\* (Philosophy and Medicine), Paul Nagy\* (Emeritus, Philosophy and American Studies), John J. Tilley\* (Emeritus)

### Associate Professors

Martin Coleman, Cornelis de Waal, Timothy D. Lyons, Ursula Niklas Peterson\* (Emerita), Peter H. Schwartz (Medicine)

### Assistant Professors

Chad Carmichael (Graduate Director), Samuel Kahn

## Courses

**PL-P 503 The Semiotics of C. S. Peirce (3 cr.)** A rigorous initiation to Peirce's logic of sign, including his theory of knowledge, his categoriology, his definitions and classification of signs, the three branches of semiotics, with an applied research component.

**PL-P 507 American Philosophy and the Analytic Tradition (3 cr.)** An overview of the development of American philosophy with a special focus on its contribution to and influence on the American analytic

tradition. This course discusses the views of such philosophers as C. I. Lewis, Rudolph Carnap, W. V. O. Quine, Donald Davidson, Hillary Putnam, and Susan Haack.

**PL-P 514 Pragmatism (3 cr.)** This course examines what pragmatism stood for in its formative years and what it has become; then, after studying some conflicting views of well-known pragmatists, it considers what pragmatism might become. Part of the course is devoted to the contributions of pragmatism to different areas within philosophy.

**PL-P 520 Philosophy of Language (3 cr.)** In-depth treatment of central issues, problems, theories (both classical and contemporary), such as linguistic reference, vague terms, and contextualism

**PL-P 525 Topics in the History of Philosophy (3 cr.)** An advanced study of important themes or major figures in the history of philosophy. May be repeated for credit if topics vary.

**PL-P 540 Contemporary Ethical Theories (3 cr.)** In-depth treatment of classical and contemporary normative and meta-ethical theories, such as consequentialism, deontology, and non-cognitivism.

**PL-P 542 The Ethics and Values of Philanthropy (3 cr.)** An inquiry into the ethics and values of philanthropy rooted in a general understanding of philanthropy, as voluntary action for the public good, as an ethical ideal. A consideration of philanthropic activity in light of this ideal.

**PL-P 543 Social and Political Philosophy (3 cr.)** Advanced study of central issues, theories, and topics in social/political philosophy, such as property rights, distributive justice, political liberty, and the limits and foundations of state authority.

**PL-P 547 Foundations of Bioethics (3 cr.)** A rigorous examination of bioethical theory and practice. Stress is placed on moral and conceptual issues embedded in biomedical research, clinical practice, and social policy relating to the organization and delivery of health care.

**PL-P 548 Clinical Ethics Practicum (3 cr.)** Application of the methods of philosophical analysis to current ethical issues arising in IU-affiliated hospitals and clinics. The practicum gives students firsthand experience of clinical ethics problems in "real time," showing them both the need for conceptual frameworks and the difficulties associated with them.

**PL-P 549 Bioethics and Pragmatism (3 cr.)** A survey of recent contributions of American philosophy to bioethics. The course strongly focuses on a growing group of philosophers and ethicists who seek their inspiration in Dewey, James, Peirce, Royce, and Mead, while dealing with contemporary issues in medical ethics.

**PL-P 553 Philosophy of Science (3 cr.)** A study of theories with regard to the nature, purpose, and limitations of science. Attention is given to the cognitive significance of theories, the scientific method (hypothesis formation, theory construction, and testing), research paradigms, reductionism, and social epistemology.

**PL-P 555 Ethical and Policy Issues in International Research (3 cr.)** Examines ethical and policy issues in the design and conduct of transnational research involving

human participants. Topics discussed include economic and political factors; study design; the role of ethics review committees; individual and group recruitment/informed consent; end of study responsibilities; national and international guidelines.

**PL-P 558 American Philosophy (3 cr.)** A general overview of the most significant contributions of American philosophers, such as Emerson, Thoreau, Peirce, James, Dewey, Santayana, Mead, Jane Addams, Alain Locke.

**PL-P 560 Metaphysics (3 cr.)** In-depth treatment of central issues, problems, and theories (both classical and contemporary), such as persistence of identity, freedom and determinism, and nominalism.

**PL-P 562 Theory of Knowledge (3 cr.)** In-depth treatment of central issues, problems, and theories (both classical and contemporary), such as epistemic warrant, Gettier examples, and foundationalism.

**PL-P 590 Intensive Reading (1-4 cr.)** A tutorial course involving in-depth consideration of a specific philosophical area or problem or author. May be repeated for credit.

**PL-P 600 Topics in Philosophy (3 cr.)** A detailed examination of a specific topic in philosophy. May be repeated for credit if topics vary.

**PL-P 650 Topics in Semiotic Philosophy (3 cr.)** An examination of various historical and theoretical issues arising from the philosophical study of semiosis—the general phenomenon of representation, objectification, signification, and interpretation—through the work of mostly American philosophers from the late nineteenth century to the present, with an emphasis on the impact of Peirce's semiotic philosophy. **This course is currently not offered.**

**PL-P 696 Topics in Biomedical Ethics (3 cr.)** Selected topics in bioethics, such as international research ethics; ethical issues in pediatrics; ethical issues in genetics.

**PL-P 701 Peirce Seminar (3 cr.)** This seminar is devoted to a critical examination of the general structure and development of Peirce's systematic philosophy with a special emphasis on those tensions in the development of his thought that led to modifications in his philosophy, and on the nature and significance of those changes.

**PL-P 730 Seminar in Contemporary Philosophy (3 cr.)** Selected topics in contemporary philosophy. May be repeated for credit if topics vary. May be repeated for credit.

**PL-P 748 Seminar in American Philosophy (3 cr.)** Advanced study of a principal philosopher or a set of selected topics in classical American philosophy. May be repeated for credit if topics vary.

**PL-P 803 Master's Thesis in Philosophy (arr cr.)**

**PL-P 522 Topics in the History of Modern Philosophy (3 cr.)** Selected topics from key movements, figures, or controversies in modern (17th/18th century) Western philosophy. May be repeated for credit (twice) when topics vary.

**PL-P 515 Medieval Philosophy (3 cr.)** Selected study of key medieval philosophers, including Augustine and/or Aquinas.

**PL-P 561 Philosophy of Mind (3 cr.)** In-depth treatment of central issues, problems, and theories (both classical and contemporary) in philosophy of mind, such as mental causation, the nature of consciousness and dualism.

## Political Science

**School of Liberal Arts**

**Departmental E-mail:** [cabshire@iupui.edu](mailto:cabshire@iupui.edu)

**Departmental URL:** [www.iupui.edu/~polisci](http://www.iupui.edu/~polisci)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Arts

#### Special Departmental Requirements

(See also general University Graduate School requirements.)

#### Admission Requirements

Applications will be considered all year round. Admission requirements include an undergraduate major in political science, or its equivalent, with a GPA of 3.0 or better, the Graduate Record Examination, with scores of 145 in each of the verbal and quantitative elements and 4.5 in the analytical writing element, a personal statement and three letters of support.

#### Foreign Language Requirement

There is no foreign language requirement.

#### Grades

Students must maintain a 3.0 (B) grade point average, and receive minimum course grades of 2.8 (B-).

#### Master of Arts Degree

##### Course Requirements

A minimum of 33 credit hours made up of core courses, electives, and a thesis.

**Core courses** (12 credit hours). All students must complete the following:

- POLS Y570 Introduction to the Study of Politics (3 cr.)
- POLS Y580 Research Methods in Political Science (3 cr.)
- POLS Y657 - Comparative Politics *or* Y669 - International Relations (3 cr.)
- POLS Y661 - American Politics (3 cr.)

**Electives** (15 credit hours). Approved electives may be taken from any department. Approved Political Science courses currently include the following:

- POLS Y620 State Politics (3 cr.)
- POLS Y622 Urban Politics (3 cr.)
- POLS Y642 Comparative Federalism (3 cr.)
- POLS Y680 Readings in Political Science (1-6 cr.)

An internship (3-6 hours) may also be taken with a government institution, or with a body having operational ties with such an institution. Students must enroll in POLS Y881, Internship in Political Science.

**Thesis** (6 hours). This should explore some aspect of politics. Students must enroll in POLS Y880, M.A. Thesis. Students are strongly advised to allow at least one year for the preparation, completion and defense of a thesis.

### Final Examination

There is no final examination.

### Faculty

#### Chairperson

Associate Professor Scott Pegg\*

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Professors

William Blomquist, Bessie House-Soremekun, John McCormick\*

#### Associate Professors

Ramla Bandele, Margaret Ferguson, Scott Pegg\*

#### Assistant Professors

Aaron Dusso, Amanda Friesen, Caitlin Dwyer

#### Director of Graduate Studies

Professor John McCormick\*, Cavanaugh Hall 503H, (317) 274-4066

### Courses

#### POLS-Y 570 Introduction to the Study of Politics (3 cr.)

Problems of graduate study and professional scholarship; central organizing concepts and the use of theory in political science and related disciplines; specialized areas of research and scholarship in political science; conditions of scientific inquiry and methodological problems in the study of political phenomena; central importance of theory in explanation.

#### POLS-Y 580 Research Methods in Political Science (1-3 cr.)

**POLS-Y 620 State Politics (3 cr.)** An examination of the institutions and processes by which state governments carry out their responsibilities. Includes the study of executives, legislatures, parties, and elections at the state level.

**POLS-Y 622 Urban Politics (3 cr.)** An examination of—and the problems faced and challenges faced by—the governments of cities and metropolitan areas. Includes study of leadership, citizen participation, intergovernmental relations, and urban policy.

**POLS-Y 624 Indiana Politics (3 cr.)** This seminar reviews contemporary scholarship on the development, context, structure, and operation of Indiana Government and politics. It places Indiana politics into both a historical and comparative perspective to see how Indiana politics have

changed over time and how they compare to politics in other states.

**POLS-Y 630 State Executive Politics (3 cr.)** A course that examines the role of governors in state politics. Includes the study of leadership and the relationship between the executive and other elements of government at the subnational level.

**POLS-Y 640 State Parties and Interest Groups (3 cr.)** An examination of political parties and interest groups, their roles in government, and their structure and organization.

**POLS-Y 642 Comparative Federalism (3 cr.)** A course that places federalism in its comparative context. Assessing theories and models of federalism in North American, Europe, Asia, and other parts of the world.

**POLS-Y 661 American Politics (3 cr.)** \* Illustrative topics: the presidency, legislative process, political behavior, political parties and representation, political socialization, comparative state politics, urban politics, bureaucratic politics.

#### POLS-Y 680 Readings in Political Science (1-6 cr.)

This course allows a student and faculty member to craft a course of study to suit the student's particular academic needs.

#### POLS-Y 880 M.A. Thesis (1-6 cr.)

#### POLS-Y 881 Internship in Political Science (1-6 cr.)

\* A course in which students complete an internship for credit with a government (or related) institution. It will be arranged between the student and the instructor (requirements will vary depending on student/instructor agreement).

## Population Health Analytics

**Richard M. Fairbanks School of Public Health**

Program E-mail: [fsphinfo@iu.edu](mailto:fsphinfo@iu.edu)

Departmental URL: <https://fsph.iupui.edu/academics/doctoral/minors/index.html>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

Curriculum

#### Doctoral Minor in Population Health Analytics

The IU Richard M. Fairbanks School of Public Health offers a PhD minor in Population Health Analytics that prepares doctoral students to analyze patterns and trends in large data sets in the context of population health (e.g., health services research, public health). Students will learn both the theories and methods needed to be successful in the conduct of research across the health data sciences. Skills and methods taught in this minor are highly sought by employers - including governmental research agencies as well as academic programs across the spectrum of higher education.

While graduate students can take a single course on data science within their department to grasp the main

concepts, one course is not sufficient to develop a core competency in applying a broad range of analytic techniques to population health data sets. By combining a diverse set of related courses from multiple schools and departments, we offer a unique minor that adds value to the individual courses emerging across campus. When complete, students will be prepared for success in the population health sciences.

This minor is open to any doctoral student at IUPUI and not just those in the Fairbanks School of Public Health. Students who wish to obtain a doctoral minor from the IU Richard M. Fairbanks School of Public Health must earn a grade of "B" or better in the coursework for the minor. Courses in which a grade of "B-" or lower is earned will not apply toward completion of the minor. Faculty in the departments of Epidemiology and Health Policy & Management will serve as minor advisors for students pursuing this doctoral minor.

## Course Requirements

### Required Courses

- PBHL E647 Introduction to Population Health Analytics (3 credits)

### Choose two courses from the following list:

- INFO B573 Programming for Life Sciences (3 credits)
- INFO B585 Biomedical Analytics (3 credits)
- INFO B643 Natural Language Processing for Biomedical Records and Reports (3 credits)
- INFO H515 Introduction to Data Analytics (3 credits)
- INFO H516 Applied Cloud Computing for Data Intensive Sciences (3 credits)
- INFO H517 Visualization Design, Analysis, and Evaluation (3 credits)

### Choose one course from the following list:

- PBHL H628 Health Information Systems (3 credits)
- PBHL E645 Information Exchange for Population Health (3 credits)

## Professional Editing

### School of Liberal Arts

Departmental E-mail: [iat@iupui.edu](mailto:iat@iupui.edu)

Departmental URL: [liberalarts.iupui.edu/iat/index.php/academic\\_programs/professional\\_editing](http://liberalarts.iupui.edu/iat/index.php/academic_programs/professional_editing)

(Please note that the requirements contained in *The University Graduate School Bulletin*, being more frequently updated than departmental websites, are the requirements utilized by the University Graduate School to confer degrees, minors, certificates, and sub-plans.)

### Curriculum

#### Degree Offered

#### Graduate Certificate

An interdisciplinary 15 credit hour research certification covering the fundamental theories and methods involved in the practice of scholarly editing and other more general applications of professional editing. The interdepartmental curriculum includes editing concentrations in English and History and is administered by graduate faculty of the

Institute for American Thought within the School of Liberal Arts.

### Special Program Requirements

(See also general University Graduate School requirements.)

### Admission Requirements

Students already admitted into Indiana University or Purdue University graduate degree programs are eligible to earn a certificate. In addition to re-submitting their degree admission materials such students must declare their current participation in the program and also submit a statement of interest. Continuing graduate nondegree students must meet the following requirements: (1) a bachelor's degree from an accredited college or university, with the expectation of a minimum 3.0 overall GPA (on a scale of 4.0) and a minimum 3.0 average GPA in the student's major, (2) a statement of interest, and (3) three letters of recommendation. There is no specific major requirement, but candidates should have a record of course work to demonstrate sufficient writing and research experience. International students from non-English speaking countries must take the Test of English as a Foreign Language (TOEFL) examination and score above 79 on the iBT version of the test or score at least a 6.56 on the International applicants who use International English Language Testing System (IELTS). Unless they hold a degree from an English-speaking institution or scored above 100 on the iBT version of the TOEFL, they will need to take the EAP examination upon arrival at IUPUI. If any language courses are required on the basis of the examination, these must be started during the first term at IUPUI and finished within the first year.

### Foreign Language/Research-Skill Requirement

None.

### Grades

Certificate students must maintain at least a 3.0 (B) grade point average.

### Course Requirements

A minimum of 14-15 credit hours (dependent on the concentration chosen), which include completion of any one of several three-course core concentrations (11–12 credit hours) and one or more open electives (3–6 credit hours). Normally, 9 credit hours can be taken before admission to the certificate program, provided that all course work is completed within a four-year period. For course descriptions, see the course listings for the Departments of English and History at Indiana University–Purdue University Indianapolis.

### Core Options

Three courses (11-12 credit hours) in one of the following field concentrations or, with permission from the program director, putting together an individual core from either track:

#### Scholarly Editing Concentration I: Critical (Eclectic) Texts (12 credit hours)

- L501 Professional Scholarship in Literature [English] (4 cr.)



- L680 Topics: Textual Theory and Textual Criticism [English] (4 cr.)
- L701 Descriptive Bibliography and Textual Problems [English] (4 cr.)

### Scholarly Editing Concentration II: Documentary Texts (11 credit hours)

- H501 Historical Methodology [History] (4 cr.)
- H543 Internship: Practicum in Public History [History] (4 cr.)
- H547 Topics in Public History: Historical Editing [History] (3 cr.)

### Open Elective Course(s)

One course (3–4 credit hours). Any of the core options listed previously (outside of the student's chosen field concentration) may be counted as an open elective, as well as any of the following courses and, with permission of the director, any course that is related but not listed below (for course descriptions, see the course listings for the Departments of English and History at Indiana University–Purdue University Indianapolis).

- LIS S505 Organization and Representation of Knowledge and Information [Information and Library Science] (3 cr.)
- LIS S681 The Book 1450 to the Present [Information and Library Science] (3 cr.)
- L590 Internship in English [English] (4 cr.)
- NEWM N500 Principles of Multimedia Technology [New Media] (3 cr.)

### Faculty

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Director

Marianne S. Wokeck\*, Institute for American Thought (Liberal Arts), ES001 7N, (317) 274-5820; [mwoeck@iupui.edu](mailto:mwoeck@iupui.edu)

#### Professors

Jonathan R. Eller\* (English), Marianne Wokeck\* (History)

## Public Health

### Richard M. Fairbanks School of Public Health

Program E-mail: [fsphinfo@iu.edu](mailto:fsphinfo@iu.edu)

Departmental URL: <https://fsph.iupui.edu/academics/doctoral/minors/public-health.html>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Doctoral Minor in Public Health

The IU Richard M. Fairbanks School of Public Health offers a PhD minor in Public Health that provides students with a foundation in the concepts, principles and practice

of public health. People who possess these specialized skills are in high demand because of the population health perspective they can contribute to many doctoral-level research projects.

The doctoral minor in Public Health is a rigorous, highly focused 12-credit hour minor that serves as a useful complement to many major areas of study. You will learn both theoretical concepts and how to apply them. By completing this minor, you will be able to:

- Use biostatistical methods to analyze and report public health data
- Specify approaches to assess, prevent, and control environmental and occupational hazards to human health and safety
- Use epidemiologic methods to collect, study, analyze, and report the patterns of disease in human populations for diverse audiences
- Identify and analyze the components and issues of leadership, including financing and delivery of public health services and systems
- Apply policy process, development, and analysis methods to address current national, state, and local public health issues
- Identify social and behavioral sciences factors, theories, and models, and develop, implement, and evaluate interventions designed to positively affect health behaviors in populations
- Collect and disseminate public health data through the use of technology and media
- Explain how human biology influences health and public health practice
- Exhibit high standards of personal and organizational integrity, compassion, honesty, and respect for all people
- Use systems methods to analyze the effects of political, social, and economic influences on public health systems at the individual, community, state, national, and international levels
- Demonstrate the impact of diversity and culture on public health across discipline areas
- Demonstrate an understanding of the basic ethical and legal principles pertaining to the collection, maintenance, use, and dissemination of public health data

This minor is ideal for students from many schools, including the IU schools of Nursing, Dentistry, Medicine, Physical Education and Recreation, Health Rehabilitative Sciences, Law, and Public and Environmental Affairs.

Students who wish to obtain a doctoral minor from the IU Richard M. Fairbanks School of Public Health must earn a grade of "B" or better in the coursework for the minor. Courses in which a grade of "B-" or lower is earned will not apply toward completion of the minor.

### Required Courses

- PBHL S500 Social and Behavioral Sciences in Public Health (3 credits)
- PBHL H501 U.S. Health Care Systems and Health Policy (3 credits)
- PBHL E517 Fundamentals of Epidemiology (3 credits)



- PBHL A519 Environmental Science in Public Health (3 credits)

Other courses may be taken if approved by the student's minor advisor. Students who have already completed any of the required courses as part of their MPH or PhD requirements may not apply those courses toward their minor in Public Health and must instead work with their faculty advisor to identify alternate courses.

The student's minor advisor will monitor satisfactory completion of the requirements for the doctoral minor in Public Health. Doctoral students must notify the Fairbanks School of Public Health before beginning their course of study for the minor.

## Regenerative Medicine and Technologies

### School of Medicine

Departmental E-mail: [RMAT@iu.edu](mailto:RMAT@iu.edu)

Departmental URL: <https://medicine.iu.edu/research-centers/regenerative-medicine-engineering/Graduate-Program>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

Curriculum

Courses

Faculty

### Degrees Offered

Ph.D. in Regenerative Medicine and Technologies

### Special Departmental Requirements

(See also general University Graduate School requirements.)

### Ph.D. in Regenerative Medicine and Technologies

Students must complete a minimum of 90 credit hours for the Ph.D. degree in Regenerative Medicine and Technologies. The majority of coursework will be in the form of didactic classroom lectures and research seminars. 16 credit hours must be completed from the list of Core Courses. 3 credit hours must be completed from the list of Elective Courses. Students will complete at least one approved Ph.D. minor. The remaining credits will be laboratory research credits (SURG-R800) and will be supervised by their Graduate Faculty mentor and an advisory/research committee selected by the student and their mentor. Less than 30% of the curriculum will be available as online courses. Course grades must, overall, result in a GPA of 3.0 or higher. Please refer to the University Graduate School Bulletin for additional requirements for Doctor of Philosophy degrees.

### Admission Requirements

Bachelor's degree, preferably with a strong background in the sciences. Candidates should have a grade point average of 3.0 on a 4.0 scale. The Graduate Record Examination General Test or Medical College Admission Test is optional. Test of English as a Foreign Language

is required of international applicants. It is preferable that graduate study be started in the fall semester.

### Grades

Students must maintain an average overall GPA of 3.0 on a 4.0 scale in course work and earn no less than a B- in any required or elective course.

### Advisory Committees

Each student will meet with the Graduate Advisor to form their Academic Advisory Committee to advise and approve the student's Plan of Study and administer the Candidacy Examination. This committee must comprise a minimum of three Surgery graduate faculty or affiliated members and a faculty member from the student's chosen minor subject area.

After successful completion of the Candidacy Examination, the student will solicit faculty members to serve on their Doctoral Advisory Committee. The Doctoral Advisory Committee advises the student during their final course of study and administers their Defense Examination. The student's Primary Advisor serves as the chair of the Doctoral Advisory Committee. The selection of the Primary Advisor requires the advisor's consent and the approval of the Graduate Advisor. The student's research interests should align with the Primary Advisor's specialties.

In addition to the Primary Advisor, the Doctoral Advisory Committee will be composed of at least two additional Surgery or affiliated graduate faculty, and at least one faculty member representing the student's Minor area. Additional members may be included at the student's request. Inclusion of individuals without graduate faculty standing may be included but cannot supplant the other four members with graduate faculty status.

### Examination Requirements

Students must pass the Candidacy Examination and the Defense Examination.

### Candidacy Examination Requirements

The Candidacy Exam is composed of a written and oral portion intended to test a student's preparation to undertake an original research project. The student is evaluated based on their performance in the formulation, presentation, and defense of a hypothesis-driven scientific proposal. The written proposal presents a plausible, hypothesis-driven thesis project following the NIH guidelines for a F30 (M.D./Ph.D. or other dual doctoral degree program), F31 (predoctoral students), or F32 (medical residents and postdoctoral students) grant. Unlike the NIH grant, the documents will be double-spaced, a total of 14 pages in length, and contain only four sections: 1) Specific Aims - 3 pages, 2) Significance - 1 page, 3) Approach - 10 pages, and 4) References - not included in overall length limits. Proposals longer than these page limits (excluding references) will not be accepted and will be returned immediately to the student.

The Specific Aims section must demonstrate a clear understanding of the research problem and an approach to work toward a defensible solution. It should include at least three Specific Aims, a Graphical Abstract, and an Impact Statement. The Significance section must demonstrate knowledge of pertinent background literature

and current efforts in the research area of interest. The Approach section must include sufficient detail to demonstrate initial progress toward solving the research problem and a plan to execute the remainder of the dissertation research. The plan should include a Simple Budget and a Timeline.

### Defense Examination Requirements

The Defense Exam determines if the student's research warrants granting the Ph.D. degree. A written original research document must be approved by the Doctoral Advisory Committee in a public defense as described in the Graduate School Bulletin. Doctoral research must be original and merit publication in the scholarly literature.

### Course Requirements

A total of 90 credit hours are required. Students must confirm the plan of study with their Academic Advisory Committee and the Graduate Advisor.

### Core Courses (16 credit hours)

Students must take all of the following courses:

- GRDM-G505 Responsible Conduct of Research (1 cr.)
- GRDM-G507 Reagent Validation as a Means for Enhanced Research Reproducibility (1 cr.)
- SURG-R711 Regenerative Medicine, Biomaterials and Therapeutics (2 cr.)
- SURG-R712 Regenerative Medicine Technology Development and Manufacturing (2 cr.)
- SURG-R720 Research Rotation in Regenerative Medicine and Technologies (3 X 2 cr. = 6 cr.)
- SURG-R791 Industry/Clinical Internship (4 cr.)

### Minor Courses (variable credit hours)

The student must select an appropriate minor with the Academic Advisory Committee's recommendation. The number of hours to be included in the minor will be consistent with the requirements of the unit granting the minor.

### Elective Course(s) (3 credit hours required)

- SURG-R780 Advanced Topics in Regenerative Medicine and Technologies (3 )
- BME 52700 Implantable Systems (3 )
- BME 58200 Advanced Biomedical Polymers (3 )
- BME 59500 Biomolecular Engineering (3 cr.)
- BME 59500 Cellular Mechanotransduction (3 )
- BME 59500 Tissue Engineering (3 )
- GRDM-G661 Clinical Trials (3 cr.)
- GRAD-G715 Biomedical Science I (2 cr.)
- The student may use additional electives in their plan of study with the approval of the Academic Advisory Committee.

### Research (59+ credits)

- SURG-R800 – Research in Regenerative Medicine and Technologies (variable cr.)

### Courses

Curriculum

Courses

### Faculty

- **GRDM-G505 - Responsible Conduct of Research (1 cr.)** The purpose of this course is to provide its students with a formal setting to learn about the basic rules and acceptable standards required for anyone conducting scientific research. It will help its students obtain knowledge and develop skills for dealing with potential ethical problems in the research laboratory on their own.
- **GRDM-G507 Reagent Validation as a Means for Enhanced Research Reproducibility (1 cr.)** This course is designed to provide training for pre-doctoral students in the area of appropriate reagent utilization by focusing on biological variables, with particular attention to murine models, and on biological and chemical resources, with particular attention to cell line authentication, plasmid verification, and antibody utilization.
- **SURG-R520 Regenerative Medicine and Technologies Journal Club (2 cr.)** An interdisciplinary course for medical and graduate students to discuss and present peer-reviewed research in regenerative medicine and technologies. Faculty attend at the request of the students to discuss recent research findings and topics not generally covered in traditional graduate curricula. Required for the Regenerative Medicine and Technologies master's program. Required as part of the Regenerative Medicine and Technologies masters and doctoral majors.
- **SURG-R711 Regenerative Medicine, Biomaterials, and Therapeutics (2 cr.)** This sixteen-week course will cover eleven lectures by prominent experts. Students will have an overview of biomaterials and therapeutics used in Regenerative Medicine. Emphasis will be given on fundamentals and advancements made in nano-biomaterials for delivery of therapeutics in Regenerative Medicine. The curriculum will also include a paper presentation at the end. Required as part of the Regenerative Medicine and Technologies masters and doctoral majors.
- **SURG-R712 Regenerative Medicine Technology Development and Manufacturing (2 cr.)** This course provides students with an overview of development and manufacturing of Regenerative Medicine products. From the science behind groundbreaking discoveries to regulatory and manufacturing challenges, the curriculum will detail multi-disciplinary collaboration and technology integration with a student seminar at the end. Required as part of the Regenerative Medicine and Technologies masters and doctoral majors.
- **SURG-R720 Research Rotation in Regenerative Medicine and Technologies (2 cr.)** A laboratory research rotation course allowing incoming Regenerative Medicine and Technologies MS and PhD graduate students in the School of Medicine (IUSM) to take research rotations in laboratories affiliated with the RMAT graduate programs. Permission of instructor required. Required as part of the Regenerative Medicine and Technologies doctoral major. Optional for RMAT MS students.
- **SURG-R719 Regenerative Medicine and Technologies Thesis (6 cr.)** This is an introductory

course in thesis methodology and writing. The course guides students to complete the master's thesis, or the first three chapters of the traditional doctoral dissertation, through readings, peer review, and instructor feedback. Required as part of the Regenerative Medicine and Technologies master's major. Prerequisites: SURG-R991, SURG-R980.

- **SURG-R780 Advanced Topics in Regenerative Medicine and Technologies (3 cr.)** Advanced course in regenerative medicine technologies, manufacturing regulations, and standards for healthcare applications. The curriculum will detail multi-disciplinary collaboration and technology integration.
- **SURG-R791 Industry/Clinical Internship (4 cr.)** An internship course allowing graduate students enrolled in programs that require internships to gain practical experience with ICRME's industry partners. Instructor permission required.
- **SURG-R800 Research in Regenerative Medicine and Technologies (variable cr.)** This course is the academic component of laboratory-based research that a student in a Regenerative Medicine and Technologies program engages in while a student in the program. This course addresses both research conducted in a lab prior to the start of a thesis/dissertation project and the thesis/dissertation project itself. Instructor permission required.
- **BME 52700 Implantable Systems (3 cr.)** Engineering constraints surrounding the selection of a power source for an implantable system and in particular how the control of the target organ system impacts power plant design. The organ specific design of cochlear neuroprosthetics, functional neuromuscular stimulation systems and cardiac pacemakers are presented in detail as but three examples of technically mature implantable systems that have had broad clinical impact. For each, there is a brief introduction to the related anatomy, physiology and neurophysiology of the target organ system so that students may gain perspective on the functional limits of the artificial control of these organ systems. Several implantable systems presently in the early stages of bioengineering design or in the early stages of clinical trials are presented as state-of-the-art examples. Particular attention is given to practical bioengineering issues related to the ever expanding use of implantable biomedical sensors in order to provide real-time control of the implant and improved response to challenges to the homeostasis of organ system function. Issues related to ethical and regulatory considerations related to implantable system design including animal testing, human clinical trials and FDA premarket approval are also introduced.
- **BME 58200 Advanced Biomedical Polymers (3 cr.)** This is an advanced polymer course that provides the most recent development of biomedical polymers and their applications and covers a variety of biomedical areas such as in cardiovascular, dental, orthopedic, ophthalmologic and wound healing research. Drug, cellular and gene delivery are also covered. This course is designed for all the senior undergraduate and graduate students (M.S. and Ph.D. level) in biomedical areas. Except for

learning, students are also required to discuss the related topics and write term papers related to the assigned special topics in the class.

- **BME 59500 Biomolecular Engineering (3 cr.)** This course covers the experimental and computational tools useful to analyze biological molecules and molecular systems, potential applications of DNA/protein molecules for designing nano-scale motors, switches, and computers. The topics include electrophoresis, genome-wide molecular analysis, network analysis, DNA manipulations, protein interactions, and microfluidics.
- **BME 59500 Cellular Mechanotransduction (3 cr.)** This course will cover the biochemical signaling in response to various mechanical stresses in the context of physiology and pathophysiology. Topics include the behavior of live cells during cell motility, force generation, and interaction with the extracellular matrix; the advanced biomechanical testing tools used for in vitro characterization of living cells; mechanotransduction that converts mechanical forces into biochemical signaling.
- **BME 59500 Tissue Engineering (3 cr.)** This course will cover biological principles and physiological phenomena underlying cellular regulation during development, homeostasis, and wound healing. Topics also include tissue engineering fundamentals, such as cell sources, transplantation immunology, processing of scaffolding materials, integration at cell-material interfaces, mechanisms of incorporation and release of biologics, engineered culture environments, and host-transplant integration. Students will have opportunity to evaluate clinically relevant tissue engineering products and cutting-edge tissue engineering research.
- **SURG-R780 Advanced Topics in Regenerative Medicine and Technologies (3 cr.)** This sixteen-week course will cover eleven lectures by prominent experts to provide an overview of groundbreaking discoveries, regulatory and manufacturing challenges. Emphasis will be given on advanced regenerative medicine technologies, manufacturing regulations, and standards for healthcare applications. The curriculum will detail multi-disciplinary collaboration and technology integration.
- **GRDM-G661 Clinical Trials (3 cr.)** This course includes topics in conducting clinical trials, including design, recruitment, informed consent, randomization, blinding, data collection and analysis, safety monitoring, study closeout, and alternative designs such as crossover and nonrandomized trials. Some important research areas besides clinical trials are also covered.
- **GRAD-G715 Biomedical Science I (2 cr.)** One of three biomedical science courses intended for incoming doctoral graduate students in the School of Medicine or other graduate students. The material presented addresses molecular and metabolic aspects of cellular function. The course will explore topics in the biochemical basis of biological systems, including biological macromolecules, protein ligand interactions, cell signaling, and metabolic processes.

Courses  
Faculty

### Chairperson

Professor Chandan K. Sen, Ph.D.

### Graduate Advisor

Parker Evans, Ph.D., Ruth Lilly Medical Research Library  
- 4th Floor, Indianapolis, IN 46202, (317) 278-2735,  
[RMAT@iu.edu](mailto:RMAT@iu.edu)

### Graduate Faculty

Please see <https://medicine.iu.edu/research-centers/regenerative-medicine-engineering/investigators> for the most recent list of RMAT faculty. An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.

### Professors

Chandan K. Sen, Ph.D., Sashwati Roy\*, Ph.D., Gayle Gordillo, M.D., Mangilal Agarwal, Ph.D., Michael Murphy, M.D., Teresa Zimmers\*, Ph.D., Mark Rodefild, M.D., Gregory Borschel, M.D., Jaipal Singh, Ph.D., Mark H. Kaplan\*, Ph.D., Mervin C. Yoder (emeritus), M.D., Reuben Kapur, Ph.D., Todd O. McKinley, M.D.

### Associate Professors

Dan Spandau\*, Ph.D., Savita Khanna\*, Ph.D., Troy Markel, M.D., Chandrashekhar A. Kubal, M.D.

### Assistant Professors

Teresa Bell, Ph.D., Ajay K. Seth, M.D., Al Hassanein, M.D., Amitava Das, Ph.D., Erin L. Weber, M.D., Ph.D., Gregory G. Westin, M.D., Jason VonDerHaar, M.D., Kanhaiya Singh, Ph.D., Lester J. Smith, Ph.D., Mary E. Lester, M.D., FACS, Matthew J. Turner\*, M.D., Ph.D., Mithun Sinha, Ph.D., Mohamed S. El Masry, MBBCh, Ph.D., Subhadip Ghatak, Ph.D., Yi Xuan, Ph.D., Lava Raj Timsina, Ph.D.

## Social Work

### School of Social Work

Departmental URL:

Departmental E-mail: [swkphd@iupui.edu](mailto:swkphd@iupui.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degree Offered

Doctor of Philosophy. The School of Social Work also offers the Master of Social Work degree on the Albany, Bloomington, Indianapolis, IUN/Gary, Fort Wayne, Richmond, and South Bend campuses. For further information on the M.S.W. program, see the School of Social Work Bulletin.

#### Doctor of Philosophy Degree

#### Admission Requirements

All applicants to the Ph.D. program must have a master's degree in social work or a related field of study. Admission to the Ph.D. program is based on evaluations of: (1) the applicant's professional resume, (2) professional experience beyond the M.S.W. degree, (3) undergraduate and graduate transcripts, (4) three online references, (5) an example of the applicant's scholarly writing, (6) a 500-word statement of purpose, and (7) Graduate Record Examination General Test scores.

### Application Deadlines

Applications are due annually by February 1st. Application materials and further information may be obtained online at: <https://socialwork.iupui.edu/PhD/>.

### Course Requirements

A total of 90 credit hours, including dissertation and research internship. Up to 30 graduate credit hours may be counted toward the minimum 90 credit hours required for the Ph.D. degree. All courses credited toward the Ph.D. degree must have a minimum grade of B and must receive written approval of the School of Social Work Ph.D. Program Committee and the dean of the University Graduate School. Specific program requirements include: (1) professional social work component (27 credit hours), (2) specialization component (18 credit hours), (3) research component (27 credit hours), (4) research internship (6 credit hours), (5) dissertation (12 credits). See also the "Requirements for the Degree Doctor of Philosophy" discussed in the first section of this bulletin.

### Advisory Committee

All students in the Ph.D. program, with the approval of the program director, will select an advisory committee of three faculty members, one of whom will represent the student's area of specialization outside the School of Social Work.

### Qualifying Examination

Comprehensive; specific focus and scheduling determined by the student's advisory committee.

### Research Proposal

After nomination to candidacy, the student, with the approval of the program director, will select a research committee of no fewer than four faculty members, including an outside member. This committee must approve the proposed dissertation topic. A multiple manuscript dissertation option is available.

### Final Examination

Oral defense of dissertation.

### Pre-Doctoral Exploratory Option

This option is designed to provide prospective Ph.D. students with an opportunity to explore their interests in research and doctoral education before making formal application to the Ph.D. program. Qualified students are admitted under a "special student" status (M9) and are permitted to enroll in up to three of the school's regular Ph.D. foundation courses (9 credit hours) before having to decide whether they intend to apply to the Ph.D. program. If later accepted to the Ph.D. program, credits earned during the pre-doctoral phase will automatically apply



toward the Ph.D. degree. Participation in the Pre-Doctoral Exploratory Option does not guarantee acceptance into the Ph.D. program. Applications for the Pre-Doctoral Exploratory Option should be submitted by May 1 for fall admission and by November 1 for spring admission. All inquiries regarding the pre-doctoral option should be directed to the academic advisor listed above.

### Ph.D. Minor in Social Work

A minor in social work requires the completion of at least 12 credit hours of graduate course work. Students must complete at least two courses from among the 700-level courses listed below. Remaining course requirements may be taken from among the school's 500- and 600-level courses with the approval of the director of the M.S.W. program and the course instructor. The choice of courses comprising the minor must be made in consultation with the Ph.D. program director and have the approval of the student's identified faculty advisor.

### Faculty

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Professors

Margaret E. Adamek\*, Karen Allen\*, Larry Bennett\* (South Bend), Chuck Davis\*, James A. Hall\*, Carol Hostetter\*, Darlene Lynch\* (Northwest), Carol Massat\* (South Bend), Michael Patchner\*, Cathy K. Pike\*, Gerald T. Powers\* (Emeritus), Irene R. Queiro-Tajalli\*, W. Patrick Sullivan\*, Robert Vernon\*

#### Associate Professors

Robert B. Bennett, Stephanie Boys\*, Joan Carlson, Lynn Duggan, John Gallagher\* (South Bend), Carolyn Gentle-Genitty\*, Khadija Khaja\*, Hea-Won Kim\*, David Kondrat\*, Kathy Lay\*, Carmen Luca Sugawara\*, Heather McCabe\*, William Mello\*, Paul Mishler (South Bend), Barb Pierce\*, Vincent Starnino\*, Andrea Tamburro (South Bend), Jeffry Thigpen\*, Mark Thomas\* (Northwest), Joe Varga\*, Beth Wahler, Marquita Walker\*

#### Assistant Professors

Richard Brandon-Friedman, James Brown, , Ed Fitzgerald, Sadaaki Fuqui, Virgil Gregory, Kristin Hamre, Michin Hong, , Kimberly Johnson, John Keesler, Eric Kyere, Susan Glassburn, Jessica Lee, Susana Mariscal, Hasan Reza (South Bend), Katie McCarthy, Vicky Sultzman (Northwest), Bryan Victor, , Betty Walton, David Wilkerson, Tarek Zidan (South Bend)

#### Academic Advisor

Professor Margaret E. Adamek, Indiana University School of Social Work, 902 W. New York Street, Indianapolis, IN 46202, (317) 274-6730, [madamek@iupui.edu](mailto:madamek@iupui.edu)

### Courses

- SWK-S 710 Social Work Theories of Human and Social Behavior (3 cr.) This seminar focuses on the converging forces that have shaped the development, dissemination, and utilization of the human-behavior knowledge base of social work. It specifically examines the social and behavioral

science theory and research that provide the foundation for social work practice across a variety of system levels.

- SWK-S 718 Intermediate Statistics for Social Workers (3 cr.) Students will learn selected parametric and nonparametric statistics to examine research problems. Included in the learning process are hand computations of statistics development of skills in using a comprehensive computer statistics package and selection of statistical techniques based on levels of measurement and analyses of the assumptions of statistics.
- SWK-S 720 Philosophy of Science and Social Work (3 cr.) This course examines the nature and sources of social work knowledge and considers a range of epistemological issues involved in the selection, development, evaluation, and use of knowledge for social work.
- SWK-S 721 Preparing to Publish: Seminar in Advanced Scholarship Skills (3 cr.) This course prepares doctoral students for academic scholarship. Topics include expectations and standards for scholarly discourse, critical and analytical thinking skills, logical argument, scholarly writing and publication, and developing a research agenda. Web-based peer and instructor review of successive drafts of writing assignments culminate in a synthesized review of literature.
- SWK-S 724 Theory, Practice, and Assessment of Social Work Teaching (3 cr.) This course prepares doctoral students to effectively and competently teach social work courses. Content includes teaching philosophies; curriculum and syllabus development; teaching methods; technology related to teaching; assessment, testing, evaluation of students; and research related to teaching. Students will learn accreditation standards for bachelor's and master's social work education. Course goals will be accomplished using readings, written assignments, guest speakers, demonstrations of teaching, and class discussion.
- SWK-S 725 Social Work Research Internship (3 cr.) P: S720, S726, S727, or a foundation statistics course, and at least one of the following: S710, S730, or S740. This supervised field internship provides practical experience in conducting research relevant to social work practice. Students participate in a new or ongoing, faculty-supervised research project involving the design and implementation of a study, including the collection and analysis of data, and the development of appropriate research reports. Internship may be registered for up to three times.
- SWK-S 726 Advanced Social Work Research: Qualitative Methods I (3 cr.) Qualitative Methods I is the first of a two-course sequence designed to develop students' knowledge and skills in design, methods, strategies, and the challenges of qualitative research. This purpose of this course is to understand the role of theory and to critically examine a variety of qualitative methods for data collection. Students will critically evaluate qualitative



literature, research methods, and begin the process of framing a qualitative study.

- SWK-S 727 Advanced Social Work Research: Quantitative Methods I (3 cr.) Quantitative Methods I is designed to develop knowledge and skills in research designs and methods and addresses problems encountered in behavioral and social research. Students will critically evaluate quantitative research and ethics of scientific inquiry, develop a theoretically-motivated research question, and design a data collection strategy appropriate for that question.
- SWK-S 728 Advanced Statistics for Social Work (3 cr.) P: S718 Intermediate Statistics for Social Work. Students in this course learn how to evaluate statistical assumptions and select, compute, and substantively interpret a variety of multivariate statistics, using SPSS to analyze actual social work research data. Online resources, Web-based materials, and model applications of the statistics support students' learning.
- SWK-S 730 ProSeminar on Social Work Policy Analysis (3 cr.) This seminar focuses on the development and application of analytical tools necessary to critically examine and evaluate social policy theory and research germane to social work, including the values and ideologies that undergird social problem construction, social policy creation, and social program design. Specific attention is devoted to the application of these schemata for diverse populations.
- SWK-S 736 Advanced Social Work Research: Qualitative Methods II (3 cr.) P: S726. Qualitative Methods II is the second of a two-course sequence designed to develop students' knowledge and skills in design, methods, strategies, and the challenges of qualitative research. This purpose of this course is to apply the knowledge of theory and qualitative methods to the development of a research question. Students will choose a theoretical approach for a qualitative study, a method of data collection, evaluate the appropriate literature, collect, analyze, and interpret qualitative data.
- SWK-S 737 Advanced Social Work Research: Quantitative Methods II (3 cr.) P: S727. Quantitative Methods II is the second course in the research sequence designed to further develop students' knowledge, skills, and application of research methods. Based on their research proposal developed in the first sequence class, students will conduct their own research project and learn data collection and management, statistical analysis, interpretation of data, and writing a research report. Their learning will be facilitated through demonstrations and hands-on sessions in the computer lab as well as careful examination of application of research procedures in their own project.
- SWK-S 791 Integrative Seminar I (1.5 cr.) This course acquaints incoming doctoral students with campus resources for graduate students and with the expectations for doctoral education, including the policies, procedures, and academic standards

of the Graduate School and of the School of Social Work. Students register for this seminar in their first semester.

- SWK-S 792 Integrative Seminar II (1.5 cr.) This course is intended to support Ph.D. students as they finish up doctoral coursework and prepare for their qualifying paper, dissertation, and subsequent professional career. Students register for this seminar in their last semester of coursework.
- SWK-S 800 Dissertation Research (1-12 cr.)
- SWK-S 790 Special Topics in Social Work Practice, Theory, and Research Independent Studies (1-3 cr.) P: Approval by appropriate instructor. This course provides students with an opportunity to engage in focused study of a substantive area of social work practice directly related to the student's identified area of theoretical and research interest. It is completed with the approval and under the guidance of a member of the Ph.D. faculty.
- SWK-S 805 Select Topics in Social Work (1-5 cr.)

## Sociology

### School of Liberal Arts

Departmental E-mail: [sociolog@iupui.edu](mailto:sociolog@iupui.edu)

Departmental URL: <https://liberalarts.iupui.edu/departments/sociology/>

Departmental Facebook: <https://www.facebook.com/IU-Department-of-Sociology-at-IUPUI-492693780908945/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

Curriculum Courses Faculty

### Master of Arts Degree

#### Admission Requirements

Five undergraduate sociology courses (or approved equivalents, with no more than two of the latter) with a total grade point average of at least 3.0 (on a scale of 4.0); two samples of writing (a 500-750-word statement of purpose and a sole-authored report or term paper); official transcripts; and three letters of reference. International applicants are required to take the TOEFL. The GRE general test is not required.

Students not meeting the above requirements may be admitted on probation, or they may be required to enroll in courses as a graduate non-degree student to complete the prerequisites.

#### Course Requirements

Course Only Option: A total of 30 credit hours, distributed as follows: 12 credits of basic sociology courses (sociological theory [R556 or R557], quantitative methods [R551] or approved equivalent, qualitative methods [S659 or approved equivalent], and sociological statistics [R559 or approved equivalent]); 12 sociology credits with the option to focus these in medical sociology; 6 credits of electives (any graduate courses approved by the

University Graduate School). (An undergraduate statistics course [R359 or the equivalent] is a prerequisite for R559).

Thesis Option: A total of 36 credit hours, distributed as follows: 12 credits of basic sociology courses (sociological theory [R556 or R557], quantitative methods [R551] or approved equivalent, qualitative methods [S659 or approved equivalent], and sociological statistics [R559 or approved equivalent]); 12 sociology credits with the option to focus these in medical sociology); 9 credits of electives (any graduate courses approved by the University Graduate School); 3-6 in thesis credits. (An undergraduate statistics course [R359 or the equivalent] is a prerequisite for R559).

### Grades

Students must maintain a grade-point average of at least 3.0 (B) in all coursework.

### Ph.D. Minor

Students who are candidates for the Ph.D. degree in other departments may obtain a minor in sociology at IUPUI. The intent of the minor is to develop multidisciplinary skills, exposing students to theories and methods outside their major department. The Ph.D. minor in sociology has an unstructured curriculum that can provide students with a foundation in basic areas in sociology and the opportunity to study advanced sociological theory, qualitative and quantitative research methods, and statistics.

### Course Requirements

- Four sociology courses at the 500 level or above, totaling 12 credits.
- An average grade of B (3.0 on a 4.0 scale) or above in these courses.
- No more than one individual readings course.
- At least half of these courses must be taken at the IUPUI campus.

### Faculty

Curriculum Courses Faculty

### Chairperson

Professor Brian Steensland, Ph.D.

### Director of Graduate Studies

Carrie E. Foote

### Graduate Faculty

(An asterisk [\*] denotes endorsement to direct doctoral dissertations.)

### Professors

Robert W. White\*, Brian Steensland\*, Jerry Daday. Tami Eitle

### Associate Professors

Peter Seybold, Carrie E. Foote, Kenzie Mintus-Latham, Carly Schall, Andrew Whitehead, Devon Hensel

### Assistant Professors

Amy Shasanmi

### Courses

Curriculum Courses Faculty

- **SOC-R 515 Sociology of Health and Illness (3 cr.)** Surveys important areas of medical sociology, focusing on social factors influencing the distribution of disease, help-seeking, and health care. Topics covered include social epidemiology, the health-care professions, socialization of providers, and issues of cost and cost containment.
- **SOC-R 551 Quantitative Methods in Sociology (3 cr.)** Surveys the major quantitative techniques for investigating current sociological problems. It emphasizes the relationship between theory and practice in understanding and conducting research.
- **SOC-R 556 Advanced Sociological Theory I (3 cr.)** In-depth study of classical sociological theorists, particularly Marx, Durkheim, and Weber. Examines their roles in defining the discipline.
- **SOC-R 557 Advanced Sociological Theory II (3 cr.)** In-depth study of cotemporary sociological theories (e.g., social conflict, structural functionalist, symbolic interactionist) as a continuation of the issues raised by the classical sociological theorists as well as a response to the epistemological and social changes of the late twentieth century.
- **SOC-R 559 Intermediate Sociological Statistics (3 cr.)** P: R359 or equivalent. Basic techniques for summarizing distributions, measuring interrelationships, controlling extraneous influences, and testing hypotheses are reviewed as students become familiar with the computer system. Complex analytical techniques commonly applied in professional literature are examined in detail, including analysis of variance, path diagrams, factor analysis, and log-linear models.
- **SOC-R 585 Social Aspects of Mental Health and Mental Illness (3 cr.)** This is a graduate-level course that focuses on the sociology of mental illness and mental health. Provides a thorough grounding in the research issues and traditions that have characterized scholarly inquiry into mental illness in the past. Students will become familiar with public policy as it has had an impact on the treatment of mental illness and on the mentally ill themselves.
- **SOC-R 594 Graduate Internship in Sociology (3-6 cr.)** P: 18 hours of graduate credit in sociology. This course involves master's degree students working in organizations where they apply or gain practical insight into sociological concepts, theories, knowledge, and methodology. Students analyze their experiences through work logs, a lengthy written report, and regular meetings with a faculty committee. (Students on the thesis track may also take this course as an elective.)
- **SOC-R 697 Individual Readings in Sociology (1-6 cr.)** Investigation of a topic not covered in the regular curriculum that is of special interest to the student and that the student wishes to pursue in greater detail. Available only to sociology graduate students through arrangement with a faculty member.
- **SOC-S 526 The Sociology of Human Sexuality (3 cr.)** P: Graduate standing and consent of the

instructor. This is a one-semester graduate-level course in the sociology of human sexuality. This course will provide (a) a detailed examination of the development of sex research, (b) a sociological perspective on and critique of this corpus, and (c) an opportunity for students to develop research of their own.

- **SOC-S 560 Graduate Topics (3 cr.)** Exploration of a topic in sociology not covered by the regular curriculum but of interest to faculty and students in a particular semester. Topics to be announced. Emphasis is placed on the relation between the classic and contemporary literature in the field. Recent topics include "Textual Analyses" and "Health Policy and Politics".
- **SOC-S 569 M.A. Thesis (3-6 cr.)** P: Permission of the graduate director. All students on the thesis track must register for 3 credit hours (up to 6 credit hours total) of the thesis credits as part of the requirements for the degree.
- **SOC-S 616 Sociology of Family Systems (3 cr.)** P: Graduate standing or consent of the instructor. Focus on the nature, structure, functions, and changes of family systems in modern and emerging societies, in comparative and historical perspective. Attention is given to relationships with other societal subsystems, and to interaction between role occupants within and between subsystems.
- **SOC-S 659 Qualitative Methods in Sociology (3 cr.)** Methods of obtaining, evaluating, and analyzing qualitative data in social research. Methods covered include field research procedures, participant observation, interviewing, and audiovideo recording of social behavior in natural settings.

#### Rarely or Currently Not Offered Courses

- **SOC-R 517 Sociology of Work (3 cr.)** Must be at graduate standing. Course explores how work is being restructured in the "new economy." Topics include the changing meaning of work, the quest for dignity in the workplace, the plight of the working poor, and prospects for the labor movement (among other items).
- **SOC-R 525 Gender and Work (3 cr.)** P: Graduate standing and 6 credit hours of sociology, or consent of the instructor. This course critically analyzes contemporary theory and research on gender and work. It examines how women's and men's roles in paid and unpaid work are socially constructed, through socialization, social interaction, and the actions of social institutions. The interaction of gender, race, ethnicity, and social class will be explored.
- **SOC-R 530 Families and Social Policy (3 cr.)** P: R100, R220, graduate standing. This seminar will explore how the government and labor market affect family structure and the quality of family life. Students will study the implications of family research for social policy and learn to develop theoretical frameworks for evaluating social policies affecting families.
- **SOC-R 537 Gender and Society (3 cr.)** Examines some of the approaches to gender, emphasizing social interactionist and feminist theory/methods. In addition, we will relate these approaches to the study of contemporary gender approaches in selected social spheres, which may vary according to instructor's specialization.
- **SOC-R 593 Applied Fieldwork for Sociologists (3 cr.)** This course will provide students with both a theoretical and methodological background in the different types of qualitative analysis used in sociological fieldwork. Students will have the opportunity to study and to evaluate representative examples of qualitative studies and to complete by themselves a project done with qualitative methods.
- **SOC-R 610 Sociology of Health and Illness Behavior (3 cr.)** This seminar explores sociological and social scientific research on health and illness behavior. Special emphasis is placed on examining how social factors and conditions shape people's responses to disease, illness, and disability.
- **SOC-S 500 Pro-Seminar in Sociology (1 cr.)** P: Graduate standing and/or consent of the instructor. Introduction to current sociological research interests and concerns through the work of departmental members.
- **SOC-S 530 Introduction to Social Psychology (3 cr.)** P: Graduate standing or consent of the instructor. Examines the broad range of work in social psychology. Emphasis is placed on the relation between the classic and contemporary literature in the field.
- **SOC-S 610 Urban Sociology (3 cr.)** P: Graduate standing or consent of the instructor. Historical and contemporary causes, trends, and patterns of urbanization throughout the world. Various approaches to studying the process of urbanization, including ecological, social organizational, and political perspectives. Current developments and problems in urban planning.
- **SOC-S 612 Political Sociology (3 cr.)** P: Graduate standing or consent of the instructor. An analysis of the nature and operation of power in a political system. Topics may include classical theories of power, political behavior and campaigns, the role of mass media in sustaining power, the state as a social institution, and political movements.
- **SOC-S 613 Complex Organizations (3 cr.)** Theory and research in formal organizations: industry, school, church, hospital, government, military, and university. Problems of bureaucracy and decision-making in large-scale organizations. For students in the social sciences and professional schools interested in the comparative approach to problems of organization and their management.
- **SOC-S 632 Socialization (3 cr.)** The processes of development of the individual as a social being and societal member, focusing on childhood or socialization into adult roles.

## Social and Behavioral Sciences

**Richard M. Fairbanks School of Public Health**

**Program E-mail:** [fsphinfo@iu.edu](mailto:fsphinfo@iu.edu)

**Departmental URL:** <https://fsph.iupui.edu/academics/doctoral/minors/sbs.html>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

Curriculum

### Doctoral Minor in Social and Behavioral Sciences Discover the Doctoral Minor in Social and Behavioral Sciences

The IU Richard M. Fairbanks School of Public Health offers a PhD minor in Social and Behavioral Sciences that provides students with a foundation in the concepts, principles and practice of the topic. People who possess these specialized skills are in high demand because of what they can contribute to many doctoral-level research projects.

The doctoral minor in Social and Behavioral Science is a rigorous, highly focused 12-credit hour minor that serves as a useful complement to many major areas of study. You will learn both theoretical concepts and how to apply them. By completing this minor, you will be able to:

- Identify the causes and conditions linked to social, cultural, and behavioral factors that affect the health of individuals and populations
- Use systems methods to analyze the effects of political, social, and economic influences on public health systems at the individual, community, state, national, and international levels
- Identify social, cultural, and behavioral science factors, theories, and models used to develop, implement, and evaluate interventions designed to positively affect health behaviors in populations
- Describe steps and procedures for planning, implementation, and evaluation of public health programs, policies, and interventions
- In collaboration with others, prioritize individual, organizational, community, and societal concerns and resources for public health programs, policies, and interventions
- Apply evidence-based approaches in the development, implementation, and evaluation of social and behavioral science interventions in diverse populations
- Specify targets and levels of intervention for social and behavioral science programs and/or policies

Because you can choose three of the courses from a list of options, you can easily customize this minor to your unique interests and needs. This minor is ideal for students from many schools, including the IU schools of Nursing, Dentistry, Medicine, Physical Education and Recreation, Health Rehabilitative Sciences, Law, and Public and Environmental Affairs.

Students who wish to obtain a doctoral minor from the IU Richard M. Fairbanks School of Public Health must earn a grade of "B" or better in the coursework for the minor. Courses in which a grade of "B-" or lower is earned will not apply toward completion of the minor. Faculty in the department of Social and Behavioral Sciences will serve as advisors for students choosing this minor.

### Required Course

- PBHL S500 Social and Behavioral Sciences in Public Health (3 credits)

### Plus choose three courses from the following list:

- PBHL S510 Introduction to Research Methods in Public Health (3 credits)
- PBHL S614 Program Planning in Public Health (3 credits)
- PBHL S617 Health Promotion and Disease Prevention (3 credits)
- PBHL S620 Biobehavioral Mechanisms of Stress (3 credits)
- PBHL S631 Maternal, Child, and Family Health (3 credits)
- PBHL S615 Culture and Qualitative Methods (3 credits)
- PBHL S625 Applied Public Health Campaign and Social Marketing Strategies (3 credits)
- PBHL S622 Coaching for Health and Wellness (3 credits)
- PBHL S658 Methods for Research and Social Behavioral Dimensions of Public Health (3 credits)

Other courses may be taken if approved by the student's minor advisor. Students who have already completed any of the required courses as part of their MPH or PhD requirements may not apply those courses toward their minor in Social and Behavioral Sciences and must instead work with their faculty advisor to identify alternate SBS courses.

The student's minor advisor will monitor satisfactory completion of the requirements for the doctoral minor in Social and Behavioral Sciences. Doctoral students must notify the Fairbanks School of Public Health before beginning their course of study for the minor.

### Faculty

#### Chairperson

Dr. Rosa Tezanos-Pinto

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Professors

Dr. Marta Anton\*

#### Associate Professors

Dr. Herbert Brant\*, Dr. Rosa Tezanos-Pinto

#### Assistant Professors

Dr. Enric Mallorquí-Ruscalleda, Dr. Josh Prada



## Clinical Assistant Professors

Dr. Iker Zulaica-Hernández

## Director of Graduate Studies

Dr. Iker Zulaica-Hernández

Cavanaugh Hall 545-B

E-mail: izulaica@iupui.edu

Phone: (317) 278-0135

## Courses

- **SPAN-S 511 Spanish Syntactic Analysis (3 cr.)**P: S326, S427 or consent of instructor. Introduction to the analysis of syntactic data. Focus on developing theoretical apparatus required to account for a range of syntactic phenomena in Spanish. May be repeated for a maximum of 6 credit hours. The course is conducted entirely in Spanish. May be repeated for a maximum of 6 credit hours.
- **SPAN-S 513 Introduction to Hispanic Sociolinguistics (3 cr.)**P: S320, S426 or consent of instructor. This course examines the relationship between language and society in the Spanish-speaking world. It surveys a wide range of topics relevant to Spanish: language as communication, the sociology of language, and linguistic variation. The course is conducted entirely in Spanish.
- **SPAN-S 515 The Acquisition of Spanish as a Second Language (3 cr.)**P: S426, S428, or consent of instructor. This course is designed primarily to provide graduate students of Spanish with an introduction to the study of the acquisition of Spanish as a second language. We will survey a selection of studies exploring topics that range from the development of second language (Spanish) grammars, to second language production, second language comprehension, input processing, and the acquisition of pragmatic and sociolinguistic competence. Students are expected to work on a research project. The course is conducted entirely in Spanish.
- **SPAN-S 517 Methods of Teaching College Spanish (3 cr.)**P: S428 or consent of instructor. This course on communicative language teaching takes as its point of departure the body of research on second language development. We extrapolate from this base principles and parameters to guide classroom instruction. We cover a full range of topics from grammar and input to spoken and written language. Students are expected to work on a research project and derive pedagogical implications for teaching Spanish. The course is conducted entirely in Spanish.
- **SPAN-S 518 Studies in Latino and Spanish American Culture (3 cr.)**P: S412 or consent of instructor. This graduate-level course introduces essential themes and topics in the study of the cultural phenomena produced in Latin America and among Hispanics in the United States. The object of inquiry will include the knowledge, belief systems, artistic production, laws, customs, and other socially determined behaviors that pertain to the Spanish-speaking peoples in the Western hemisphere. Topics such as the relationship between the colonizer and the colonized, the structure of institutions that express or govern social relationships, manifestations of popular culture, the various forms by which communication is affected, high and low art, religious syncretism, and native indigenous cultures will be explored. Students will make an oral presentation on a theoretical text and write a research paper.
- **SPAN-S 519 Practicum Teaching of Spanish (3 cr.)**P: S517 or instructor's consent. Practical application of the teaching methodology explored in S517 Methods of Teaching College Spanish. Students will undertake teaching projects supervised by a graduate faculty member in Spanish and meet with their mentors to assess their teaching objectives, techniques, materials, and outcomes.
- **SPAN-S 521 Spanish Grammar & Linguistics I (3 cr.)**This course presents themes and issues in Spanish grammar and in Hispanic linguistics selected for their relevance to teaching Spanish to nonnative students. Pedagogical implications and teaching strategies will be discussed. Content is distinct from that of S524.
- **SPAN-S 523 Literature, Art & Culture I (3 cr.)**This course presents authors, artists, themes, and issues in Spanish literature, visual art, and cultural life selected to enrich the teaching of Spanish to nonnative students. Pedagogical implications and teaching strategies will be discussed. Content is distinct from that of S525.
- **SPAN-S 524 Span Grammar & Linguistics II (3 cr.)**This course presents themes and issues in Spanish grammar and in Hispanic linguistics selected for their relevance to teaching Spanish to nonnative students. Pedagogical implications and teaching strategies will be discussed. Content is distinct from that of S521.
- **SPAN-S 525 Literature, Art & Culture II (3 cr.)**This course presents authors, artists, themes, and issues in Spanish literature, visual art, and cultural life selected to enrich the teaching of Spanish to nonnative students. Pedagogical implications and teaching strategies will be discussed. Content is distinct from that of S523.
- **SPAN-S 528 Translation Practice and Evaluation (3 cr.)**A graduate credit course in the problems and techniques of Spanish/English and English/Spanish translation. Includes the practical aspects of translation from various texts (literary, technical, scientific, commercial, social) and evaluation of professional translations. Translation theory will also be studied.
- **SPAN-S 680 Topics in Contemporary Spanish American Literature (3 cr.)**Topics include poetry, drama, short story, novel, essay.
- **SPAN-S 686 M.A.T. Thesis (2-6 cr.)**P: Authorization of Graduate Director. Students will identify a research theme and develop it under the guidance of a director. The topic will be related to the teaching of the Spanish language or to the teaching of an aspect of Hispanic culture. Repeatable for credit up to 6 hours.
- **SPAN-S 650 Topics in the Teaching of Spanish (3 cr.)**Seminar in selected topics related to the teachings of Spanish, such as assessment, teaching materials development, the teaching of specific



linguistic skills. This is a variable title course that may be repeated for credit when topic varies.

- **SPAN-S 508 Varieties of Spanish (3 cr.)** This course is an advanced descriptive analysis of the varieties of Spanish spoken around the globe. A detailed analysis of the phonetic, lexical and morphosyntactic aspects of such varieties is provided with an aim to defining different macro-dialectal areas, including Spanish in the US and Creole languages.
- **SPAN-S 527 Internship in Spanish (3-6 cr.)** P: S517 or consent of instructor. A supervised internship on the application of Spanish studies in educational work settings. Each intern will be assigned a project supervised by a graduate faculty member in Spanish. Interns will complete a portfolio of workplace learning and self-evaluation; they will also be visited by a faculty coordinator and evaluated in writing by their on-site supervisors.
- **SPAN-S627 Individual Readings in Spanish (3-6 cr.)** Graduate standing or consent of instructor. Enables students to work on a reading project that they initiate, plan and complete under the direction of a graduate faculty member in Spanish. Credit hours depend on scope of project.

## Faculty

### Director

Professor Brian Vargus\* (Political Science)

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Linda Haas\* (Sociology), Brian Vargus\* (Political Science), Eric Wright\* (Public and Environmental Affairs)

### Associate Professors

Margaret Ferguson (Political Science)

### Assistant Professor

Aaron Dusso, (Political Science)

### Academic Advisor

Professor Brian Vargus\*, Cavanaugh Hall 504C, (317) 274-7226

## Courses

**POLS-Y 567 Survey Research: Approaches and Issues (3 cr.)** An introductory seminar that will discuss all the key approaches, issues, and concepts in survey research, allowing students to identify more specific issues that may be examined in their elective courses. One element of the course will be hands-on introduction to the facilities and methods of the IU Public Opinion Laboratory.

### **POLS-Y 575 Political Data Analysis I (3 cr.)**

Introduces students to quantitative research methods for studying politics, focusing on topics that are statistical in content or that must be addressed for statistics to make sense. Students who complete the course will achieve a level of statistical competency that will enable them to enroll in courses concerned with multivariate

statistical techniques, and will acquire the basic skills of data analysis.

Alternates

Public Affairs V506 Statistical Analysis for Effective Decision Making (3 cr.)

Public Health S528 Mathematical Statistics (3 cr.)

Sociology R551 Sociological Research Methods (3 cr.)

Or any other graduate course that includes inferential statistics through regression analysis and is accepted by the program committee.

**POLS-Y 576 Political Data Analysis II (3 cr.)** Builds upon Y575 by familiarizing students with more advanced research methods, such as multiple regression analysis and techniques for dealing with categorical and limited dependent variables. Models to be covered include logit, probit, multinomial logit, ordered probit, duration models, and survival analysis. Attention will be directed at the application of these methods to political phenomena, policy applications, and the presentation of results. Alternates Public Health P600 Epidemiological Research Methods (3 cr.) Sociology R559 Intermediate Sociological Statistics (3 cr.) Or any other graduate course that includes inferential statistics through regression analysis and is accepted by the program committee.

**POLS-Y 580 Research Methods (3 cr.)** This course surveys the major techniques for investigating current political and policy problems. It emphasizes the relationship between theory and practice in understanding and conducting research. It will examine issues in field research essential to a full understanding of a research problem. Alternates Health Administration H518 Statistical Methods for Health Services (3 cr.) Public Health P601 Advanced Epidemiology (3 cr.) Sociology R551 Sociological Research Methods (3 cr.) Sociology R663 Public Opinion: Research and Methods (3 cr.) Or any other graduate course that includes inferential statistics through regression analysis and is accepted by the program committee.

**POLS-Y 590 Seminar in Survey Research (3 cr.)** A capstone seminar designed to be taken as last course in certificate program and to examine current issues in the application of survey research to public policy. Students will share with students from a variety of disciplines their particular applications to increase interdisciplinary awareness of problems and prospects of survey research.

## Teaching Writing

### School of Liberal Arts

Departmental Email: [english@iupui.edu](mailto:english@iupui.edu)

Departmental URL: [http://liberalarts.iupui.edu/english/index.php/academics/teachwtg/teachwtg\\_home](http://liberalarts.iupui.edu/english/index.php/academics/teachwtg/teachwtg_home)

Departmental Contact: Kim Brian Lovejoy  
(317-274-2120)

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## Program of Studies

### Graduate Certificate in Teaching Writing

This is a 20-hour program of study for certified middle school or high school teachers, part-time university writing faculty and lecturers in other disciplines, and M.A. students interested in earning a certificate in writing to enhance their professional teaching careers.

Major topics include theories and methods of teaching writing; understanding linguistic diversity; uses of technology in writing; social aspects of writing development; non-fiction writing; writing assessment; and teacher research. The certificate requires completion of five graduate courses consisting of one core course and four elective courses.

Graduate credits earned can be applied toward the M.A. in English, upon acceptance in the M.A.

### Admission

Admission to the *Certificate* program would require one of the following: (1) State certification in middle school or high school teaching; (2) Current enrollment as a Graduate student at IUPUI; (3) Successful completion of an M.A. degree or higher at an accredited university; (4) Successful completion of a B.A. with a minimum GPA of 3.0 (out of 4.0) or the equivalent from an accredited institution.

### Required Course

W509 Introduction to Writing and Literacy Studies (4 cr.)

### Elective Courses: (16 cr.)

W500 Teaching Writing: Issues and Approaches (4 cr.)  
 W505 Graduate Creative Non-fiction Writing (4 cr.)  
 W508 Graduate Creative Writing for Teachers (4 cr.)  
 W510 Computers in Composition (4 cr.)  
 W531 Designing and Editing Visual Technical Communication (4 cr.)  
 W553 Theory and Practice of Exposition (4 cr.)  
 W590 Teaching Composition: Theory and Practice (4 cr.)  
 W600 Topics in Rhetoric and Composition: Language, Dialects, and Writing (4 cr.)  
 W605 The Writing Project Summer Institute (4 cr.)  
 W609 Individual Writing Projects (1-4 cr.)  
 W697 Independent Study in Writing (1-3 cr.) (Writing Project Advanced Institute)

## Translational Science

### School of Medicine

Departmental Email: [cahansel@iu.edu](mailto:cahansel@iu.edu)

Departmental URL: <http://pediatrics.iu.edu/pediatric-education/ms-translational-science/>; <https://www.indianactsi.org/programs/tsep>

### Program Director

Professor R. Mark Payne\*

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff uses those requirements contained only in *The University Graduate School Bulletin*.)

## Curriculum

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations)

### Degree Offered

Master of Science Track 1 and Track 2, Graduate Certificate, Ph.D. Minor

### Special Departmental Requirements

(See also general University Graduate School requirements.)

### Master of Science in Translational Science

Indiana University's Translational Science Program focuses on biomedical research techniques – how to translate a basic science discovery into a treatment or diagnosis protocol that physicians and clinicians can use to treat their patients. The objective of the Translational Science Program of Indiana (T.S.P.I.) is to jointly train scientists, engineers, and physicians or clinicians in the methodology of translational research (basic science and medicine working to advance care for patients). Using a unique model of dual mentorship from a clinical discipline, such as medicine, and basic science, this interdisciplinary program will prepare future leadership in translational research by integrating training in cutting edge basic science with human health and disease. This training program is focused on how to collaboratively apply scientific findings to health-related problems, and operates at the T0–T1 range of the Spectrum of Translational Research. The product of this training program is expected to meet the rapidly growing need for highly trained scientists, engineers, and clinicians who can work collaboratively to advance new findings into patient care in both academic centers, as well as the biotechnology and pharmaceutical industries.

### Course Requirements

The Master of Science program is divided between two main components: (1) completion of the formal curriculum, and (2) active involvement in translational basic science research under the dual mentorship of faculty scientists – one in the basic science arena and the other in the clinical science field.

Both elements are critical in preparation of the candidate for successful research following graduation. Besides didactic classes, there is substantial research training in scientific writing and grant preparation. The curriculum is designed to cover core competency areas through a combination of course work and mentored research. The two-year M.S. program consists of a 30 credit hour curriculum, which includes the following core courses—G504/G505/G555, B652B651/B6522, G667, G668, N802, and approved electives. Additionally, Track 1 requires the completion of G669 and G670; whereas, Track 2 requires the completion of G671.

### Grades

An overall average of at least a B (3.0) is required.

### Thesis

Track 1 requires both research experience (GRAD G669 Mentored Basic Science Translational Research) and a thesis (GRAD G670). Track 2 requires a clinical rotation

experience (see GRAD G671 Clinical Rotations for Translational Scientists and Engineers) is completed in lieu of thesis.

### Graduate Certificate in Translational Science

This is an 18-credit certificate with four required courses (G667: Tools & Techniques in Translational Research, G668: Quantitative Aspects in Translational Research, G504/G505/G555: Research Ethics, and B651, B551, or B652 : Biostatistics I or II). These four courses will constitute 10-12 credits; the remaining 6–8 credits will consist of graduate-level elective courses that are relevant to the student's research interests. Electives (6–8 cr. credits approved by program director) include graduate-level courses in more advanced biostatistics, epidemiology, clinical pharmacology, genetics, molecular biology, computer sciences, or other courses relevant to the individual student's field of research.

### Courses

**G667 Tools and Techniques in Translational Research** (3 cr.) This course is offered in the fall semester and provides the advanced student with an understanding of the basic technologies and techniques used in translational research today. Key to this training is understanding how and when to use these technologies, and how to interpret their results and pitfalls. The trainees develop an understanding of the components for protecting human subjects, and how to move a novel concept from the lab to a patient. Finally, the student will understand how to identify and measure target endpoints in patients, and how to assemble a multi-disciplinary team to conduct translational research. The course will use a case-based approach whereby specific technologies and problems are demonstrated in readings drawn from the textbook. The course is supported by the Indiana C.T.S.I. Course Director: R. Mark Payne.

**G668 Quantitative Aspects of Translational Research** (3 cr.) An interdisciplinary weekly seminar series offered in the spring semester. Targeted toward the advanced graduate student and clinical or research based postdoctoral fellows, it will provide a forum for both Level 1 (bench to bedside) and Level 2 (clinical studies to practice) translational researchers to work together in learning both the key concepts and principles required to develop medically relevant solutions. Through a systematic exploration of diabetes mellitus, students will be exposed to the process of learning about any disease. Lecturers will represent the multiple disciplines with a stake in dealing the various aspects of disease; thus, providing students with a better global understanding.

**G504/G505/P555 Research Ethics (Responsible Conduct of Research - R.C.R.)** (1-3 cr.) All M.S. students must enroll in coursework related to R.C.R. if they have not already done so.

1. **G504** Introduction to Research Ethics (2-3 cr.) More intensive course than G505. Taught by the Department of Medical and Molecular Genetics and The IU Center for Bioethics. Course Director: Kimberly Quaid de Cordon. Offered 3 times in the past 3 years (every fall).
2. **G505** Introduction to Research Ethics (1 cr.) Offered in the fall semester, G505 includes lecture and small group discussion formats and covers

important issues in biomedical research, such as: 1) Scientific misconduct, 2) Conflict of interest, 3) Animal rights and welfare, 4) Ownership of data, intellectual property, and copyright management, 5) Authorship and scientific manuscripts, and 6) Informed consent and human subjects. Offered 3 times in the past 3 years (every fall).

3. **PHIL P555** Ethical and Policy Issues in International Research (3 cr.) If students are contemplating international research, they may opt for this course. This course examines ethical and policy issues in the design and conduct of transnational research involving human participants.

Topics discussed include: economic and political factors; study design; the role of ethics review committees; individual and group recruitment/informed consent; end of study responsibilities; national and international guidelines. Course Director: Eric M. Meslin.

**B652B651 Biostatistics I** (or approved equivalent) (3 cr.) B652B651 is an introductory level biostatistics course designed for healthcare professionals. It is the first in the B652B651 and B6522 series on biostatistics methodology. The course covers topics such as data description and presentation techniques, probability and probability distributions, sampling distributions, statistical inferences from small and large samples, analysis of categorical data, analysis of variance, correlation and simple linear regression analysis. Upon completion of the course, students will achieve a basic understanding of the concepts and techniques of data description and statistical inferences. Students will also acquire a working knowledge of SPSS, a commonly used statistical computation program. Students will be able to understand and interpret the statistical analyses in research articles published in medical journals. Course Director: B. Katz. Offered 6 times in the past 3 years (spring and fall semesters).

or

**B652 Biostatistics II** (or approved equivalent) (3 cr.) B652 is an advanced applied biostatistics course designed for students with an interest in the health sciences. Students are expected to have completed at least one semester course of basic biostatistics. Knowledge of probability and probability distributions, concepts of estimation and hypothesis testing are assumed. Topics covered in this course include multiple linear regression, multi-factor analysis of variance, analysis of covariance, analysis of repeated measures, logistic regression model, and survival analyses. Upon completion of the course, students are expected to understand the appropriate statistical models for various outcomes and be able to interpret results using statistical techniques covered in this course. Offered 3 times in the past 3 years (every fall).

or

**Biostatistics for Public Health I** (B551 or approved equivalent) 3 cr. B551 is an introductory level biostatistics course designed for healthcare professionals. The course covers topics such as data description and presentation techniques, probability and probability distributions, sampling distributions, statistical inferences from small and large samples, analysis of categorical data, analysis of variance, correlation and simple linear regression

analysis. Upon completion of the course, students will achieve a basic understanding of the concepts and techniques of data description and statistical inferences. Students will also acquire a working knowledge of SPSS, a commonly used statistical computation program. Students will be able to understand and interpret the statistical analyses in research articles published in medical journals. Offered in spring and fall.

**N801 Techniques of Effective Grant Writing** (or approved equivalent) (3 cr.) This is an intensive course / workshop designed to teach fellows and graduate students how to write and review an N.I.H. application. Trainees will write an N.R.S.A., R03, or K-award application. Offered 3 times in the past 3 years (every fall).

#### **Electives** (3-7 credits)

Example electives include graduate level courses in more advanced biostatistics, epidemiology, clinical pharmacology, genetics, molecular biology, and computer sciences. However, enrollees may select electives from the entire offering of graduate courses at both Indiana University and Purdue University at Indianapolis as well as IU at Bloomington. Must be approved by Program Director.

#### **Requirements for M.S. in Translational Science for people with clinical background (i.e., M.D.)**

**G669 Mentored Basic Science/Translational Research** (9 cr.) This mandatory course requires the student to construct an organized translational research project under dual mentorship (M.D. and Ph.D.) by faculty. The capstone experience is the completion of a grant in the N.I.H. format suitable for peer-review and presentation before one's peers. This course will be conducted in the fall, spring, and summer terms, graded by faculty, and should be in a format supporting submission to a funding organization. Students will enroll for 3 credits per semester for up to 3 semesters. Course Director: R. Mark Payne

**G670 Thesis in Translational Research** (3 cr.) This mandatory course requires the student to complete a research thesis based on their mentored basic science/translational research project. Course Director: R. Mark Payne

#### **Requirement for M.S. in Translational Science for people with Basic Science background (i.e., Ph.D.)**

**G671 Clinical Rotations for Translational Scientists and Engineers** (9 cr.) Students rotate in pairs through all rotations, and an effort is made to only have two students on each rotation at a time to maintain a high quality experience. These courses serve to both introduce the students to clinical medicine, and acclimatize them to the language and environment of hospital-based and out-patient medical care. Designed as practicums, these courses are particularly aimed at non-clinician scientists intending to conduct translational research.

#### **Ph.D. Minor in Translational Science**

This is a 12-credit program which focuses on biomedical research techniques—how to translate a basic science discovery into a treatment or diagnosis protocol that physicians and clinicians can use to treat patients. All students expressing interest will be encouraged to speak with the program director or one of the Executive Committee members. The minor program will be approved

by the student's advisory committee, which will take into consideration the student's total didactic experience. The advisory committee may approve additional and/or substitution of appropriate courses to complete the degree requirements. The minor representative on this Committee will be selected from outside the student's major department.

#### **Courses**

(See course descriptions above.)

**G667 Tools and Techniques in Translational Research** (3 cr.)

**G668 Quantitative Aspects of Translational Research** (3 cr.)

**G504/G505/P555 Research Ethics (Responsible Conduct of Research - R.C.R.)** (1-3 cr.)

**B651 Biostatistics I** (or approved equivalent) (3 cr.)

or

**B652 Biostatistics II** (approved equivalent) (3 cr.)

or

B551 Biostatistics I for Public Health

**Electives:** Must be approved by Program Director (up to 3 cr.)

#### **Faculty**

Curriculum Faculty

#### **Professors**

Cleveland Hayes\*, Christine Leland\*, Stacy Morrone\*, Pat Rogan\*, Jim Scheurich\*, Annela Teemant\*

#### **Associate Professors**

Tambra Jackson\*, Brendan Maxcy\*, Crystal Morton\*, Jomo Mutegei\*, Thu Suong Nguyen\*, Megan Palmer\*, Samantha Scribner\*, Chalmer Thompson\*, Kathleen King Thorius\*, Craig Willey

#### **Assistant Professor**

Na Mi Bang, Sha'Kema Blackmon, Cristina Santamaria Graff, Lasana Kazembe\*, Jeremy Price, Teresa Sosa

#### **Clinical Professors**

Paula Magee

#### **Associate Clinical Professors**

Natasha Flowers, Deborah Keller, Monica Medina, Gina Yoder

#### **Assistant Clinical Professors**

Lonni Gill, Jasmine Graham, Taneshia Greenidge, Hardy Murphy, Kara Taylor, Karla Zaccor

\*Denotes faculty who have received endorsements to direct doctoral dissertations.

## **Urban Education Studies**

#### **School of Education**

**Departmental URL:** <https://education.iupui.edu/academics/degrees-programs/doctoral/urban-education/index.html>



## Curriculum

Curriculum Faculty

## Degree Offered

Doctor of Philosophy

## Admission

Admission to the urban education studies doctoral program is competitive and requires faculty approval. Admission is based on an applicant's qualifications, submitted application materials (including official transcripts\*, resume/curriculum vitae, writing sample, personal statements, letters of recommendation), a personal interview, and references. The GRE is not required for admission. In addition, the IU School of Education at IUPUI follows standard policies and procedures of the IUPUI Graduate Office.

A master's degree is required for admission to the program. If you are enrolled in a master's program at the time you apply but have not yet completed the program, you must do so before you begin urban education studies doctoral course work.

\*Please note e-transcripts are not accepted at this time.

## Application Deadline

Ordinarily, the deadline for applications is November 1<sup>st</sup> of each year. Here is information about the application requirements: [education.iupui.edu/admissions-aid/apply/doctoral/index.html](http://education.iupui.edu/admissions-aid/apply/doctoral/index.html)

To apply, complete the online application and submit all materials to the address below:

IU School of Education at IUPUI

Graduate Admissions  
902 W. New York Street  
Indianapolis, IN 46202-5155

Program specific questions can be directed to the program coordinator, Dr. Jim Scheurich at [jscheuri@iupui.edu](mailto:jscheuri@iupui.edu).

## Course Requirements

90 credit hours of coursework including:

### Urban Education Studies Major (36 credit hours)

Required courses (21 credit hours)

- EDUC-T 620 Issues in Urban Education (3)
- EDUC-J 655 Multicultural and Global Education (3)
- EDUC-T 690 Early Inquiry in Urban Education (3)
- EDUC-T 650 Teaching Internship in Urban Education (3)
- EDUC-T 750 Topical Seminar in Urban Education (6-taken twice for 3 credit hours each)
- EDUC-T 700 Research Seminar in Urban Education (3)

Additional course choices (15 credit hours)

- EDUC-A 560 Political Perspectives of Education (3)
- EDUC-A 653 The Organizational Context of Education (3)
- EDUC-A 672 Moral Dimensions of Leadership (3)
- EDUC-H 520 Education and Social Issues (3)
- EDUC-H 530 Philosophy of Education (3)

- EDUC-J 500 Instruction in the Context of Curriculum (3)
- EDUC-J 630 Curriculum Theory and Practice (3)
- EDUC-K 553 Classroom Management (3)
- EDUC-K 548 Families, School and Society (3)
- EDUC-L 500 Instructional Issues in Language Learning (3)
- EDUC-L 524 Language Education Issues in Bilingual and Multicultural Education (3)
- EDUC-L 540 ESL/EFL Instruction and Assessment Approaches (3)
- EDUC-P 507 Assessment in Schools (3)
- EDUC-T 515 Inter-professional Collaboration in Urban Schools and Communities (3)
- EDUC-T 531 Organizational Change in Cultural & Linguistically Diverse Schools (3)
- EDUC-T 630 Topics in Urban Education: Variable Topics (3)
- EDUC-T 550 Cultural/Community Forces and the Schools (3)
- EDUC-Y 510 Action Research I (3)

### Research core (15 credit hours)

- EDUC-Y 521 Methodological Approaches to Educational Inquiry (3)
- EDUC-Y 502 Intermediate Statistics Applied to Education (3)
- EDUC-Y 611 Qualitative Inquiry in Education (3)
- EDUC Y 650 Topics in Inquiry Methodology (3). Topic: Multivariate Statistics in Education Research
- Advanced Research Methods (3) selected with approval from faculty advisor

### Minor (12 to 18 credit hours)

In consultation with and approval of your Advisory Committee, you will identify a Minor area of study. Course credit hours taken to satisfy PhD Minor requirements may vary depending on the Department/School through which the Minor is completed.

### Electives (9 to 15 credit hours)

In consultation with and approval of your Advisory Committee, you will take Elective courses that give you additional breadth of knowledge around your particular interests and contributes to a coherent plan of study.

Together, the Minor and Elective courses must total a minimum of 24 credit hours.

### Dissertation (15 credit hours)

- EDUC- T 795 Doctoral Proposal Preparation in Urban Education (3)
- EDUC- T 799 Doctoral Thesis in Urban Education (12)

### Advisory Committee

All students in the Urban Education Studies PhD program, with approval of the program coordinator, will select an advisory committee of three faculty members one of whom represents the student's minor area of study.

### Qualifying Examination



All students complete qualifying examinations focused on comprehensive understanding of program coursework including both a written component and an oral defense.

### Research Committee

Upon successful completion of coursework, qualifying dossier, and qualifying examinations, students, with approval of the program coordinator, will select a research committee of four faculty members including one outside member. The research committee must approve the proposed and completed dissertation study.

### Final Examination

Oral defense of dissertation.

### PhD Minors offered through the School of Education PhD Minor in Counselor Education

A minor in Counselor Education requires 12 credit hours of the following courses or their equivalent: G522 (Counseling Theory), G523 (Counseling Techniques), G552 (Career Counseling) and G575 (Multicultural Counseling). Determining equivalency for these courses will need to occur in consultation with a Counseling/Counselor Education faculty member, and transferred courses must come from Council for Accreditation of Counseling & Related Educational Programs (CACREP) accredited programs.

### PhD Minor in Education Law, Policy & Advocacy

The Educational Law, Policy, & Advocacy PhD minor requires students to complete 12 credit hours. Of the 12 credits, 3 credits are elective and may be fulfilled through the School of Education or other schools (e.g., O'Neill, Social Work, Law) with minor advisor approval. Courses must be at the graduate level and support students' research interests. The combination of coursework focuses on topics related to educational law, leadership, and policy.

### PhD Minor in Educational Leadership

The Educational Leadership PhD minor requires students to complete 12 credits of A-prefixed doctoral level courses that support students' research interests. A-prefixed courses focus on topics related to K-12 educational administration, leadership and policy. This minor provides students in the Urban Education Studies PhD program, and other PhD programs at IUPUI with a minor option that focuses on research, practice and policy related to educational administration. This minor would be valuable for students (in any school) whose research interest overlaps with issues related to educational organizations, policy and leadership. It is recommended that the 12 credit hours of coursework be at 600-level or above.

### PhD Minor in Mathematics Education

The Mathematics Education Minor requires 15 credit hours of coursework and is designed to help doctoral students learn about research on the learning and teaching of mathematics, and research on the preparation of mathematics teachers. The minor will be personalized, designed by the student and his/her minor advisor. Students are required to take a minimum of 2 doctoral seminars in mathematics education (normally N716) and 3 credits of independent study (N590) or internship (N610) in mathematics education. The remaining 6 hours can be chosen from N543, NS I 7, N518, N590, N610, or N716. There is no qualifying exam required for the mathematics

education minor. However, there is the expectation that at least one question of the qualifying exams for the urban education studies doctoral degree will be related to the minor area.

### Combined Doctor of Philosophy in Urban Education Studies and Master of Jurisprudence

Students who successfully complete this dual degree program will receive a Master of Jurisprudence Degree (MJ) from the Robert H. McKinney School of Law and a Doctor of Philosophy (PhD) degree from the IU Graduate School and IUPUI School of Education. As stand-alone degrees, the MJ degree is 30 credit hours and the PhD degree is 90 credit hours. The dual MJ/PhD degree is at least 90 credit hours. Both degrees must be conferred simultaneously.

### Admissions Requirements

Applicants to the dual MJ-PhD degree must apply and be admitted to each program separately and must adhere to the admissions requirements and prerequisite courses stipulated by each program. The student's decision to complete the dual MJ-PhD degree must be declared to the MJ and PhD programs.

PhD students are required to have a master's degree for admissions into the PhD program, and PhD students have the option to transfer 30 credits of their master's degree into their PhD Program of Studies. Dual degree students will have the combination of two options: (1) they may transfer all 24 credits of the MJ into the PhD Program of Studies and have an additional 6 credits to transfer in so long as all credits are of grades no lower than B and complies with University Graduate School policies; (2) they may transfer all MJ credits with grades no lower than B and have the option to transfer additional master's credits per University Graduate School policies up to a total of 30 credit hours. MJ credits will first satisfy the PhD minor requirements and allow for elective credits to have a potential combination of MJ and other master's credits.

Dual degree students will have an individualized PhD minor.

Review the admission requirements for the Urban Education Studies, doctoral program.

Information about the MJ program and admission process is available here: <https://mckinneylaw.iu.edu/admissions/mj/index.html>

## Women's Studies

### School of Liberal Arts

Departmental E-mail: [wostudy@iupui.edu](mailto:wostudy@iupui.edu)

Departmental URL: <http://liberalarts.iupui.edu/wost/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Women's Studies Program

Women's Studies brings together faculty, students, and member of the community interested in women's issues in teachings, research, and service. Interdisciplinary in

nature, WOST explores a wide range of issues as seen through the perspective of gender. Women's Studies can help shape a vision of women's position in society that will enable students to make a more meaningful contribution wherever their career paths and future engagements may lead. A degree in Women's Studies should enhance a student's effectiveness in virtually any career.

For careers in law or social service, WOST gives insight into social practices that oppress women, such as rape, abuse, and job discrimination. For careers in biology, medicine, nursing, or other allied health professions, WOST offers an understanding of women's health needs. For business careers, WOST teaches students to understand the barriers and the opportunities for women seeking careers in the corporate world.

Requirements for the Graduate Minor

A total of 12 credit hours.

## Faculty

### Director

Catherine A. Dobris

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Gabrielle Bersier\* (German), Paul Carlin\* (Economics), Ulla Connor\* (English), Linda Haas\* (Sociology), Karen Kovacic (English), Missy Kubitschek\* (English), Obioma Nnaemeka\* (Women's Studies, French), Jane Schultz\* (English), Patricia Wittberg\* (Sociology), Marianne Wokeck\* (History)

### Associate Professors

Dennis Bingham\* (English), Jeanette Dickerson-Putman\* (Anthropology), Catherine A. Dobris (Communication Studies), Karen Johnson (English), Nancy Robertson (History), Susan Shepherd (English)

### Graduate Advisor

Women's Studies, Cavanaugh Hall, Room 540B, Indianapolis, IN 46202-5140, (317) 274-7611

## Courses

**WOST-W 500 Feminist Theory (3 cr.)** An examination of contemporary feminist analyses of gender relations, how they are constituted and experienced, and how social structures maintaining sexist hierarchies intersect with hierarchies of race, class, and ethnicity.

**WOST-W 601 Survey of Contemporary Research in Women's Studies: The Social and Behavioral Sciences (3 cr.)** An exploration of feminist perspectives in the social sciences. Theoretical frameworks and research styles are examined, as are feminist critiques of traditional social scientific frameworks and research methods.

**WOST-W 602 Contemporary Research in Women's Studies: The Humanities (3 cr.)** Review of literature on sex roles, psychology of women, socialization, and politicization of women. Training in methodology of

research on women; critique of prevailing and feminist theoretical frameworks for studying women.

**WOST-W 695 Graduate Rdgs/Research-Reasearch in Women's Std (3-6 cr.)** An opportunity for graduate students in various programs at IUPUI to explore specific issues within the field of women's studies, guided by faculty with particular expertise in these areas.

**WOST-W 701 Graduate Topics in Women's Studies (3-4 cr.)** Advanced investigation of selected research topics in women's studies. Topics to be announced.

## World Languages and Cultures

### School of Liberal Arts

Departmental E-mail: [wlacl@iupui.edu](mailto:wlacl@iupui.edu)

Departmental URL: <https://liberalarts.iupui.edu/wlacl/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

## Curriculum

### Graduate Certificate Programs

#### Translation Studies

Globalization of business, law and trade relations and the changing US demographics have increased demand for translation skills in many fields especially: educational, medical, legal and technical. The current demand for skilled translators far outweighs the supply available.

The Graduate Certificate in Translation Studies builds on a set of successfully implemented undergraduate translation courses by a cadre of faculty experts in the field in a context of increased demand for higher credentialed professionals and academic specialists.

**The Graduate Certificate in Translation Studies** offers coursework leading to a Graduate Certificate in Translation Studies. Additional coursework in Interpreting is also offered.

### Completion requirements

This is an, 18 credit-hour graduate certificate program, or a total of six courses, distributed among two core courses in the history and theory of translation, and the application of computer-assisted translation technologies, followed by two language-specific translation courses in Spanish, French or German, a linguistics course and a final internship or individual project. Courses are offered on a rotational basis, so students in the program need to make an advising appointment as soon as possible to plan their coursework to assure they are progressing towards completion of the degree. Twelve credit hours of coursework must be completed at IUPUI.

### Admission Requirements

Admission to the program requires:

- Fall admission only
- Undergraduate degree requirement: baccalaureate degree in second language (Spanish, French, German) from an accredited institution; or B. A. degree in English with native proficiency in a second

language; or B.A. or B.S. degree related to intended field of translation with native proficiency in a second language.

(GPA requirement: 3.0 or higher; 3.3 in major)

- Standardized Test Scores: official GRE scores are required if undergraduate GPA is below 3.0; non-native English speakers must provide evidence of English proficiency from either the Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) examinations, unless they have completed their undergraduate degree in the US. (Minimum score on the TOEFL iBT is 79 and minimum score on the IELTS is 6.5.)
- Narrative statement: Applicants will submit a narrative statement of 400-500 words in both English and Spanish, French or German outlining relevant background and their reasons for pursuing a graduate certificate in Translation Studies.
- Three letters of recommendation, one which can attest to the applicant's oral and written language proficiency in both English and the second language.
- Sample translation: Applicants will be asked to write a sample translation into their primary language to submit with their application.

Applicants who have not completed any formal educational language training at the undergraduate level may be granted provisional admission based on completion of undergraduate coursework in English or the second language as deemed necessary by the admission committee.

- Not for students on international student visa

**Student Consumer Information for the Graduate Certificate in Translation Studies.** For more information about our graduation rates, the median debt of students who completed the program, and other important information, please visit our website at, <http://apps.usss.iu.edu/disclosures/?plan=IN04.23.1304>.

*Instructions for applying to the Graduate Certificate in Translation Studies can be found on the Department of World Languages and Cultures's website.*

## Requirements

### List of Translation Courses

#### Core courses (6 credits):

- WLAC-F550 Introduction to Translation Studies (3 cr. hrs).
- WLAC F560 Computer-Assisted Translation and Localization (3 cr. hrs)

#### Language-specific courses (9 credits):

- FREN F575 Introduction to French Linguistics (3 cr.) or ENG G500 (3 cr.)
- GER G551 The Structure of German (3 cr.) or ENG G500 (3 cr.)
- SPAN S513 Intro to Hispanic Sociolinguistics (3 cr.) or Spanish Syntactic Analysis (3 cr.)
- SPAN S528/FREN F528/GER G528 Comparative Stylistics and Translation (3 cr. hrs)

- SPAN S529/FREN F529/GER G529 Specialized Translation I: Business/Legal/Governmental(3 cr. hrs)
- SPAN S530/FREN F530/ GER G530 Specialized Translation II: Scientific/Technical/Medical (3 cr. hrs)

#### Applied course and fieldwork (3cr):

- WLAC F693 Internship in Translation (3 cr. hr.)
- WLAC F694 Final Translation Project (3 cr. hr.)
- WLAC F696 Final Interpretation Project (3 cr. hrs)

#### Additional courses:

- S502 Introduction To Medical Interpreting
- S602 Advanced Medical Interpreting
- S501 Introduction To Legal Interpreting
- S601 Advanced Legal Interpreting

## Exercise Science

### School of Health & Human Sciences

**Departmental Email:** shhsinfo@iupui.edu

**Departmental URL:** shhs.iupui.edu

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

Curriculum

[Faculty](#)

### Degrees Offered

Ph.D. in Exercise Science

### Special School Requirements

(See also general University Graduate School requirements.)

IUPUI's Ph.D. in Exercise Science is designed to prepare doctoral research scholars to create and disseminate knowledge.

The program will provide training through a rigorous, mentor-based interdisciplinary curriculum with pedagogical and research experiences, and conduct applied and translational science research focusing on exercise science for the purposes of enhancing and prolonging quality of life.

### Ph.D. in Exercise Science

This is a full time, face-to-face, research-based doctoral program that includes 90 credit hours of graduate study.

During the program, students will pass qualifying exams, defend a dissertation proposal, then research, write, and defend a final dissertation.

You should plan to complete coursework, pass exams, and defend your dissertation proposal within three years (post-master's degree) or five years (post-bachelor's degree) of full-time enrollment.

### Admission Requirements

To be eligible to apply for the Ph.D. in Exercise Science at IUPUI you need to meet the following requirements:

- Applicants may be admitted into the Ph.D. program with a Master's in Kinesiology or related field, or directly after completing undergraduate study in exercise science, kinesiology or related field.
- Applicants must maintain a GPA of at least 3.25 on a 4.0 scale for the final 60 semester hours of undergraduate study, and 3.2 on a 4.0 scale for all previous graduate work to be considered.
- GRE scores are recommended.
- Sample of scientific writing from published or unpublished work.
- 3 letters of recommendation.
- Interview with graduate faculty involved in the admission process.

You must identify a graduate faculty member to perform your research with and your research must be congruent with that faculty member's.

### Grades

Students must maintain an academic average of at least 3.0 (B) on a 4.0 scale.

### Core Curriculum

Credit Hours: 90 credit hours of graduate study will be required for the doctoral degree. Students entering with a bachelor's degree will be admitted into the M.S. in Kinesiology program and obtain the nonthesis master's at the end of their second year of study.

The 90 credit hours, required of all students, beyond a bachelor's will consist of:

- 19-20 hours of required core exercise science courses:
- 12 hours in research tools courses
- 12 hours in a concentration area
- 12 hours in an outside minor
- 24 hours for dissertation work
- 9-10 hours for electives

### Movement Science Core:

Every student in the program will take five or six required courses, depending on which human physiology class they will take:

- KINE-K 530 (3 hrs) Mechanical Analysis of Human Performance
- KINE-K 535 (3 hrs) Physiological Basis of Human Performance
- KINE-K 542 (3 hrs) Neuromuscular Control of Human Movement
- ANAT-D 501 (5 hrs) Functional-Oriented Human Gross Anatomy
- BIOL-K 556 (3 hrs) Physiology & BIOL-K 557 (3 credits) Physiology II OR PHSL-F 503 (5 hrs) Human Physiology

### Research Tools Courses (12 credits):

All students will take 12 credits in courses focused on statistics, experimental design, data interpretation, instrumentation, scientific writing, or grant writing. Examples of some research tools courses within the Department of Kinesiology or other Schools are:

- KINE-T 590 (3 hrs) Introduction to Research in Health, Kinesiology, and Recreation
- KINE-T 591 (3 hrs) Introduction to Statistics in Health, Kinesiology, and Recreation or PBHL-B 551 (3 hrs) Biostatistics in Public Health I
- PBHL-B 562 (3 hrs) or Biostatistics in Public Health II
- KINE-K 701 (3 hrs) Scientific Writing in Exercise Science
- KINE-K 705 (3 hrs) Experimental Laboratory Techniques

A plan for these courses will be formulated and approved in consultation with Graduate Coordinator and faculty advisor.

### Concentration Area (12 credits):

All students will identify a concentration area that they will receive additional coursework. We propose four different areas: Biomechanics, Motor Control, and Exercise Physiology. Each concentration track offers the flexibility for the individual to choose courses from the IUPUI course catalog that can meet their independent need for expertise. The choice of courses is up to the individual in consultation with their Doctoral Advisory Committee and the Graduate Coordinator.

#### Concentration Courses:

##### Movement Biomechanics

- KINE-K 533 Clinical Biomechanics
- KINE-K 500 Biomechanics of Musculoskeletal Injuries
- KINE-K 593 Physical Ergonomics
- KINE-K 631 Quantitative Mechanical Analysis of Human Motion
- HPER-K 533 Advanced Theories of High Level Performance
- GRAD G819 Basic Bone Biology

##### Motor Control

- KINE-K 543 Cortical Control of Human Movement
- HPER-K 533 Advanced Theories of High Level Performance
- ANAT-D 852 (D505) Neuroscience and Clinical Neurology
- KINE-K 631 Quantitative Mechanical Analysis of Human Motion
- ANAT-D 701 Translational Neuroscience
- ANAT-D 527 Neuroanatomy: Contemporary and Translational

##### Exercise Physiology

- KINE-K 500 Muscle Physiology
- KINE-K 563 Cardiac Assessment in Exercise
- KINE R-K 533 Physical Activity and Disease
- KINE-K 638 Biochemical Adaptations to Exercise
- G805 Diabetes and Obesity
- ANAT-D 502 Basic Histology
- PHSL-708 Cardiac and Coronary Physiology
- KINE-K 533 Advanced Theories of High Level Performance
- KINE-K 635 Cardiovascular Physiology of Exercise

**Minor (12 hours):**

All students will take 12 credits in a minor area formulated and approved as part of their POS in consultation with their Doctoral Advisory Committee and the Graduate Coordinator. These hours must be from other departments outside of Kinesiology on the IUPUI campus. Students electing to pursue the degree minor in a separate department or school must obtain permission from that school to take the courses. The student will solicit an advisor in the minor's area of scholarship to give guidance, ensure the student's eligibility, appropriate course selections, and participate in preparing qualifying and oral examinations.

We propose the following approved external minors already existing at IUPUI:

Biostatistics, Cardiovascular Science, Clinical Research, Computer Science, Diabetes and Obesity, Health Informatics, Epidemiology, Human Computer Interaction, Public Health, Anatomy & Cell Biology, Physiology, Rehabilitation Sciences, and others individualized minors.

The required **core exercise science courses** (19-20 hours) will consist of the following existing courses from schools outside of SHHS:

- Functional-Oriented Human Gross Anatomy
- Physiology I and II or PHSL-F 503 Human Physiology

In addition, the following three existing core courses (9 hours) are required within Department of Kinesiology:

- Mechanical Analysis of Human Performance
- Physiological Basis of Human Performance
- Neuromuscular Control of Human Movement

**Research Tools courses (12 hours):**

All students will take 12 credits in courses focused on statistics, experimental design, data interpretation, instrumentation, scientific writing, or grant writing. Courses can include:

- Introduction to Research in Health, Kinesiology and Recreation
- Interpretation of Data in Health, Kinesiology and Recreation or Biostatistics in Public Health II
- Experimental Analysis and Design
- Experimental Laboratory Techniques

**Concentration Area (12 hours):**

All students will identify a concentration area that they will receive additional coursework in the following areas:

- Biomechanics
- Motor Control
- Exercise Physiology

**Electives (9+ hours):**

The remainder of the hours must be elective courses from departmental offerings, or outside the department or school. These would be in disciplines supporting the student's dissertation and career focus, but that may not fit in the concentration or minor area. As an individual may take extra credit hours in the research tools, concentration area, or minor, the electives are proposed as 0 or greater

credit hours to offer flexibility to the student to meet their credit hour requirement (if needed or not).

**Dissertation (24+ hours):**

At least 24 of the required 90 credit hours of graduate study must dissertation credits.

**Advisory Committees:**

Upon entry into the Ph.D. program in exercise science each student will form his or her Academic Advisory Committee. The role of the Academic Advisory Committee is to advise and approve the student's POS. This committee must comprise a minimum of three kinesiology graduate faculty or affiliated member and a faculty member from the student's chosen minor subject area. The committee serves in an advisory capacity until the student passes the Qualifying Examination and forms his or her Doctoral Advisory Committee.

After successful completion of the Qualifying Examination, the student will solicit faculty members to serve on his or her Doctoral Advisory Committee (DAC). The DAC consists of at least four members whose duties will be to advise the student during their final course of study through to their dissertation defense. The student's Major Professor serves as the chair of the DAC.

The selection of the Major Professor requires his or her consent and the approval of the Graduate Coordinator. The student's research interests should align with the Major Professor's specialties. The DAC will comprise the student's Major Professor, two additional exercise science or affiliated graduate faculty, and one faculty member representing the student's minor area. Additional members may be included at the student's request. Inclusion of individuals without graduate faculty standing may be included but cannot supplant the other four members with graduate faculty status.

**Examination Requirements:**

Students must pass the three major examinations during the course of a Ph.D. program are the Qualifying Examination (QE), the Proposal Examination, and the Defense Examination. The purpose of the QE is to verify that students have mastered fundamental area-related topics in the student's concentration and minor areas at the core course level, and to present an oral examination of a topic in the concentration area. The purpose of the Proposal Examination is to determine whether a student is adequately prepared to conceive and undertake a suitable research topic. The Proposal Examination typically includes an oral presentation and a written thesis proposal. The purpose of the oral Defense

Examination of the dissertation is to determine if the thesis research warrants granting the Ph.D. degree. Doctoral research must be original and merit publication in the scholarly literature.

**Qualifying Examination:**

Ph.D. candidates will be required to complete a comprehensive knowledge examination following completion of core coursework, and at least two terms before the final examination. The student's graduate committee, in consultation with the graduate student, will determine the timing of this examination and its content. The format and content for the exam is at the discretion



of the student's advisory committee and will vary from student to student. The exam will have written and oral components. The written exam will be completed first and submitted to and graded satisfactory/not satisfactory by each committee member. The results of the written exam must be satisfactory to the committee before moving to the oral portion of the exam. No later than two weeks after the completion of the written exam, the student will undertake an oral defense of their exam. Students who fail to successfully complete the written or oral component of the comprehensive exam will, at the discretion of the student's graduate committee, be given no more than one attempt to retake the examination. A Ph.D. candidate must successfully pass the preliminary exam before being eligible for further progress in the program.

### Requirements for Doctoral Candidacy

Candidates for the Ph.D. in Exercise Science shall demonstrate the following (through successfully completing the QE) as a prerequisite to qualifying for the degree:

1. Intellectual awareness and curiosity sufficient to predict continued growth and contribution to the discipline.
2. Significant advanced, in-depth understanding in exercise science
3. Knowledge of representative literature and historical precedence of exercise science.
4. Considerable depth of knowledge in some aspect of exercise science, such as measurement, evaluation, clinical application, or technological advancement.
5. Sufficient writing and speaking skills to communicate clearly and effectively to members of the scholarly community and the wider community, and especially in teaching situations.
6. Research skills appropriate to the student's specific focus within exercise science, including expertise with appropriate methodologies, analysis, and statistics tools.

### Proposal Examination:

The Proposal Examination is given to determine whether a student is adequately prepared to conceive and undertake a suitable research topic in the student's concentration and minor areas. Students may not schedule their Proposal Examination until after they have passed the Qualifying Examination and submitted their final Plan of Study. The Proposal Examination is primarily an oral examination associated with a written thesis proposal, but may include a written exam component at the discretion of the Doctoral Advisory Committee. Students must complete the Proposal Examination at least two academic sessions (counting regular semesters and summer sessions), for which they are registered, before taking the Defense Examination. The written dissertation proposal should be submitted to members of the Doctoral Advisory Committee at least two weeks before the examination.

During the Proposal Examination, the student is expected to exhibit:

- A clear understanding of the research problem;
- An awareness of pertinent background literature and current efforts in the research area of interest;

- Some initial progress toward solving the research problem; and
- A plan to execute the remainder of the dissertation research.

Only two attempts to pass this examination will be allowed.

### Defense Examination:

A written narrative of original research must be approved by the Doctoral Advisory Committee in a public defense as described in the Graduate School Bulletin. Students enroll in KINE-K799 PhD Dissertation each semester after the dissertation topic is approved until the research has been completed.

### Time Limit for Completion of the Ph.D. Degree:

Students entering the Ph.D. program with a master's degree are to complete all degree requirements within five equivalent full-time years from the beginning of their first semester registration. Those entering the program with a bachelor's degree have seven years to complete their degree requirements.

Extension to the cited time limit may be requested in writing and approved at the recommendation of the student's Doctoral Advisory Committee and the Graduate Coordinator. Only full semesters count toward the time limit. A student who is not in good standing with regard to the cited time limit will not be allowed to register for the following semester without the approval of the Graduate Coordinator.

## Kokomo

- Biology
- Chemistry
- Communication Studies
- Criminal Justice and Public Safety
- English
- History
- Liberal Studies
- Mathematics
- Political Science
- Spanish

## Liberal Studies

**School of Humanities and Social Sciences**

**Departmental E-mail:** [nprovost@iuk.edu](mailto:nprovost@iuk.edu)

**Departmental URL:** <http://www.iuk.edu/academics/majors/humanities-and-social-sciences/humanities/contact.shtml>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

### Degree Offered

### Master of Arts in Liberal Studies

### General Information

The Master of Arts in Liberal Studies (M.A.L.S.) offers three different tracks:

- **INTERDISCIPLINARY TRACK:** Provides students with the opportunity to take an individualized program of graduate courses and interdisciplinary core seminars in a variety of disciplines in the arts and sciences. Students identify and explore significant patterns and connections that exist among the diverse disciplines that define current knowledge.
- **ACADEMIC TEACHING TRACK:** Provides students with academic teaching training in the form of teaching assistantships, methods and subject content in the field of their choice (English and Communication Arts are the most popular)
- **GLOBAL STUDIES TRACK:** Provides students with a deeper understanding of international issues such as multiculturalism, conflict resolution, human rights, energy, and the environment.

Students begin with an introduction to graduate liberal studies and interdisciplinary methodology, then choose one of the three tracks. All students write a thesis. The M.A.L.S. program draws on faculty with diverse expertise to explore topics through a multidisciplinary approach.

#### **Admission Requirements (Currently this program is not accepting applications.)**

Students are admitted to the Master of Arts in Liberal Studies program by the Master of Arts in Liberal Studies Advisory Board. In order to be admitted to this program, a student is expected to have earned a baccalaureate degree (B.A. or B.S.) from an accredited college or university with an overall grade point average of at least 3.0 on a 4.0 scale. Students who do not meet the GPA requirement may be admitted provisionally upon the recommendation of the director of the M.A.L.S. program and or the Master of Arts in Liberal Studies Advisory Board. Completed applications include the following: application form, application fee, cover letter, at least two letters of recommendation, a writing sample, scores from the Graduate Record Exam (GRE) or equivalent graduate exam scores, and transcripts of all previous undergraduate and graduate study.

A student whose native language is not English must have a minimum TOEFL score of 560 (standard grading) or 220 (computer graded). The recommended TOEFL score is 600 (standard grading) or 250 (computer graded).

Exceptions to these requirements may be made at the discretion of the graduate liberal studies committee.

#### **Application Deadlines**

Students may be admitted to the M.A.L.S. Program to begin in either the fall or spring semester. All admission decisions are made by the graduate faculty members of the Master of Arts in Liberal Studies Advisory Board. The committee meets to review applications twice a year. The deadlines for submitting completed applications for review by the committee are as follows: Fall application deadline is July 15; the Spring application deadline is November 15.

Students are advised to give reference letter writers at least two to four weeks' notice so that their letters will arrive prior to the deadline. Applications that are not completed by a given deadline may not be considered

until the next deadline and this may cause a delay in admission by one semester.

#### **Track Requirements**

##### **Interdisciplinary Track:**

1. Completion of 30 hours of graduate coursework
2. A minimum G.P.A. of 3.0 is required for graduation. If a student drops below a 3.0 G.P.A. in any given semester, they could be dismissed from the program. Only courses with a minimum grade of "B-" will count towards the degree. The introductory course (D510) requires a passing grade of "B" or better.

**Coursework:** D510-Introduction to M.A.L.S. Graduate Liberal Studies in first fall semester (3 hours)

**Area of Concentration** (21 hours-minimum of 9 hours in one discipline)

Courses must come from the Humanities, Social and Behavioral Sciences, or Natural, Information and Mathematical Sciences. The completion of a thesis (6 hours): D603 Thesis Proposal (3 hours) and D604 Thesis (3 hours)

##### **Academic Teaching Track (English, Communication Arts and other disciplines )**

1. Completion of 36 hours of graduate coursework;
2. A minimum G.P.A. of 3.0 is required for graduation. If a student drops below a 3.0 G.P.A. in any given semester, they could be dismissed from the program; Only courses with a minimum grade of "B-" will count towards the degree. The introductory course (D510) requires a passing grade of "B" or better.

##### **Coursework:**

- D510 Introduction to M.A.L.S. Graduate Liberal Studies in first fall semester (3 hours)

##### **Area of Concentration** (21 hours)

- D591 Graduate Workshop on Teaching (3 hours)
- D550 (Teaching Assistantship-3 hours)

The completion of a thesis (6 hours): D603 Thesis Proposal (3 hours) and D604 Thesis (3 hours)..

##### **Global Studies Track:**

1. Completion of 30 hours of graduate coursework;
2. A minimum GPA of 3.0 is required for graduation. If a student drops below a 3.0 GPA in any given semester, they could be dismissed from the program. Only courses with a minimum grade of "B-" will count towards the degree. The introductory course (D510) requires a passing grade of "B" or better.

##### **Coursework**

- D510 Introduction to Graduate Liberal Studies in first fall semester (3 hours)

**Area of Concentration** (21 hours-minimum of 9 hours in one discipline)

- D514 Graduate Liberal Overseas Study (3 hours)

The completion of a thesis (6 hours): D603 Thesis Proposal (3 hours) and D604 Thesis (3 hours).

## Academic Regulations

Students must have their programs of study approved by the M.A.L.S. program director. An average grade of B (3.0) is required for graduation, and no course with a grade lower than B– (2.7) will be counted toward the degree. Students are required to retain good academic standing, i.e., to maintain a G.P.A. of at least 3.0. Failure to maintain good standing may result in dismissal from the program.

Other academic regulations and policies are established by the Master of Arts in Liberal Studies Advisory Board. Students are to consult the M.A.L.S. program director for further information.

### Interim Director

Netty Provost, KO 223; (765) 455-9266; [nprovost@iuk.edu](mailto:nprovost@iuk.edu)

## Faculty

### Graduate Director

Lecturer Netty Provost

### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Professors

Richard Aniskiewicz, Christian Chauret\*, Steve R. Cox\*, Robert A. Dible, Gary E. Dolph\* (Emeritus), Kasem K. Kasem\*, Ligaya McGovern\*, Mohammad Z. Meybodi\*, Kathy Parkison, David Rink, Dianne Roden\*, John M. Ross\*, Michael Tulley\*, Earl Wysong\* (Emeritus)

### Associate Professors

Angela Becker, Karl L. Besel, Matthew T. Bradley, Kelly L. Brown, Sharon K. Calhoon, Ann M. Cameron, Dmitriy Chulkov, Kevin M. Clark, Michael S. Finkler, Nancy Greenwood, Mary E. Hansen, Kathryn M. Holcomb, Scott L. Jones, Donna R. McLean, Julie R. Saam, Susan M. Sciamie, Julia Tinsley (Emerita), Linda S. Wallace, Eva Roa White, Carl Widland (Emeritus)

### Assistant Professors

Mary P. Bourke, Chris R. Darr, Minda Douglas, Christina A. Downey, Linda S. Ficht\*, Melissa M. Grabner-Hagen, Sarah E. Heath, Joe Keener, Joung Yeo Kim\*, Andrew M. McFarland, Raul A. Mosley, Patrick M. Motl, Yusuf A. Nur, Masato Ogawa, Gregory Steel

## Courses

**LBST-D 501 Humanities Seminar (3 cr.)** An interdisciplinary graduate seminar in the humanities. Topics vary from semester to semester. May be repeated twice for credit.

**LBST-D 502 Social Science Seminar (3 cr.)** An interdisciplinary graduate seminar in the social sciences. Topics vary from semester to semester. May be repeated twice for credit.

**LBST-D 503 Science Seminar (3 cr.)** interdisciplinary graduate seminar in the sciences. Topics vary from semester to semester. May be repeated twice for credit.

**LBST-D 510 Introduction to Graduate Liberal Studies (3 cr.)** A comprehensive introduction to graduate liberal studies. Explores the cultures of the humanities, social sciences, and sciences. Investigates interdisciplinary methodologies. Offers strategies for graduate-level reading, research, and writing for other publics.

**LBST-D 511 M.A.L.S. Humanities Elective (3 cr.)**  
P: D510. An M.A.L.S. graduate elective course in the humanities. Topics vary. May be repeated for credit.

**LBST-D 512 M.A.L.S. Social Science Elective (3 cr.)**  
P: D510. An M.A.L.S. graduate elective course in the social sciences. Topics vary. May be repeated for credit.

**LBST-D 513 M.A.L.S. Science Elective (1-6 cr.)**  
P: D510. An M.A.L.S. graduate elective course in the sciences. Topics vary. May be repeated for credit.

**LBST-D 514 Graduate Liberal Overseas Study (3-6 cr.)**  
P: D510. This course will enable M.A.L.S. students to participate in overseas studies. In some cases there may be a language prerequisite.

**LBST-D 525 Topics in International Studies (1-6 cr.)**  
P: D510.  
This course is a graduate seminar with varied topics in international studies. The content will vary, but it will always focus on international issues and topics in different fields of studies. At times, this course will have an interdisciplinary and /or comparative focus.

**LBST-D 551 Research Assistantship (3-6 cr.)** P: D510 and prior consent of director and instructor. This course will enable students to assist resident faculty in their research.

**LBST-D 591 Graduate Workshop on Teaching (3 cr.)**  
P: D510.  
The course is designed to present basic information about course management and pedagogy for new graduate students. The content will include information about the following topics: Philosophy of teaching and learning, course planning and design, criteria for selecting textbooks and readings, constructing a syllabus and course policies, science and art of effective lectures, using discussions, active learning, and group work, ethical issues in faculty and student conduct, assessment of student learning.

**LBST-D 594 Liberal Studies Directed Readings (1-3 cr.)** P: D510 and prior consent of instructor. Independent study involving systematic schedule of readings sponsored and supervised by a faculty member. May be repeated up to a maximum of 6 credit hours.

**LBST-D 596 Liberal Studies Independent Research (1-3 cr.)** P: D510 and prior consent of instructor. An independent research project formulated and conducted in consultation with a faculty member and culminating in a final analytical paper. May be repeated up to a maximum of 6 credit hours.

**LBST-D 600 Public Intellectual Practicum (3 cr.)**  
P: Completion of all M.A.L.S. course work. A capstone seminar for the M.A.L.S. public intellectual option. Students will study the history of public intellectuals, explore the variety of ways in which public intellectuals

carry out their work, and create a portfolio of their own public intellectual work.

**LBST-D 601 Thesis Proposal (3 cr.)** P: Completion of all M.A.L.S. course work. Independent research/creative activity in which students choose a topic for their thesis, complete the initial research to determine its feasibility, write a formal proposal with an extensive bibliography identifying sources and/or resources necessary to complete the project, and defend it before a faculty committee.

**LBST-D 602 Thesis Writing (3 cr.)** P: D601. Complete the writing of the thesis in consultation with a thesis committee, and defend it before the thesis committee.

#### **LBST-D 603 Thesis Proposal (3 cr.)**

Independent initial research/exploration of thesis topic including a formal proposal containing a statement of purpose, a background or rationale, an extensive literature review, a methodology, and a working thesis title. This course is a prerequisite for students registering for D604.

#### **LBST-D 604 Thesis (3 cr.)**

Independent thesis work conducted in consultation with Thesis Committee.

## **Liberal Studies**

### **College of Liberal Arts and Sciences**

**Departmental URL:** <http://www.iun.edu/liberal-studies/index.htm>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### **Degree Offered**

Master of Liberal Studies

### **Master of Liberal Studies (online collaborative)**

The online collaborative M.L.S. is offered by multiple IU campuses in partnership with IU Online. See the Online Collaborative Master of Liberal Studies program section for information and requirements.

### **Master of Liberal Studies**

#### **General Information**

The Master of Liberal Studies (M.L.S.) program is unique. It does not provide a rigid schedule of courses or focus on one particular specialty. It is inherently interdisciplinary. It is designed for students who love to learn new ideas and discuss them with others. It is designed for students who are curious about the world – about art, literature, science, politics, human nature and history. It is for people who want to explore new worlds and who enjoy meeting others who want to join the expedition. It is designed for students who wish to combine several academic areas into one tailored degree program. Students select a sequence of graduate level courses to create their own path of study. It allows students to explore questions of enduring concern and contemporary urgency in the arts, humanities, behavioral sciences, social sciences, life sciences, and physical sciences. In doing so, the program provides students satisfaction. Students will gain fresh perspectives and will hone the creative, critical thinking,

decision making, analytical, and communication skills that are so valued in today's workplace. Uniquely among graduate programs, the M.L.S. helps students understand the broader context of their ideas, path of study, and fields of work, learn to analyze problems from a variety of perspectives, will stimulate students to find connections between their studies and their personal and professional lives, and encourages a lifelong commitment to learning, free inquiry and the life of the mind.

### **Admission Requirements**

Students are admitted to the Master of Liberal Studies program by the Graduate Admission Committee of the College of Arts and Sciences. To be considered for admission, students must hold a bachelor's degree from an accredited institution and should have obtained an undergraduate grade point average of at least 3.0.

### **Academic Curriculum**

The M.L.S. requires the completion of 10 courses (30 credits). Students begin with an introduction to graduate liberal studies and interdisciplinary methodology, and then enroll in at least three core seminars in the humanities, the sciences, and the social sciences. Seminars combine detailed study of a particular topic with a broad interdisciplinary examination of ways of understanding. The M.L.S. program draws on faculty with diverse expertise to explore topics through a multidisciplinary approach. The program is designed to allow students flexibility to fashion a course of study that blends their interests, talents and experience. Students, under guidance of their faculty advisor, may choose graduate courses and seminars in a variety of disciplines within the College of Arts and Sciences. The program culminates with a thesis or alternative project that will grow out of the information and methodologies acquired throughout the course work.

### **Core Seminars**

- LIBS D502 Social Sciences Seminar (3 cr.)
- LIBS D503 Science Seminar (3 cr.)

Each of the core courses is a graduate seminar combining detailed study of particular topics with broad interdisciplinary perspectives. These courses give students the opportunity to explore the connections that exist among the diverse discipline and perspectives that define contemporary knowledge.

### **Electives**

- LIBS D511 M.L.S. Humanities Elective (1-4 cr.)
- LIBS D512 M.L.S. Social Science Elective (1-4 cr.)
- LIBS D513 M.L.S. Science Elective (1-4 cr.)

Electives offer students a wide variety of choices with which to create programs of study suited to their individual interest. These elective courses may be selected to build support and background for the graduate project, or to enable students to more ably participate in the public intellectual, artistic, and cultural life of their communities. In addition to the above, students may also repeat core seminars (each may be taken up to two more times under a different topic).

### **Independent Research/Creative Activity Option**



The Independent Research/Creative Activity Option offers students the opportunity to work closely with a faculty committee and to complete a final project designed around their unique interests. Students must take 12 credits of electives and then successfully complete their program with a graduate project. The graduate project is an independent scholarly enterprise in which the student demonstrates mastery of a specific topic. Examples include a thesis, a computer program, a translation of a work of literature, or an artistic composition or performance.

### Capstone Experience

- LIBS D601 M.L.S. Project Proposal Seminar (3 cr.)
- LIBS D602 Graduate Project (6 cr.)

### Public Intellectual Option

Upon completion of two additional core seminars and 12 credits of electives, the Public Intellectual Option offers students the opportunity to work within a learning community made up of other students and led by a faculty facilitator to explore the variety of genres through which public intellectuals communicate, and to create their own portfolio of public intellectual work to be submitted for completion of the M.L.S. degree.

### Capstone Experience

- LIBS D600 Public Intellectual Practicum (3 cr.)

### Academic Regulations

Students must have their programs of study approved by the M.L.S. program director.

Courses taken for graduate credit at the 300 or 400 level include additional assignments beyond those required for undergraduate credit. Enrollment in such courses requires the approval of the instructor and of the M.L.S. program director. Students may take up to 9 credit hours of electives in a single academic program.

An average grade of B (3.0) is required for graduation, and no course with a grade lower than B– (2.7) will be counted toward the degree. Students are required to retain good academic standing, i.e., to maintain a GPA of at least 2.7. Failure to maintain good standing may result in dismissal from the program. Other academic regulations and policies are established by the Graduate Liberal Studies Committee of the College of Arts and Sciences. Students should consult the M.L.S. program director for further information.

## Northwest

- Biology
- Chemistry
- Communication Studies
- Criminal Justice and Public Safety
- English
- History
- Liberal Studies
- Mathematics
- Political Science
- Spanish

## Communication Studies

### Ernestine M. Raclin School of the Arts

**Departmental URL:** [arts.iusb.edu/academic-departments/communication-studies](https://arts.iusb.edu/academic-departments/communication-studies)

**Departmental Email:** [commstma@iusb.edu](mailto:commstma@iusb.edu)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff use those requirements contained only in the University Graduate School Bulletin.)

### Degrees Offered

Graduate Certificate, Master of Arts

### Graduate Certificate (online collaborative)

The online collaborative Graduate Certificate in Communication Studies is offered by multiple IU campuses in partnership with IU Online. See the Online Collaborative Communication Studies program section for information and requirements.

### Master of Arts

The Master of Arts in Communication Studies is a 30-credit hour program offering advanced study for students to take part in research, creative work, and teaching in diverse areas of communication, information, interaction, and culture.

The program is aimed to assist working professionals to advance their career goals by focusing on their specialized field, and to prepare the individuals who desire to advance their academic career to Ph.D. programs or professional degrees. Those who seek intellectual opportunities to advance their knowledge and critical thinking skills or recent graduates of four-year colleges who are interested in continuing their education to the higher level would choose to advance to the master's program in order to build a plan of study that reflects their career interests in consultation with their academic advisor. Students are given personal attention to produce a quality thesis or applied project at the end of the program.

The program is designed to be completed in two years, if students are full-time. Adjusted timelines for study are available for part-time students. The program is flexible with evening courses designed to assist working professionals.

### Admissions

Applicants for the program must have a bachelor's degree from an accredited college or university and an undergraduate GPA of at least 3.0. A candidate who does not meet the GPA requirement may apply for special student status. Students are admitted to the Communication Studies graduate program by the departmental selection committee.

### Requirements

The 30 credit hour curriculum has four components:

- Required Core Courses (12 cr.)
- Content Courses (9 cr.)
- Elective Courses (6 cr.)
- Master's Project or Thesis (3 cr.)

### Required Core Courses (12 cr.)



- COMM-C 501 Applied Quantitative Research Methods in Communication Studies
- COMM-C 502 Applied Qualitative Research Methods in Communication Studies
- COMM-C 525 Communication Pedagogy
- SPCH-S 502 Introduction to Communication Theory

### Content Courses (9 cr.)

Select one course in each of the following areas:  
*Interpersonal Communication (3 cr.)*

- Sample courses include:
  - COMM-C 544 Advanced Relational Communication
  - SPCH-S 627 Studies in Cross-Cultural Communication

### Mass Communication (3 cr.)

- Sample courses include
  - JOUR-J 510 Media and Society Seminar (pending approval)
  - JOUR-J 522 Political Communication

### Organizational Communication (3 cr.)

- Sample courses include:
  - CMCL-C 594 Communication and Conflict Management in Organizations
  - SPCH-S 640 Studies in Organizational Communication

### Elective Courses (6 cr.)

- Select two elective courses

### Master's Project or Thesis (3 cr.)

Students will complete a Master's project of thesis by enrolling one of the following courses:

- COMM-C 503 Applied Learning Project
- COMM-C 597 Thesis

## South Bend

### English

#### College of Liberal Arts and Sciences

Departmental URL: <https://www.iusb.edu/english/academic-programs/master-of-arts-in-english/>

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

#### Curriculum

### Degrees Offered

Graduate Certificate in Composition Studies, Graduate Certificate in Language and Literature, Graduate Certificate in Literature, Master of Arts

### Graduate Certificates and Master of Arts (online collaborative)

The online collaborative graduate certificates in Composition Studies; Language and Literature; and Literature and the online collaborative MA English are offered by multiple IU campuses in partnership with IU Online. See the Online Collaborative English program section for information and requirements.

### Special Departmental Requirements

See also general University Graduate School requirements.

### Admission Requirements

Students are admitted to the English graduate program by the Graduate Studies Committee. Applicants for the program must have a bachelor's degree in English or in a closely related field from an accredited institution and an undergraduate GPA of at least 3.0. A candidate who does not meet the G.P.A. requirement may apply for special student status.

### Degree Requirements

#### Master of Arts in English

The M.A. offers a flexible program of study and provides broad expertise in English studies including literary analysis, composition, and creative writing. Students may choose up to five elective courses, which will allow them more opportunities to shape their course of study. The M.A. degree opens employment opportunities teaching English in schools or community colleges, working in the service and information industries, the news media, advertising, public relations, and in other corporations requiring writing specialists. It also offers a life-enriching continuation of intellectual study. To complete this degree, students must meet the course requirements listed below.

#### M.A. Course Requirements (36 credit hours)

- G660 Stylistics (4 cr.)
- L501 Professional Scholarship in Literature (4 cr.)
- L502 Contexts for the Study of Writing (4 cr.)
- Five elective courses, with emphasis either in creative writing, literature, or rhetoric and composition studies (20 cr.)
- L695 Independent Writing Project (4 cr.)

(Students must take at least one course in the literary period, subject area or genre that they want to address in their project.)

#### Foreign Language Requirement

Students must have completed two college semesters of a single foreign language by the time the M.A. degree is conferred. Candidates who have completed these two courses as part of other graduate or undergraduate programs need not take additional courses as part of the M.A. program. Candidates who have gained foreign language skills outside of the classroom may take a Foreign Language Placement Exam to demonstrate

their achievement of language skills equivalent to those achieved from two semesters of formal study.

### Transfer Credits

Applicants may be allowed to transfer up to two graduate courses or 8 credit hours from another graduate institution (or from previous graduate work at IUSB) if those courses demonstrably contribute to the work required for the English M.A. Unless transfer courses are clearly equivalent to the required core courses for the M.A., those courses will be counted as electives. Candidates should include in the application a request to transfer courses, a brief description of each course identifying how it contributes to the English M.A., and supporting documentation such as syllabi, assignments, papers, or other relevant material.

### Academic Regulations

Students must confer with their academic advisors on a regular basis to determine an effective course of study. An average grade of B (3.0) is required for graduation, and no course with a grade lower than B– (2.7) will be counted toward the degree. Students are required to maintain good academic standing, i.e., to maintain a G.P.A. of at least 3.0. A student whose G.P.A. drops below 3.0 must restore it to 3.0 within 9 credit hours. Failure to maintain good standing will result in dismissal from the program.

### Master of Arts in Teaching

This program currently is not offered.

### Faculty

#### Graduate Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

#### Professors

Gabrielle Robinson\* (Emerita), Margaret Scanlan\* (Emerita), Frances Sherwood (Emerita), Miriam Shillingsburg\* (Emerita), Tom VanderVen (Emeritus)

#### Associate Professors

James E. Blodgett (Emeritus), Rebecca Brittenham, Joseph R. Chaney, Karen Gindele, Charles Harrington (Emeritus), Eleanor Lyons (Emerita), Robert Meyer-Lee, Kelcey Parker, Elaine Roth, Ken Smith

#### Assistant Professors

Benjamin Balthaser, Chu He, Lee Kahan, Anne Magnan-Park, Jake Mattox, Kyoko Takanashi

#### Director of Graduate Studies

Assistant Professor Lee Kahan

### Courses

#### CMLT-C 603 Topics in Comparative Literature (4 cr.)

Explores specific problems between two literatures or between literature and another area in the humanities. May be repeated for credit.

#### ENG-D 600 History of the English Language (3-4 cr.)

Survey of the evolution of the English language from its earliest stages to the present, with reference to its external

history and to its phonology, morphology, syntax, and vocabulary.

#### ENG-G 552 Linguistics and the Teacher of English (4 cr.)

Topics in applied English linguistics, intended for English teachers at all levels.

**ENG-G 660 Stylistics (4 cr.)** Survey of traditional and linguistic approaches to the study of prose and poetic style. Attention will center on the description of the verbal characteristics of texts, what those characteristics reflect about the author, and how they affect the reader.

**ENG-L 501 Professional Scholarship in Literature (4 cr.)** Instruction in the materials, tools, and methods of research. The course is especially designed to familiarize beginning graduate students with the research expectations associated with graduate study in literature.

#### ENG-L 502 Contexts for Study of Writing (4 cr.)

Historical and cognitive effects of writing, reading, and language use, and the implications of these effects for the teaching and study of literature and writing. Special emphasis will be placed on the history and psychology of literacy.

**ENG-L 590 Internship in English (4 cr.)** A supervised internship in the uses of language in the workplace. Each intern will be assigned a problem or task and will develop the methods for solving or completing it. Each intern will complete a portfolio of workplace writing and self-evaluation.

**ENG-L 623 English Drama from the 1590s to 1800, Exclusive of Shakespeare (4 cr.)** P: Familiarity with half a dozen plays of Shakespeare.

**ENG-L 625 Shakespeare (4 cr.)** Critical analysis of selected texts.

**ENG-L 631 English Literature 1660–1790 (4 cr.)** Extensive reading in poetry and nonfictional prose.

**ENG-L 639 English Fiction to 1800 (4 cr.)**

**ENG-L 642 Studies in Romantic Literature (4 cr.)** An advanced survey of the literature and writings of the major writers of the British Romantic movement, including Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats.

**ENG-L 647 Studies in Victorian Literature (4 cr.)** Study of one writer, a group of writers, or a theme or form significant to the period. Course may be repeated once for credit with a different topic.

**ENG-L 650 Studies in American Literature to 1900 (4 cr.)**

Intensive study of a writer, a group of writers, or a theme or form significant to the period. Course may be repeated once for credit with a different topic.

**ENG-L 653 American Literature 1800-1900 (4 cr.)** Intensive historical and critical study of all genres from Washington Irving through Frank Norris.

**ENG-L 660 Studies in American Literature 1900–Present (4 cr.)** Intensive study of one writer, a group of writers, or a theme or form significant to the period.

**ENG-L 674 Studies in International English Literature (4 cr.)** Literatures from Africa, the Caribbean Islands,

Australia, New Zealand, the Pacific Islands, the Indian subcontinent, or Canada.

**ENG-L 680 Special Topics: Literary Study and Theory (4 cr.)** Readings in sociological, political, psychological, and other approaches to literature.

**ENG-L 681 Genre Studies (4 cr.)** (Variable title: e.g., The Epic).

**ENG-L 695 Individual Readings in English (1-4 cr.)**

**ENG-W 500 Teaching Composition: Issues and Approaches (4 cr.)** Consideration of fundamental issues in the teaching of writing and the major approaches to composition instruction. Specific topics include teaching invention and revision, diagnosing errors, teaching style and organization, making assignments, and evaluating student writing.

**ENG-W 511 Writing Fiction (4 cr.)** Either ENG W511 or ENG W513 may be taken twice for the M.A.

**ENG-W 513 Writing Poetry (4 cr.)** Poetry writing workshop on the study of prosody and form (including formal elements of free verse) in the context of writing by class members. Course may be taken twice for M.A. credit.

**ENG-W 609 Directed Writing Projects (4 cr.)**

**ENG-W 615 Writing Creative Nonfiction (4 cr.)** Writing workshop in such modes as personal essay, autobiography, and documentary.

## Liberal Studies

**College of Liberal Arts and Sciences**

**Departmental URL:** [www.iusb.edu/sbmls/](http://www.iusb.edu/sbmls/)

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Curriculum

#### Degrees Offered

Master of Liberal Studies

#### Master of Liberal Studies (online collaborative)

The online collaborative M.L.S. is offered by multiple IU campuses in partnership with IU Online. See the Online Collaborative Master of Liberal Studies program section for information and requirements.

#### Master of Liberal Studies

##### General Information

The Master of Liberal Studies (M.L.S.) program in the College of Liberal Arts and Sciences provides opportunities to engage your curiosity in an intellectual exploration of the world of ideas. But the rewards of the pursuit of knowledge go beyond intellectual satisfaction. You will gain a refreshed approach to an enriched personal and professional life through a program that reinvigorates curiosity and creativity. You'll gain fresh perspectives and the critical thinking, analytical, and communication skills so valued in today's workplace.

Students begin with an introduction to graduate liberal studies and interdisciplinary methodology, and then enroll in at least three core seminars in the humanities, the sciences, and the social sciences. Seminars combine detailed study of a particular topic with a broad interdisciplinary examination of ways of understanding. The M.L.S. program draws on faculty with diverse expertise to explore topics through a multidisciplinary approach.

#### Admission Requirements

Students are admitted to the Master of Liberal Studies program by the Graduate Liberal Studies faculty of the College of Liberal Arts and Sciences. To be considered for admission, students must hold a bachelor's degree from an accredited institution and must have obtained an undergraduate grade point average of at least 3.0.

A student whose native language is not English must have a minimum TOEFL score of 560 (standard grading) or 220 (computer graded). The recommended TOEFL score is 600 (standard grading) or 250 (computer graded). Exceptions to these requirements may be made at the discretion of the Graduate Liberal Studies faculty.

#### Application Deadlines

Students may be admitted to the M.L.S. program to begin in either the fall or spring semester. All admission decisions are made by the members of the Liberal Arts and Sciences Graduate Liberal Studies faculty. The committee meets to review applications three times each year. The deadlines for submitting completed applications for review by the committee are as follows:

- March 31 Early admission, fall semester
- August 1 Final admission, fall semester
- October 31 Admission, spring semester

Students wishing to enter in the fall are strongly encouraged to submit their materials by the March 31 early admission deadline to assure there will be an opening in the program. Students are also advised to give reference letter writers at least two to four weeks' notice so that their letters will arrive prior to the deadline. Applications that are not completed by a given deadline will not be considered until the next deadline and may cause a delay in admission by one semester. Completed applications include the following:

- Application form
- Personal essay
- Three letters of reference
- Transcripts of all previous undergraduate study
- Application fee

All students wishing to enter the program should contact the director before submitting an application.

#### Master of Liberal Studies Degree Academic Curriculum (34 CR.)

(All courses are 3 credit hours, unless otherwise designated.)

Three degree options are available to students: the Independent Research/Creative Activity Option, the Public Intellectual Option, and the Sustainability Leadership Option. The Sustainability Leadership Option is more

specialized than the other two options; it incorporates the curriculum of the Graduate Certificate in Strategic Sustainability Leadership in place of electives. The three options are also distinguished by different capstone experiences.

All three options require successful completion of the introductory proseminars and the MLS core seminars. Each of the core seminars combines detailed study of particular topics with broad interdisciplinary perspectives. These courses give students the opportunity to explore the connections that exist among the diverse disciplines and perspectives that define contemporary knowledge.

### **Proseminars and Core Seminars (13 cr.)**

COAS-Q 510 Topics in Information Literacy (1 cr.)  
 LBST-D 510 Introduction to Graduate Liberal Studies  
 LBST-D 501 Humanities Seminar  
 LBST-D 502 Social Sciences Seminar  
 LBST-D 503 Science Seminar

The Independent Research/Creative Activity Option and the Public Intellectual Option give students the choice of a wide variety of elective courses suitable to their individual interests. These elective courses may be selected to build support and background for the graduate project, or to enable students to more ably participate in the public intellectual, artistic, and cultural life of their communities. In addition to the courses below, students may also repeat core seminars as electives (each may be taken up to two more times under a different topic); and/or take graduate courses from other IU South Bend departments, divisions, and schools.

### **Electives (12 cr.)**

LBST-D 511 Master of Liberal Studies Humanities Elective  
 LBST-D 512 Master of Liberal Studies Social Science Elective  
 LBST-D 513 Master of Liberal Studies Science Elective  
 LBST-D 514 Study Abroad  
 LBST-D 594 Liberal Studies Directed Readings\*  
 LBST-D 596 Liberal Studies Independent Research\*

The Independent Research/Creative Activity Option and the Public Intellectual Option each require a distinct form of capstone experience.

### **Capstone Experience (9 cr.)**

To complete the degree under one of these two options, students choose one of the following capstone experiences.

- D601 M.L.S. Project Proposal Seminar (3 cr.)
- D602 Graduate Project (6 cr.)

### **Public Intellectual Option (34 cr.)**

Upon completion of two additional core seminars and 12 credits of electives, the Public Intellectual Option offers students the opportunity to work within a learning community made up of other students and led by a faculty facilitator to explore the variety of genre through which public intellectuals communicate, and to create their own portfolio of public intellectual work to be submitted for completion of the M.L.S. degree.

### **Additional Core Seminars (6 cr.)**

### **Electives (12 cr.)**

### **Capstone Experience (3 cr.)**

- D600 Public Intellectual Practicum (3 cr.)

### **Academic Regulations**

Students must have their programs of study approved by the M.L.S. program director.

An average grade of B (3.0) is required for graduation, and no course with a grade lower than B– (2.7) will be counted toward the degree. Students are required to retain good academic standing, i.e., to maintain a GPA of at least 2.7. Failure to maintain good standing may result in dismissal from the program.

Other academic regulations and policies are established by the Graduate Liberal Studies faculty of the College of Liberal Arts and Sciences. Students should consult the M.L.S. program director for further information.

\*M.L.S. students may take no more than a total of 6 credit hours of D594 and D596 combined.

### **Sustainability Leadership Option**

An MLS degree with a strong emphasis in sustainability leadership gives graduates the tools to contribute creatively to a growing international movement among businesses and communities. The student is able to add specific expertise in sustainability to the general communications skills and academic interdisciplinary skills developed in the MLS core courses. A student is able to shape the degree to fit specific professional and personal goals, but at the core of the educational experience are the values of interdisciplinary scholarship and practice, as well as the understanding of how to lead effective sustainability efforts in several contexts. The Sustainability option incorporates the curriculum of the Graduate Certificate in Strategic Sustainability Leadership into the core requirements of the IU South Bend Master of Liberal Studies degree. It includes two capstone courses, the Public Intellectual Practicum and the seminar on Sustainability Leadership and Planning.

### **Sustainability Required Courses (9 cr.)**

SUST-S 501 Sustainability Strategies and Applications  
 SUST-S 520 Sustainability and Innovation  
 SUST-S 530 Sustainable Technologies and Alternative Energy

### **Sustainability Electives (choose one) (3 cr.)**

SUST-S 630 Sustainable Food Systems  
 SUST-S 660 Sustainability and the Built Environment

### **MLS Elective Hours (3 cr.)**

Select three credit hours of electives from among graduate course offerings, including independent study credit, with approval of the academic advisor.

### **Two Capstone Seminars (6 cr.)**

SUST-S 690 Sustainability Leadership and Planning  
 LBST-D 600 Public Intellectual Practicum

## Courses

**LBST-D 501 Humanities Seminar (3 cr.)** An interdisciplinary graduate seminar in the humanities. Topics vary from semester to semester. May be repeated twice for credit.

**LBST-D 502 Social Science Seminar (3 cr.)** An interdisciplinary graduate seminar in the social sciences. Topics vary from semester to semester. May be repeated twice for credit.

**LBST-D 503 Science Seminar (3 cr.)** An interdisciplinary graduate seminar in the sciences. Topics vary from semester to semester. May be repeated twice for credit.

**LBST-D 510 Introduction to Graduate Liberal Studies (3 cr.)** A comprehensive introduction to graduate liberal studies. Explores the cultures of the humanities, social sciences, and sciences. Investigates interdisciplinary methodologies. Offers strategies for graduate-level reading, research, and writing for other publics.

**LBST-D 511 M.L.S. Humanities Elective (1-4 cr.)** P: D510. An M.L.S. graduate elective course in the humanities. Topics vary. May be repeated for credit.

**LBST-D 512 M.L.S. Social Science Elective (1-4 cr.)** P: D510. An M.L.S. graduate elective course in the social sciences. Topics vary. May be repeated for credit.

**LBST-D 513 M.L.S. Science Elective (1-4 cr.)** P: D510. An M.L.S. graduate elective course in the sciences. Topics vary. May be repeated for credit.

**LBST-D 514 Graduate Liberal Overseas Study (3-6 cr.)** P: D510. This course will enable M.L.S. students to participate in overseas studies. In some cases there may be a language prerequisite.

**LBST-D 594 Liberal Studies (1-3 cr.)** P: LBST-D501, D502, and D503, and prior consent of the instructor. Directed Readings. Independent study involving systematic schedule of readings sponsored and supervised by a faculty member. May be repeated up to a maximum of 6 credit hours.

**LBST-D 596 Liberal Studies Independent Research (1-3 cr.)** P: D501, D502, D503 and prior consent of instructor. An independent research project formulated and conducted in consultation with a faculty member and culminating in a final analytical paper. May be repeated up to a maximum of 6 credit hours.

**LBST-D 600 Public Intellectual Practicum (3 cr.)** P: Completion of all M.L.S. course work. A capstone seminar for the M.L.S. public intellectual option. Students will study the history of public intellectuals, explore the variety of ways in which public intellectuals carry out their work, and create a portfolio of their own public intellectual work.

**LBST-D 601 M.L.S. Project Proposal Seminar (3 cr.)** P: Approval of director. A capstone seminar for the independent research/creative activity option in which students choose a topic or creative activity for their project, complete the initial research to determine its feasibility, write a formal proposal with an extensive bibliography identifying sources and/or resources

necessary to complete the project, and defend it before a faculty committee.

**LBST-D 602 Graduate Project (3-6 cr.)** P: D601. Independent project work conducted in consultation with a faculty director.

**COAS-Q 510 Topics in Information Literacy (1 cr.)** Examines the research process that students must master to succeed in graduate school. Students will: gain both a practical and theoretical understanding of the organization of academic literature and the nature of information structure and organization; learn effective information retrieval methods; and apply critical thinking principles when utilizing information resources.

## History

### Graduate Social Sciences

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff use those requirements contained only in the University Graduate School Bulletin.)

### Degrees Offered

Graduate Certificate in History, Graduate Certificate in Modern World History, Master of Arts, Master of Arts for Teachers

### Graduate Certificate in History, Master of Arts, and Master of Arts for Teachers (online collaborative)

The online collaborative Graduate Certificate in History, Master of Arts, and Master of Arts for Teachers are offered by multiple IU campuses in partnership with IU Online. See the Online Collaborative English program section for information and requirements.

### Graduate Certificate in Modern World History

The Graduate Certificate in Modern World History provides coursework for teachers and other individuals looking to enhance their knowledge and understanding of history. The coursework focuses on teaching the advanced methods and skills of historians through classes on the Modern World with special courses in the United States, Europe, Latin America, and Chinese history.

### Requirements

The certificate requires 6 classes for a total of 18 credit hours:

- HIST-H 501 Historical Methodology (offered in Spring) (3 cr.)
- Four courses covering at least three different areas of the world (United States, Latin America, Asia, and Europe) (12 cr.)
- Elective (to be approved by program coordinator if outside of history department) (3 cr.)

### Electives

- HIST-A 507 American Cultural History 3
- HIST-H 509 Special Topics in European History 3
- HIST-H 511 Special Topics in U.S. History 3
- HIST-H 521 Special Topics in History 3
- HIST-H 523 The Holocaust 3
- HIST-H 524 Issues in Contemporary Historiography 3
- HIST-H 543 Practicum in Public History 3



- HIST-H 546 History of Science, Medicine, and Technology 3
- HIST-H 547 Special Topics in Public History 3
- HIST-H 575 Graduate Readings in History 3
- HIST-H 620 Colloquium in Modern Western European History 3
- HIST-H 650 Colloquium on United States History 3
- HIST-H 665 Colloquium in Latin American History 3
- HIST-H 669 Colloquium in Comparative History 3
- HIST-H 720 Seminar in Modern Western European History 3
- HIST-H 765 Seminar in Latin American History 3
- HIST-H 775 Colloquium in East Asian History 3
- HIST-H 750 Seminar in U.S. History 3
- HIST-H 775 Seminar in East Asian History 3
- HIST-H 799 Seminar in World History 3
- HIST-G 569 Modern Japan 3
- HIST-G 585 Modern China 3
- HIST-G 587 Contemporary China 3
- HIST-T 500 Topics in History 3

## Southeast

### Faculty

(An asterisk [\*] denotes membership in the University Graduate School faculty with the endorsement to direct doctoral dissertations.)

### Program Director

Professor Deborah Finkel\* (Psychology)

## Liberal Studies

### Curriculum

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, The University Graduate School's staff use those requirements contained only in *The University Graduate School Bulletin*.)

### Degrees Offered

The Graduate Interdisciplinary Studies program is an interdisciplinary graduate program that offers study beyond the bachelor's level for those persons who are interested in continuing their education in a diversified, challenging manner. The program offers two degree options: (1) Graduate Certificate in Interdisciplinary Studies, requiring 16 credit hours of coursework and (2) Master's Degree in Interdisciplinary Studies, requiring 34 credit hours including a thesis project. The program is not meant to prepare students for doctoral study.

### Admission Requirements

For regular admission, students must have completed an undergraduate degree from an accredited institution with a grade point average of B or above. G.R.E. scores and three letters of recommendation are required. Applicants are accepted anytime, but to assure enrollment, students should apply by August 10 for the fall semester and January 2 for the spring. Applications may be obtained through the Master in Interdisciplinary Studies office at Crestview Hall 018B or by calling (812) 941-2604 or (812) 941-2668 or on the [Web site](#).

### Course Requirements

Students pursuing the master's degree are required to complete 34 credit hours of courses that have been approved for graduate credit. These courses must represent all three of the arts and sciences schools and must include 9 credits of graduate seminars D501, D502, D503, and 6 credits of graduate project (D601 & D602). Students pursuing the graduate certificate complete 16 credit hours representing at least two of the three arts and sciences schools.

### Grades

Only courses in which a grade of at least a B is earned will count toward the degree.

### Courses

**LBST-D 501 Humanities Seminar (1-4 cr.)** An interdisciplinary graduate seminar in the humanities. Topics vary from semester to semester.

**LBST-D 502 Social Sciences Seminar (1-4 cr.)** An interdisciplinary graduate seminar in the social sciences. Topics vary from semester to semester.

**LBST-D 503 Natural Sciences Seminar (1-4 cr.)** An interdisciplinary graduate seminar in the sciences. Topics vary from semester to semester.

**LBST-D 510 Introduction to Graduate Liberal Studies (3-4 cr.)** A comprehensive introduction to graduate liberal studies. Explores the cultures of the humanities, social sciences, and sciences. Investigates interdisciplinary methodologies. Offers strategies for graduate-level reading, research, and writing for other publics.

**LBST-D 511 MLS Humanities Elective (1-3 cr.)** P: Prior consent of instructor; authorization required. An MLS graduate elective course in Arts and Letters. Topics vary. May be repeated for credit.

**LBST-D 512 MLS Social Sciences Elective (1-3 cr.)** P: Prior consent of instructor; authorization required. An MLS graduate elective course in Social Sciences. Topics vary. May be repeated for credit.

**LBST-D 513 MLS Science(s) Elective (1-3 cr.)** P: Prior consent of instructor; authorization required. An MLS graduate elective course in Natural Sciences. Topics vary. May be repeated for credit.

**LBST-D 594 Liberal Studies directed Readings (1-3 cr.)** P: LBST D501, D502, D503; prior consent of instructor; authorization required. Independent Study involving a systematic schedule of readings sponsored and supervised by faculty member. May be repeated up to a maximum of six credit hours.

**LBST-D 599 Internship (0-6 cr.)** An internship is an educational experience related to a student's degree program and career plan which applies what the student has learned to work situations. It involves a student, employer, and university sponsor. See Career Services for more information and to register.

**LBST-D 601 Graduate Project Proposal Seminar (3 cr.)** P: Approval of Director; authorization required. Independent study sponsored and supervised by faculty member/committee chair for research/creativity track in which students choose a topic, create a bibliography,

write a formal proposal, and defend it before a faculty committee.

**LBST-D 602 Graduate Project (1-6 cr.)** P: Approval of Director; Authorization required. Independent project work conducted in consultation with a faculty director.

**LBST-D 550 Teaching Assistant (3 cr.)** May be repeated for credit. M.L.S. student receives academic credit for assisting with the development and instruction of an undergraduate course.

**LBST-D 551 Research Assistant (3 cr.)** May be repeated for credit. M.L.S. student receives academic credit for serving as a research assistant.

**LBST-D 591 Graduate Workshop on Teaching (1-3 cr.)** A graduate seminar on issues of pedagogy at the college level. Students develop a teaching portfolio.

## Biology

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff use those requirements contained only in the University Graduate School Bulletin.)

### Degrees Offered

Graduate Certificate, Master of Arts for Teachers

### Graduate Certificate

As a student in the IU Online Graduate Certificate in Biology, you analyze and explore the nature of life and living organisms at an advanced level. You gain the ability to break down and analyze biological concepts for an undergraduate audience, the ability to develop and analyze hypotheses and experiments, a fluency with scientific literature, and a richer understanding of biology in the natural world around us.

Specific areas of focus include:

- Evolution
- Ecology and environmental biology
- Organismal biology
- Cell and molecular biology, and biochemistry
- Genetics, bioinformatics, and genomics
- Anatomy and physiology
- Developmental biology

### Participating Campuses

IU Bloomington, IU East, IUPUI, IU Kokomo, IU Northwest, IU South Bend, and IU Southeast

### Certificate Requirements

To earn the Graduate Certificate in Biology, you must complete 18 credit hours.

Requirements are broken down as follows:

- Core course (3 credit hours)
- Molecular-cellular-level electives (6 credit hours)
- Organismal-level electives (6 credit hours)
- Capstone course (3 credit hours)

### Courses

Sample courses for the Graduate Certificate in Biology include the following:

- BIOL-T 570 Evolution (3 credits)

- BIOL-T 572 Cell Biology (3 credits)
- BIOL-T 574 Immunology (3 credits)
- BIOL-T 576 Bioinformatics: Theory and Application (3 credits)
- BIOL-T 581 Neurobiology (3 credits)
- BIOL-T 587 Ornithology (3 credits)
- BIOL-T 591 History of Life (3 credits)

### Master of Arts for Teachers

The IU Online Master of Arts for Teachers in Biology combines coursework in education and biology to prepare you to be a dual-credit instructor at the high school and community college levels.

The educational component of the program teaches you how to apply the science and art of teaching to college-level instruction. Coursework covers instruction and curriculum, assessment, diversity and inclusive teaching, and research.

As a student in the biology component of the program, you study the nature of living organisms at an advanced level. You gain the ability to break down and analyze biological concepts for an undergraduate audience, the ability to develop and analyze hypotheses and experiments, a fluency with scientific literature, and a richer understanding of biology in the natural world around us.

Specific areas of focus include:

- Evolution
- Molecular and cellular biology, including biochemistry, cell biology, molecular and macromolecular biology, immunology, bioinformatics, and molecular genetics
- Organismal biology, including developmental biology, neurobiology, field zoology, marine community ecology, animal nutrition, ornithology, horticulture, and ecology

### Participating Campuses

IU Bloomington, IU East, IUPUI, IU Kokomo, IU Northwest, IU South Bend, and IU Southeast

### Admissions

To be accepted to this program, you must have a bachelor's degree and must have completed two courses from the Graduate Certificate in Biology with a minimum grade point average of 3.0.

### Requirements

To earn the MAT in Biology, you must complete 30 credit hours.

Requirements are broken down as follows:

- Core course (3 credit hours)
- Molecular-cellular electives (6 credit hours)
- Organismal electives (6 credit hours)
- Capstone course (3 credit hours)
- Education component (12 credit hours)

### Courses

Sample courses for the MAT in Biology include the following:

- BIOL-T 570 Evolution (3 credits)

- BIOL-T 574 Immunology (3 credits)
- BIOL-T 576 Bioinformatics: Theory and Application (3 credits)
- BIOL-T 582 Advanced Field Zoology (3 credits)
- BIOL-T 587 Ornithology (3 credits)
- BIOL-T 590 Critical Analysis of Scientific Literature (3 credits)
- BIOL-T 591 History of Life (3 credits)
- EDUC-H 520 Social Issues in Education (3 credits)
- EDUC-J 500 Instruction in the Context of Curriculum (3 credits)
- EDUC-Y 520 Strategies for Educational Inquiry (3 credits)

## Chemistry

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff use those requirements contained only in The University Graduate School Bulletin.)

### Degrees Offered

Graduate Certificate, Master of Arts for Teachers

### Graduate Certificate

As a student in the IU Online Graduate Certificate in Chemistry, you analyze and explore the chemical processes and principles of organic and inorganic substances. You develop an understanding of multiple subdisciplines of chemistry, and you adopt a methodological approach to problem solving. When you complete the certificate, you will be able to break down chemical concepts and processes, design experiments and assignments to teach chemical concepts, and critically analyze chemistry-related press releases and news.

Specific areas of focus include:

- Inorganic chemistry
- Organic synthesis
- Organic spectroscopy
- Physical chemistry
- Biochemistry
- Environmental chemistry
- Nuclear chemistry

### Participating Campuses

IU Bloomington, IU East, IU Kokomo, IU Northwest, IU South Bend, and IU Southeast

### Certificate Requirements

To earn the Graduate Certificate in Chemistry, you must complete 18 credit hours.

Requirements are broken down as follows:

- Core course (3 credit hours)
- Electives (15 credit hours)

### Courses

Sample courses for the Graduate Certificate in Chemistry include the following:

- CHEM-T 510 Inorganic Chemistry (3 credits)
- CHEM-T 530 Organic Spectroscopy (3 credits)
- CHEM-T 540 Physical Chemistry (3 credits)

- CHEM-T 550 Introductory Biochemistry (3 credits)
- CHEM-T 560 Environmental Chemistry (3 credits)
- CHEM-T 570 Nuclear Chemistry (3 credits)
- CHEM-T 590 Chemistry Capstone (3 credits)

### Master of Arts for Teachers

The IU Online Master of Arts for Teachers in Chemistry combines coursework in education and chemistry to prepare you to be a dual-credit instructor at the high school and community college levels.

The educational component of the program teaches you how to apply the science and art of teaching to college-level instruction. Coursework covers instruction and curriculum, assessment, diversity and inclusive teaching, and research.

As a student in the chemistry component of the program, you study the chemical processes and principles of organic and inorganic substances in everyday life. You develop a dialogue with multiple sub-disciplines of chemistry, and you adopt a methodological approach to problem solving. You will learn how to break down chemical concepts and processes, design experiments and assignments to teach chemical concepts, and critically analyze chemistry-related press releases and news.

Specific areas of focus include:

- Inorganic chemistry
- Organic synthesis
- Organic spectroscopy
- Physical chemistry
- Biochemistry
- Environmental chemistry
- Nuclear chemistry

### Participating Campuses

IU Bloomington, IU East, IU Kokomo, IU Northwest, IU South Bend, and IU Southeast

### Admissions

To be accepted to this program, you must have a bachelor's degree and have completed two courses from the Graduate Certificate in Chemistry with a minimum grade point average of 3.0.

### Requirements

To earn the Master of Arts for Teachers in Chemistry, you must complete 30 credit hours.

Requirements are broken down as follows:

- Capstone (3 credit hours)
- Electives (15 credit hours)
- Education component (12 credit hours)

### Courses

Sample courses for the MAT in Chemistry include the following:

- CHEM-T 510 Inorganic Chemistry (3 credits)
- CHEM-T 540 Physical Chemistry (3 credits)
- CHEM-T 570 Nuclear Chemistry (3 credits)
- CHEM-T 590 Chemistry Capstone (3 credits)

- EDUC-H 520 Social Issues in Education (3 credits)
- EDUC-J 500 Instruction in the Context of Curriculum (3 credits)
- EDUC-Y 520 Strategies for Educational Inquiry (3 credits)

## Communication Studies

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff use those requirements contained only in the University Graduate School Bulletin.)

### Degrees Offered

Graduate Certificate

### Graduate Certificate

The IU Online Graduate Certificate in Communication Studies provides graduate-level instruction in communication strategies, practices, and techniques. It teaches practical communication skills needed in professional, academic, and personal contexts, such as presenting information, arguing a position, promoting a cause, presenting information via social media, designing targeted messages, and managing relations and conflicts.

As a student in the program, you develop innovative strategies for teaching communication, employ effective and ethical communication practices, and apply critical perspectives to production and consumption of media messages.

### Participating Campuses

IUPUI, IU East, IU Kokomo, IU Northwest, IU South Bend, and IU Southeast

### Admissions

To be accepted to this program, you must have a bachelor's degree and a 3.0 GPA or above on a 4.0 scale.

### Certificate Requirements

To earn the Graduate Certificate in Communication Studies, you must complete 18 credit hours.

Requirements are broken down as follows:

- Communication pedagogy course (3 cr. hours)
- Communication in context courses (9 cr. hours)
- Communication in media course (3 cr. hours)
- Communication elective course (3 cr. hours)

### Courses

All core courses are listed here. You will select from among these courses to fulfill degree requirements.

- CMCL-C 502 or SPCH-S 500 Introduction to Communication Theory (3 credits)
- CMCL-C 545 Communication Pedagogy (3 credits)
- CMCL-C 594 Communication and Conflict Management in Organizations (3 credits)
- CMCL-C 606 Media Criticism (3 credits)
- CMCL-C 610 Identity and Difference (3 credits)
- COMM-C 510 Health Provider-Consumer Communication (3 credits)

- COMM-C 528 Group Communication and Organizations (3 credits)
- COMM-C 544 Advanced Relational Communication (3 credits)
- COMM-C 582 Advanced Intercultural Communication (3 credits)
- COMM-C 592 or CMCL-C 592 Advanced Health Communication (3 credits)
- COMM-C 593 Family Communication (3 credits)
- SPCH-S 500 Intro to Grad Studies and Research (3 credits)
- SPCH-S 627 Studies in Cross-Cultural Communication (3 credits)
- SPCH-S 633 Studies in Interpersonal Communication (3 credits)
- SPCH-S 640 Studies in Organizational Communication (3 credits)

## Criminal Justice and Public Safety

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff use those requirements contained only in the University Graduate School Bulletin.)

### Degrees Offered

Master of Science

### Master of Science

The IU Online MS in Criminal Justice and Public Safety focuses on the intersection of these two exciting fields. The program will appeal to individuals interested in the fields of policing, homeland security, and emergency management. Students may complete coursework in a variety of special topics, including crime mapping, geographic information systems, and cybersecurity, among others. The flexible online program also meets the needs of individuals currently working in criminal justice and security careers.

As a student in the program, you:

- Examine criminal justice and public safety system actors, agencies, and processes
- Explore the underlying operations of police, emergency management, courts, and corrections agencies
- Identify the major policy issues in criminal justice and public safety systems
- Learn to communicate effectively with individuals working in the complex and diverse criminal justice or public safety sectors
- Explore the philosophical underpinnings and development of law, and critically evaluate how criminal justice and public safety policies balance individual rights and public order
- Analyze criminal justice and public safety policies using a variety of tools, including quantitative research methods and statistical techniques, to improve criminal justice and public safety agencies
- Identify and critically analyze current criminal justice and public safety policies using available research and empirical evidence to discuss the strengths and limitations of various approaches

The program allows you to choose from one of two concentrations: public safety or criminal justice.



### *Public Safety Concentration*

As a student in this concentration, you assess public safety risks using various analysis tools and develop plans to prepare, manage, and mitigate natural and human-made crises.

### *Criminal Justice Concentration*

As a student in this concentration, you analyze the nature and extent of crime, critically evaluate major theories of crime, and assess the effectiveness of criminal justice systems, non-criminal justice programs, and other policies and practices that respond to crime.

### **Participating Campuses**

IU Bloomington, IU East, IUPUI, IU Kokomo, IU Northwest, and IU Southeast

### **Admissions**

To be accepted to this program, you must have a bachelor's degree and a 3.0 GPA or above on a 4.0 scale.

### **Requirements**

To graduate with the MS in Criminal Justice and Public Safety, you must complete 33 credit hours.

Requirements are broken down as follows:

- Core courses (15 credit hours)
- Concentration courses (18 credit hours)

### **Courses**

#### *Core Courses*

- Theory Requirement (3 credits)
  - *Criminal Justice Concentration*: SPEA-J 501 Evolution of Criminological Thought and Policy I **OR** CJUS-P 502 Proseminar: Criminal Justice II.
  - *Public Safety Concentration*: SPEA-J 528 Risk Analysis for Public Safety
- CJUS-P 501 Proseminar: Criminal Justice I **OR** SPEA-J 582 Criminal Justice Systems (3 credits)
- CJUS-P 619 Crime and Public Policy **OR** SPEA-J 666 Criminal Justice Policy and Evaluation (3 credits)
- SPEA-J 502 Research Methods in Criminal Justice and Public Safety **OR** CJUS-P 594 Introduction to Research Methods (3 credits)
- SPEA-J 586 Public Safety in the U.S. (3 credits)
- SPEA-V 506 Statistical Analysis for Effective Decision Making **OR** CJUS-P 595 Data Analysis in Criminal Justice (3 credits)

#### *Electives*

- CJUS-P 512 Corrections (3 credits)
- CJUS-P 515 Police in Society (3 credits)
- CJUS-P 517 Juvenile Justice (3 credits)
- CJUS-P 519 Probation and Parole (3 credits)
- CJUS-P 602 Courts and Criminal Justice (3 credits)
- CJUS-P 623 Violent Behavior (3 credits)
- CJUS-P 627 White-Collar Crime (3 credits)

- CJUS-P 629 Victimization (3 credits)
- CJUS-P 634 Sentencing Theory and Practice (3 credits)
- CJUS-P 671 Comparative Criminal Justice Systems (3 credits)
- CJUS-P 680 Seminar: Issues in Criminal Justice and Public Safety (3 credits)
- CJUS-P 682 Seminar on Law Enforcement and Minorities (3 credits)
- SPEA-J 520 Mapping and Analysis (3 credits)
- SPEA-J 520 Mapping and Analysis for Public Safety (3 credits)
- SPEA-J 524 Crisis Management for Public Safety (3 credits)
- SPEA-J 531 National and Homeland Security in America (3 credits)
- SPEA-J 550 Topics in Criminal Justice and Public Safety (1-3 credits)
- SPEA-J 581 Public Safety Law (3 credits)
- SPEA-J 587 Criminal Violation: Problems and Characteristics (3 credits)
- SPEA-J 588 Law and Control in Society (3 credits)
- SPEA-J 682 Planning and Management (3 credits)
- SPEA-V 560 Public Budgeting and Finance (3 credits)
- SPEA-V 561 Public Human Resources Management (3 credits)

## **English**

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff use those requirements contained only in the University Graduate School Bulletin.)

### **Degrees Offered**

Graduate Certificate in Composition Studies, Graduate Certificate in Language and Literature, Graduate Certificate in Literature, Master of Arts in English

### **Graduate Certificate in Composition Studies**

As a student in the IU Online Graduate Certificate in Composition Studies, you explore the core principles of writing and literature. You learn to teach students to craft sound arguments using close attention to logic, context, and audience. You also develop a fluency with the current debates, schools, and theories of writing instruction.

Areas of focus include:

- Contemporary theory on the pedagogy of composition and literature
- Linguistic structures and history of the English language
- Reading strategies and literary analysis, with attention to close reading, style, form, genre, and rhetorical practices
- Approaches to composition and writing instruction, including the identification and evaluation of sources, use of evidence, generation of ideas, and the development and organization of argument
- Developing archival research skills and facility with electronic resources
- Developments, trends, and frontiers in the digital humanities



## Participating Campuses

IU Bloomington, IU East, IUPUI, IU Kokomo, IU Northwest, IU South Bend, and IU Southeast

## Admissions

To be accepted to this program, you must have

1. A bachelor of arts in English (or related bachelor's degree in education with an English specialization, concentration, or outside area) or two years of secondary teaching experience in literature or composition classes
2. A 3.0 GPA or above on a 4.0 scale

## Requirements

To earn the Graduate Certificate in Composition Studies, you must complete a total of 20 credit hours.

## Courses

- ENG-G 660 Stylistics **OR** ENG-L 646 Readings in Media/Literature/Culture (4 credits)
- ENG-W 500 Teaching Composition: Issues & Approaches **OR** ENG-W 509 Writing and Literacy Studies (4 credits)
- ENG-W 501 Teaching Composition in College **OR** ENG-W 600 Topics of Rhetoric and Composition (4 credits)
- ENG-W 590 Teaching Writing: Theories and Applications **OR** ENG-W 620 Advanced Argumentative Writing (4 credits)
- ENG-W 682 Sp. Topics: Rhetoric & Composition (4 credits)

## Graduate Certificate in Language and Literature

The IU Online Graduate Certificate in Language and Literature provides training in the core principles of writing and literature. As a student in this program, you learn to teach students how to craft sound arguments using close attention to logic, context, and audience. You also develop a fluency with the current debates, schools, and theories of writing instruction.

Specific areas of focus include:

- Contemporary theory on the pedagogy of composition and literature
- Linguistic structures and history of the English language
- Reading strategies and literary analysis, with attention to close reading, style, form, genre, and rhetorical practices
- Approaches to composition and writing instruction, including the identification and evaluation of sources, use of evidence, generation of ideas, and the development and organization of argument
- Fostering discussion and developing presentation skills in a seminar setting
- Developing archival research skills and facility with electronic resources
- Developments, trends, and frontiers in the digital humanities

## Participating Campuses

IU Bloomington, IU East, IUPUI, IU Kokomo, IU Northwest, IU South Bend, and IU Southeast

## Admissions

To be accepted to this program, you must have

1. A bachelor of arts in English (or related bachelor's degree in education with an English specialization, concentration, or outside area) or two years of secondary teaching experience in literature or composition classes
2. A 3.0 GPA or above on a 4.0 scale

## Requirements

To earn the Graduate Certificate in Language and Literature, you must complete a total of 20 credit hours.

Requirements are broken down as follows:

- Language and literature core courses (16 credit hours)
- Language and literature elective course (4 credit hours)

## Courses

### Core Courses

- Writing pedagogy for college instructors (4 credits)
  - ENG-W 600 Topics in Rhetoric & Composition **OR** ENG-W 682 Special Topics: Rhetoric & Composition **OR** ENG-W 508 Creative Writing for Teachers **OR** ENG-W 554 Practicum Teaching of Creative Writing
- ENG-D 600 **OR** ENG-G 655 History of the English Language (4 credits)
- ENG-L 503 Teaching Literature in College (4 credits)
- ENG-W 509 Writing and Literacy Studies **OR** ENG-W 500 Teaching Composition: Issues & Approaches (4 credits)

### Electives

- Any advisor-approved 500- or 600-level ENG-L course (4 credits)

## Graduate Certificate in Literature

As a student in the IU Online Graduate Certificate in Literature, you explore the core principles of literature. You learn to teach students how to read and analyze texts and contexts and to write literary analysis. You also develop a fluency with current literary debates and theories of instruction.

Specific areas of focus include:

- Contemporary theory on the pedagogy of composition and literature
- Linguistic structures and history of the English language
- Reading strategies and literary analysis, with attention to close reading, style, form, genre, and rhetorical practices
- Approaches to composition and writing instruction, including the identification and evaluation of sources, use of evidence, generation of ideas, and development and organization of argument
- Fostering discussion and developing presentation skills in a seminar setting
- Developing archival research skills and facility with electronic resources

- Developments, trends, and frontiers in the digital humanities

### Participating Campuses

IU Bloomington, IU East, IUPUI, IU Kokomo, IU Northwest, IU South Bend, and IU Southeast

### Admissions

To be accepted to this program, you must have

1. A bachelor of arts in English (or related bachelor's degree in education with an English specialization, concentration, or outside area) or two years of secondary teaching experience in literature or composition classes
2. A 3.0 GPA or above on a 4.0 scale

### Requirements

To earn the Graduate Certificate in Literature, you must complete a total of 20 credit hours.

Requirements are broken down as follows:

- Literature core courses (12 credit hours)
- Two literature elective courses (8 credit hours)

### Courses

#### Core Courses

- ENG-D 600 **OR** ENG-G 655 History of the English Language (4 credits)
- ENG-L 503 Teaching Literature in College (4 credits)
- ENG-L 553 Studies in Literature (4 credits)

#### Electives

- Any two advisor-approved 500- or 600-level ENG-L courses (8 credits)

### Master of Arts in English

The IU Online Master of Arts in English provides broad training in the primary areas of English studies.

As a student in the program, you explore the core principles of writing and literature pedagogy, the linguistic structure and history of English literature, and a wide variety of reading strategies associated with genre and close reading. You gain skills and knowledge to conduct archival research, develop analytical and presentation skills through the focused study of literature in a seminar format, and acquire an appreciation of current trends in the field of digital humanities.

Specific areas of focus include:

- Linguistic structures and history of the English language
- Reading strategies and literary practices, such as close reading, analysis of style, form and genre, and rhetorical practices
- Approaches to composition and writing instruction, including the identification and evaluation of sources, use of evidence, generation of ideas, and the development and organization of argument
- Fostering discussion and developing presentation skills in a seminar setting
- Developing archival research skills and facility with electronic resources

- Developments, trends, and frontiers in the digital humanities

### Participating Campuses

IU Bloomington, IU East, IUPUI, IU Kokomo, IU Northwest, IU South Bend, and IU Southeast

### Admissions

To be accepted to this program, you must successfully complete one of the following IU Online English graduate certificates:

- Composition Studies
- Language and Literature
- Literature.

You must complete at least three courses in one of the above certificate programs with a 3.5 or higher GPA before transitioning into the MA in English.

### Requirements

To earn the MA in English, you must complete a total of 36 credit hours.

Requirements are broken down as follows:

- English graduate certificate (20 credit hours)
- MA core courses (8 credit hours)
- MA elective courses (8 credit hours)

### Courses

#### English Graduate Certificate

- You must complete one of the following IU Online English graduate certificates: literature, language and language, or composition studies. (20 credits)

#### Core Skills and Methods of Advanced Literary Study

- ENG-L 506 Intro to Methods of Criticism and Research **OR** ENG-L 646 Readings in Media/Literature/Culture **OR** ENG-W 509 Writing and Literary Studies **OR** ENG-G S00 Introduction to the English Language. (8 credits)

#### Electives

- Any advisor-approved 500- or 600-level English course (4 credits)
- ENG-W 609 Independent Writing Project (4 credits)

## French

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff use those requirements contained only in the University Graduate School Bulletin.)

### Degrees Offered

Master of Arts for Teachers

#### Master of Arts for Teachers

The IU Online Master of Arts for Teachers in French combines coursework in education and French to prepare you to be a dual-credit instructor at the high school and community college levels.

As a student in this program, you deepen your proficiency in French through advanced graduate coursework and gain a comprehensive understanding of Francophone

cultures and of French as a living language. You study and practice various language teaching methodologies, thereby improving your instructional skills and your students' learning outcomes.

### Participating Campuses

IU Bloomington, IU East, and IUPUI

### Admissions

To be accepted to this program, you must have completed an undergraduate degree with a major in French **OR** a related bachelor's degree in education with a French specialization, concentration, or outside area **OR** two years of secondary teaching experience in French and transcripts from a Francophone institution.

### Requirements

- To earn the MAT in French, you must complete 30 credit hours.
- Requirements are broken down as follows:
- Core courses (9 credit hours)
- French/Francophone studies courses (6 credit hours)
- French linguistics course (3 credit hours)
- Foreign language methodology, applied linguistics, and language acquisition course (3 credit hours)
- Electives (9 credit hours)

### Courses

#### Core Courses

- FRIT-F 605 Capstone Project in French Teaching (3 Credits)
- FRIT-F 573 **OR** EDUC-L 520 Methods of College French Teaching **OR** Advanced Study in Foreign Language Teaching (3 Credits)
- FRIT-F 580 Applied French – Linguistics (3 Credits)

## History

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff use those requirements contained only in the University Graduate School Bulletin.)

### Degrees Offered

Graduate Certificate, Master of Arts, Master of Arts for Teachers

### Graduate Certificate

The IU Online Graduate Certificate in History provides graduate-level instruction to students interested in obtaining advanced skills and knowledge in this area.

As a student in this certificate program, you gain a depth of knowledge in a variety of historical subjects, practice historical interpretation, think critically, employ research and analysis methods, and communicate concepts and ideas with precision and clarity.

Upon successful completion of the program, you will have:

- Effective oral and written historical communication skills
- The ability to perform research
- The ability to construct original historical arguments

- The ability to effectively teach dual-credit history courses

### Participating Campuses

IU Bloomington, IU East, IUPUI, IU Kokomo, IU Northwest, IU South Bend, and IU Southeast

### Admissions

To be accepted to this program, you must have a bachelor's degree and a 3.0 GPA or above on a 4.0 scale

### Requirements

To earn the Graduate Certificate in History, you must complete 18 credit hours.

Requirements are broken down as follows:

- Core course (3 credit hours)
- Electives (15 credit hours)

### Courses

Sample courses for the Graduate Certificate in History include the following:

- HIST-T 510 Historical Methodology (3 credits)
- HIST-T 520 Teaching College History (3 credits)
- HIST-T 560 US and the World – Comparative History (3 credits)
- HIST-T 590 Historical Seminar (3 credits)

### Master of Arts

By studying the past, we are better able to understand and communicate the importance of issues in our contemporary world. The IU Online Master of Arts in History explores geographic regions of the world in both modern and pre-modern time periods to identify historical actors, events of significance, and social movements.

As a student in the program, you gain graduate-level historical knowledge, critical thinking skills, and techniques for clear and persuasive writing. You learn to recognize historiographic trends and their meanings, perform research, and construct original historical arguments. Your studies will culminate in at least one semester-long research project of original scholarship.

Specific areas of focus include:

- Early America (1400–1800)
- The long 19th century in the US (1800–1917)
- Modern United States (1917–present)
- The US and the world
- European history
- Latin American history
- Asian history
- African history

### Participating Campuses

IU Bloomington, IU East, IUPUI, IU Kokomo, IU Northwest, IU South Bend, and IU Southeast

### Admissions

To be accepted to this program, you must have a bachelor's degree and a 3.0 GPA or above on a 4.0 scale

## Requirements

To earn the MA in History, you must complete a total of 30 credit hours. Requirements are broken down as follows:

- Core courses (9 credit hours)
- Major courses (12 credit hours)
- Minor courses (6 credit hours)
- Additional research seminar or thesis (3 credit hours)

## Courses

### Core

- HIST-T 510 Historical Methodology (3 Credits)
- HIST-T 570 Digital and Public History (3 Credits)
- HIST-T 590 Research Seminar in History (3 Credits)

### Master of Arts for Teachers

The IU Online Master of Arts for Teachers in History combines coursework in education and history to prepare you to be a dual-credit instructor at the high school and community college levels.

The educational component of the program teaches you how to apply the science and art of teaching to college-level instruction. Coursework covers instruction and curriculum, assessment, diversity and inclusive teaching, and research.

As a student in the history component of the program, you focus on the historiographic trends and historical context necessary to properly analyze current events. You gain a depth of knowledge in a variety of historical subjects while learning the most effective methods to teach those subjects to an undergraduate audience. You learn to perform historical research and construct original arguments while assessing the validity of the historical sources you use.

Areas of focus include:

- Historical methodology
- Early America
- The 19th century
- Modern US history
- Comparative history

### Participating Campuses

IU Bloomington, IU East, IUPUI, IU Kokomo, IU Northwest, IU South Bend, and IU Southeast

### Admissions

To be accepted to this program, you must have a bachelor's degree. To apply, you must have completed two courses from the Graduate Certificate in History with a minimum grade point average of 3.0.

### Requirements

To earn the MAT in History, you must complete 30 credit hours.

Requirements are broken down as follows:

- Core course (3 credit hours)
- Electives (15 credit hours)
- Education component (12 credit hours)

### Courses

### Core

- EDUC-H 520 Social Issues in Education (3 Credits)
- EDUC-J 500 Instruction in the Context of Curriculum (3 Credits)
- EDUC-Y 520 Strategies for Educational Inquiry (3 Credits)
- HIST-T 510 Historical Methodology (3 Credits)
- HIST-T 520 Teaching College History (3 Credits)
- HIST-T 560 US and the World – Comparative History (3 Credits)
- HIST-T 590 Historical Seminar (3 Credits)

## Liberal Studies

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff use those requirements contained only in the University Graduate School Bulletin.)

### Degrees Offered

Master of Liberal Studies

### Master of Liberal Studies

The Master of Liberal Studies (MLS) provides graduate instruction in three areas: arts and humanities, social sciences, and natural sciences. Students in the program obtain advanced skills and knowledge in these areas and an ability to approach problems with an interdisciplinary perspective.

### Participating Campuses

IU East, IU Kokomo, IU Northwest, IU South Bend, and IU Southeast

### Admissions

To be accepted to this program, you must have a bachelor's degree and 3.0 GPA or above on a 4.0 scale.

### Requirements

Requirements are broken down as follows:

- Core courses (13 credit hours)
- Electives/certificates (12-20 credit hours)
- Capstone experience (3-9 credit hours)

### Capstone Experience Options

*Traditional Thesis.* Original research or analysis encompassing literature from at least two different disciplinary perspectives. The thesis must be written in scholarly format, with the appropriate citation format and extensive references. The literature review developed for the thesis proposal should serve as the initial component of the thesis. Typical thesis length: 50 or more pages.

*Creative Project.* Students who focus their MLS program on a creative field may complete a creative project for their MLS capstone. Creative work may include writing, art, and performance. The creative work must be accompanied by an explanatory essay encompassing material from at least two different disciplinary perspectives. The essay must be written in scholarly format, with appropriate citation format and appropriate references. The literature review developed for the capstone proposal may serve as the basis of the explanatory essay. Typical length of the explanatory essay: 20 to 35 pages.



**Peer-Reviewed Publication.** Students may focus their capstone work on a peer-reviewed publication in a professional forum. Examples include articles in professional journals, investigative journalism published in a major newspaper, or a book published by a reputable press. The publication must be accompanied by an explanatory essay encompassing material from at least two different disciplinary perspectives. The essay must be written in scholarly format, with appropriate citation format and appropriate references. The literature review developed for the capstone proposal may serve as the basis of the explanatory essay. Typical length of the explanatory essay: 20 to 35 pages.

**Applied Project.** Students may focus their capstone project on their current place of employment, internship, or practicum. The applied project should be designed to benefit both the student and the employer and can be focused narrowly on a specific issue or problem relevant to the employer. A complete literature review and an effectively designed methodology will support the value of the project. Typical length: 50 or more pages.

**Public Intellectual Capstone Course.** The public intellectual option offers students the opportunity to work within a learning community made up of other students and led by a faculty facilitator to explore the variety of media through which public intellectuals communicate. Students create their own portfolio of public intellectual work to be submitted for completion of MLS degree requirements. This option is fulfilled during the course, LBST-D 600, Public Intellectual Practicum.

## Courses

### Core Courses

- LBST-D 510 Introduction to Graduate Liberal Studies (3 cr.) + Information Literacy (1 cr.) **OR** LBST-D 510 Introduction to Graduate Liberal Studies (4 cr.)
- LBST-D 501 Humanities Seminar (3 credits)
- LBST-D 502 Social Sciences Seminar (3 credits)
- LBST-D 503 Science Seminar (3 credits)

## Mathematics

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff use those requirements contained only in the University Graduate School Bulletin.)

### Degrees Offered

Graduate Certificate, Master of Arts for Teachers

### Graduate Certificate

The Graduate Certificate in Mathematics provides graduate-level instruction in mathematics to students interested in obtaining advanced skills and knowledge in this area.

These may include instructors of finite mathematics, calculus and other introductory college-level mathematics courses. The certificate curriculum provides the knowledge and expertise needed to integrate new mathematical concepts and approaches into teaching.

### Participating Campuses

IU East, IU Kokomo, IU Northwest, IU South Bend, and IU Southeast

## Admissions

To be accepted to this program, you must have:

- A bachelor's degree in mathematics, a bachelor's degree in education with a mathematics concentration or outside area, or two years secondary teaching experience in dual-credit mathematics
- A 3.0 GPA or above on a 4.0 scale

## Requirements

To earn the Graduate Certificate in Mathematics, you must complete 18 credit hours. Requirements are broken down as follows:

- Mathematics core courses (9 credit hours)
- Mathematics elective courses (9 credit hours)

You choose courses from the following areas of study: algebra, analysis, topology and geometry, differential equations and applications, and probability and statistics.

**Algebra.** You explore core applications of algebra, including group theory, ring theory, field theory, commutative and noncommutative algebra, number theory, and more.

**Analysis.** You cover topics in analysis application, including real analysis, complex analysis, Fourier analysis, and more.

**Topology and Geometry.** You study essential concepts of topology and geometry, including Euclidean and non-Euclidean geometry, point set topology, differential topology, differential geometry, and more.

**Differential Equations and Applications.** You examine differential equations and applications, including numerical methods, mathematics of finance, graph theory, mathematical physics, and more.

**Probability and Statistics.** You cover graduate-level knowledge of key concepts in probability and statistics.

## Courses

**Core Courses** ALL core courses are listed here. You will select from among these courses to fulfill degree requirements:

- MATH-T 601 Topics in Algebra (3 credits)
- MATH-T 610 Topics in Analysis (3 credits)
- MATH-T 620 Topics in Topology/Geometry (3 credits)
- MATH-T 640 Topics in Applications (3 credits)
- MATH-T 650 Topics in Probability/Statistics (3 credits)

### Master of Arts for Teachers

The IU Online Master of Arts for Teachers in Mathematics combines coursework in education and mathematics to prepare you to be a dual-credit instructor at the high school and community college levels.

The educational component of the program teaches you how to apply the science and art of teaching to college-level instruction. Coursework covers instruction and curriculum, assessment, diversity and inclusive teaching, and research.



As a student in the mathematics component of the program, you develop advanced knowledge in three of the following categories: algebra, analysis applications, topology and geometry, differential equations and applications, and probability and statistics. You learn to analyze and interpret mathematical data for real-world applications, to think and problem-solve mathematically, and to apply the best methods for teaching these lessons to an undergraduate audience.

Specific areas of focus include:

- Algebra
- Analysis
- Topology and geometry
- Differential equations and applications
- Probability and statistics

### Participating Campuses

IU East, IU Kokomo, IU Northwest, IU South Bend, and IU Southeast

### Admissions

To be accepted to this program, you must have a bachelor's degree. To apply, you must have completed two courses from the Graduate Certificate in Mathematics with a minimum grade point average of 3.0.

### Requirements

To earn the MAT in Mathematics, you must complete 30 credit hours.

Requirements are broken down as follows:

- Core course (9 credit hours)
- Electives (9 credit hours)
- Education component (12 credit hours)

### Courses

Sample courses for the MAT in Mathematics include the following:

- EDUC-H 520 Social Issues in Education (3 credits)
- EDUC-J 500 Instruction in the Context of Curriculum (3 credits)
- EDUC-Y 520 Strategies for Educational Inquiry (3 credits)
- MATH-T 601 Topics in Algebra (3 credits)
- MATH-T 610 Topics in Analysis (3 credits)
- MATH-T 620 Topics in Topology/Geometry (3 credits)
- MATH-T 640 Topics in Differential Equations and Applications (3 credits)
- MATH-T 650 Topics in Probability/Statistics (3 credits)

## Political Science

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff use those requirements contained only in the University Graduate School Bulletin.)

### Degrees Offered

Graduate Certificate, Master of Arts for Teachers, Master of Arts

## Graduate Certificate

The IU Online Graduate Certificate in Political Science provides graduate-level instruction to students interested in obtaining advanced skills and knowledge in this area.

As a student in the IU Online Graduate Certificate in Political Science, you study political philosophy, American politics, comparative politics, public opinion, and research methods. When you complete the program, you will be able to:

- Describe the subfields of political science, the central questions they address, and the methods they typically employ.
- Evaluate and critique empirical social science research through literature review and the application of tools and strategies of political analysis.
- Interpret, analyze, and trace the influence of major political thinkers and movements that have influenced the development of American democracy.
- Isolate and analyze factors that shape the political attitudes, beliefs, and preferences of individuals and groups and map their impacts on political behavior and decision making.
- Evaluate and analyze the major institutions of American national politics.
- Situate and analyze American political institutions, processes, and behaviors in a comparative perspective that accounts for regional and international differences.

### Participating Campuses

IU Bloomington, IU East, IU Kokomo, IU Northwest, IU South Bend, and IU Southeast

### Admissions

To be accepted to this program, you must have a bachelor's degree and a 3.0 GPA or above on a 4.0 scale.

### Requirements

To earn the Graduate Certificate in Political Science, you must complete 18 credit hours.

Requirements are broken down as follows:

- Core courses (18 credit hours)

### Courses

#### Core Courses

- POLS-P 570 Introduction to the Study of Politics I (3 credits)
- POLS-Y 567 Public Opinion: Approaches and Issues (3 credits)
- POLS-Y 580 Research Methods in Political Science (3 credits)
- POLS-Y 657 Comparative Politics (3 credits)
- POLS-Y 661 American Politics (3 credits)
- POLS-Y 675 Political Philosophy (3 credits)

## Master of Arts

The IU Online Master of Arts in Political Science offers instruction in the approaches and methods political scientists use to analyze and explain political institutions and behavior.

As a student in this program, you read, interpret, and evaluate literature in the political science discipline. You study the role of political science within the social sciences, the various methods used to build a body of knowledge, and the application of this knowledge to the political environment around you. You trace the influence of major theories and themes in political thought, and you conduct empirical social science research.

You may choose between a world politics track and an American politics track.

### Participating Campuses

IU Bloomington, IU East, IU Kokomo, IU Northwest, IU South Bend, and IU Southeast

### Admissions

To be accepted to this program, you must have a bachelor's degree from a regionally accredited institution and a 3.0 minimum undergraduate GPA.

### Requirements

To earn the MA in Political Science, you must complete a total of 30 credit hours. Requirements are broken down as follows:

- Core courses (18 credit hours)
- Track courses (12 credit hours)

Students are required to complete one of the following 12-credit tracks:

- World politics
- American politics

### Courses

#### Core Courses

- POLS-P 570 Introduction to the Study of Politics I (3 Credits)
- POLS-Y 580 OR POLS-Y 524 Research Methods in Political Science **OR** Research Methods (3 Credits)
- POLS-Y 575 Political Data Analysis (3 Credits)
- POLS-Y 529 National Institutions (3 Credits)
- POLS-Y 657 Comparative Politics (3 Credits)
- POLS-Y 600 Capstone (3 Credits)

### Master of Arts for Teachers

The IU Online Master of Arts for Teachers in Political Science combines coursework in education and political science to prepare you to be a dual-credit instructor at the high school and community college levels.

The educational component of the program teaches you how to apply the science and art of teaching to college-level instruction. Coursework covers instruction and curriculum, assessment, diversity and inclusive teaching, and research.

As a student in the political science component of the program, you study major political figures, philosophies, and movements throughout history in order to understand the political events of today. You complete coursework in subfields of political science (and the central questions they address) so that you can teach students to critically evaluate political institutions, analysis, and schools of thought. You also gain a crucial understanding of

American political institutions and behaviors in comparison to political climates around the world.

Specific areas of focus include:

- Empirical theory and the scope of political science
- Political science research methods
- Political theory and political thought
- Political behavior, opinion, and identities
- Government and political institutions
- American politics in a comparative perspective

### Participating Campuses

IU Bloomington, IU East, IU Kokomo, IU Northwest, IU South Bend, and IU Southeast

### Admissions

To be accepted to this program, you must have a bachelor's degree. To apply, you must have completed two courses from the Graduate Certificate in Political Science with a minimum grade point average of 3.0.

### Requirements

To earn the MAT in Political Science, you must complete 30 credit hours.

Requirements are broken down as follows:

- Core course (18 credit hours)
- Education component (12 credit hours)

### Courses

Sample courses for the MAT in Political Science include the following:

- EDUC-H 520 Social Issues in Education (3 credits)
- EDUC-J 500 Instruction in the Context of Curriculum (3 credits)
- EDUC-Y 520 Strategies for Educational Inquiry (3 credits)
- POLS-P 570 Introduction to the Study of Politics I (3 credits)
- POLS-Y 567 Public Opinion: Approaches and Issues (3 credits)
- POLS-Y 580 Research Methods in Political Science (3 credits)
- POLS-Y 657 Comparative Politics (3 credits)
- POLS-Y 661 American Politics (3 credits)
- POLS-Y 675 Political Philosophy (3 credits)

## Spanish

(Please note that when conferring University Graduate School degrees, minors, certificates, and sub-plans, the University Graduate School's staff use those requirements contained only in the University Graduate School Bulletin.)

### Degrees Offered

Graduate Certificate

### Graduate Certificate

IU Online's Graduate Certificate in Spanish offers advanced-level instruction in the Spanish language, as well as Hispanic culture, literature, and linguistics. This program may be of special interest to K–12 Spanish teachers, or anyone looking to improve their mastery of the language.

As a student in this program, you enhance your language proficiency and teaching techniques;#study current research on effective pedagogical strategies and foreign language instruction; and#enhance your intercultural competence in order to promote student engagement with the Hispanic world.

### **Participating Campuses**

IU Bloomington, IU East, IUPUI, IU Kokomo, IU Northwest, IU South Bend, and IU Southeast

### **Admissions**

To be accepted to this program, you must have a bachelor's degree from a regionally accredited institution and a 3.0 minimum undergraduate GPA. Spanish instructors affiliated with IU's Advanced College Project will be admitted to the program on the basis of ACP's admission process

### **Requirements**

To earn a Graduate Certificate in Spanish, you must complete 18 credit hours.

Requirements are broken down as follows:

- Core courses (18 credit hours)

### **Courses**

#### *Core Courses*

- SPAN-T 510 Second Language Acquisition for Spanish Instruction (3 Credits)
- SPAN-T 520 Spanish Writing and Grammar (3 Credits)
- SPAN-T 530 Spanish through Cultural Expressions (3 Credits)
- SPAN-T 540 Spanish Phonetics (3 Credits)
- SPAN-T 550 Topics in Hispanic Studies (3 Credits)
- SPAN-T 560 Hispanic Sociolinguistics (3 Credits)

## **Collaborative Programs**

The following sections contain information and requirements for online collaborative degree and certificate programs offered by multiple IU campuses in partnership with Indiana University Online. Each entry lists participating campuses and is cross-linked with the home departmental bulletin sections.

- Biology
- Chemistry
- Communication Studies
- Criminal Justice and Public Safety
- English
- French
- History
- Liberal Studies
- Mathematics
- Political Science
- Spanish