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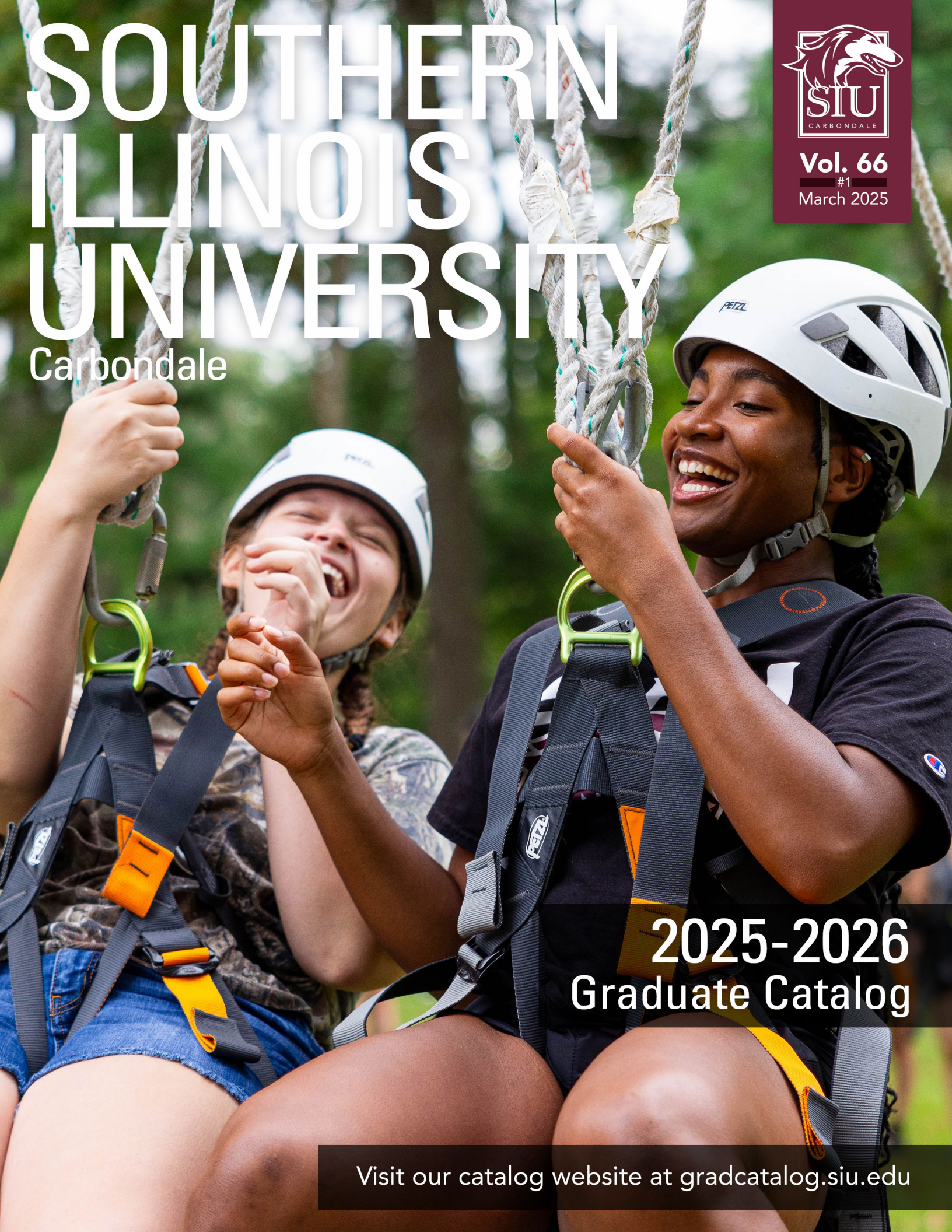

2025-2026 Graduate Catalog

Visit our catalog website at gradcatalog.siu.edu

Southern Illinois University Carbondale
2025 - 2026 Graduate Academic Catalog

Volume 66, March 2025

This catalog supersedes Volume 65, of the Southern Illinois University Carbondale Bulletin.
Graduate School Phone: 618-536-7791
Web: gradschool.siu.edu

This publication provides information about Southern Illinois University Carbondale. Primary attention is given to its academic programs, rules and regulations, and procedures. Students will be subject to the published requirements in effect when they are admitted to the Graduate School. Students beginning graduate work during the period of time from the start of summer session 2024 through spring semester 2025 are subject to the academic requirements of the Graduate School as specified in this publication. These requirements may be superseded by future publications of the Graduate Catalog. If the requirements are subsequently changed, students may elect either to meet the requirements in force in their particular degree programs immediately prior to the change, or to meet the new requirements. If they elect the former option they shall be guaranteed a minimum period of time from the date that the program requirements were changed within which minimum period they will be permitted to complete the old degree requirements.

This minimum period shall be determined by the school, department, or other degree-program unit, subject to the following two constraints. First, the minimum period prescribed by the program may not exceed the standard Graduate School limitation that credit applied toward fulfillment of requirements for the master's degree must have been earned within a six-year period preceding the completion of the degree, and that doctoral students must complete degree requirements within five years after admission to candidacy. Second, the minimum period shall encompass no less than two years for master's degree students and three years for doctoral students, with the exception that students in the last stage of their degree work when requirements change (a master's student who has completed all requirements except the thesis or research report and the final examination or a doctoral student who has been admitted to Ph.D. candidacy) shall not be subject to the new requirements but may complete their degrees within the standard Graduate School limitations stated above. Students who elect to follow old requirements, but do not complete their work within the minimum period prescribed by the program, shall, unless they were in the last stage of their degree work when requirements changed, be subject to requirements in force at the time they complete their degrees, and shall be subject to the standard Graduate School limitations described above. The University reserves the right to change information contained herein on matters other than curricular requirements without notice when circumstances warrant such action.

Southern Illinois University

Southern Illinois University is in its second hundred years of teaching, research, and service. At the outset of the 1970s, Southern Illinois University became a single state system with two

universities: Southern Illinois University Carbondale and Southern Illinois University Edwardsville. Southern Illinois University Carbondale also has a medical school campus in Springfield.

Southern Illinois University Carbondale (SIUC) first operated as a two-year normal school, but in 1904 became a four-year, degree-granting institution. In 1943, SIU was transformed from a teacher-training institution into a university, thus giving official recognition to the area's demand for diversified training and service. Graduate work was instituted in 1943, with the first doctoral degrees granted in 1959. There has been diversification and expansion of graduate programs across the University through the College of Agricultural, Life, and Physical Sciences, the College of Arts and Media, the College of Business and Analytics, the College of Engineering, Computing, Technology, and Mathematics, the College of Health and Human Sciences, the College of Liberal Arts, the Graduate School, the School of Education, the School of Law, and the School of Medicine. Combined, these colleges presently offer over 110 graduate degree programs.

In keeping with the state's master plan, and with a commitment to enhance its Carnegie Doctoral/Research-Extensive University status, the University's objective is to provide a comprehensive educational program meeting as many individual student needs as possible. While providing excellent instruction in a broad range of traditional programs, it also helps individual students design special programs when their interests are directed toward more individualized curricula. The University comprises a faculty and the facilities to offer general and professional training ranging from two-year associate degrees to doctoral programs, as well as certificate and non-degree programs meeting the needs of persons not interested in degree education.

Mission

SIU Carbondale embraces a unique tradition of access and opportunity, inclusive excellence, innovation in research and creativity, and outstanding teaching focused on nurturing student success. As a nationally ranked public research university and regional economic catalyst, we create and exchange knowledge to shape future leaders, improve our communities, and transform lives.

Enrollment

In fall semester 2023, SIU had of a total enrollment of 11,359, including 2,564 registered graduate students (1,775 master's, 789 doctoral).

Location

Carbondale is approximately 100 miles southeast of St. Louis, Missouri. Immediately south of Carbondale begins some of the most rugged and picturesque terrain in Illinois. Sixty miles to the south is the historic confluence of the Ohio and Mississippi rivers, the two forming the border of the southern tip of Little Egypt, the fourteen southernmost counties in Illinois. Within ten miles of the campus are located two state parks and four recreational lakes. Much of the area is a part of the 263,000 acre Shawnee National Forest.

Campus

The Carbondale campus, comprising more than 3,290 acres, has developed a 981 acre portion with woods and a lake as a site for its academic buildings and residence halls. The buildings are located in wooded tracts along two circular shaped campus drives, named for Lincoln and Douglas.

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SIU CARBONDALE Southern Illinois University

Table of Contents

The Graduate School

The primary concerns of the Graduate School are graduate instruction and research. The Graduate School, therefore, plays an essential role in the development of instructional and research programs, in the acquisition of funds, and in the procurement of facilities necessary to encourage and support research by members of its scholarly community. Through faculty, staff, and students, the Graduate School makes its contribution to the public welfare of the region, state, nation, and international community.

The Graduate School offers master's degrees in over seventy programs and doctoral degrees in over thirty programs. Graduate students pursue advanced study and research under the leadership of a graduate faculty of over 500 members. In addition, the Schools of Law and Medicine provide graduate students with additional opportunities in instruction and research. The Graduate School administers programs in the College of Agricultural, Life, and Physical Sciences, the College of Arts and Media, the College of Business and Analytics, the College of Engineering, Computing, Technology, and Mathematics, the College of Health and Human Sciences, the College of Liberal Arts, the School of Education, the School of Law, and the School of Medicine.

Within these colleges and schools are programs whose distinguished faculty offer inspired teaching, conduct innovative research, and facilitate student services from admission to placement. The University has an excellent library and has a very good computing facility. For further information, see Academic Resources in the Academic Policies, Requirements, and Procedures tab on the Graduate Catalog homepage. In addition to the excellent research conducted in the colleges and schools, SIU Carbondale operates a number of research and service centers, most of which have been established with the aid of outside funding.

Application for Graduate Study

The online application for admission to the Graduate School can be found on the Graduate School home page. This application is required for admission to all programs and allows the student to upload most of their application materials.

Items routinely uploaded are: unofficial copies of test scores such as the GRE, GMAT, MAT and TOEFL / IELTS, unofficial copies of transcripts, statements of purpose, specific materials required by your program; financial statements/ bank statements for international applicants, as well as copies of passport pages for applicants and dependents. Contact information for persons being asked to provide letters of recommendation is required. References will be contacted by the Graduate School and asked to submit reference letters through the application online portal.

Application Fee

The Graduate School requires a non-refundable application fee of $65 which must be submitted with the Application for Admission to Graduate Study. If you are applying to more than one program, a fee must be paid to each program. McNair and Fulbright Scholars should submit proof of participation in that program directly to the Graduate School in order to be considered for an application fee waiver. The application fee is subject to change without notice.

Transcripts

Students applying for admission to a degree program are required to submit transcripts for all universities and colleges they have attended (undergraduate and graduate). It is acceptable to submit *unofficial* transcripts during the application process. However, after admission, and prior to the second semester of registration, students are required to submit *official* transcripts.

Students applying for admission as nondeclared are required to send one final *official* degree transcript that shows a bachelor's, master's, or doctoral degree earned.

Official transcripts may be sent electronically from an institution to Graduate School Admissions, 1263 Lincoln Drive, Mail Code 4716, SIU Carbondale, Carbondale, IL 62901 or as a password protected PDF to gradschl@siu.edu.

Under certain circumstances, the Graduate School will notify students to submit *official* transcripts in person; these must be submitted in the original sealed envelope.

Transcripts submitted will not be returned or forwarded to other institutions.

Any student wishing to be considered for Graduate School fellowships must submit transcripts for all universities and colleges they have attended (undergraduate and graduate) to the School where their program is housed.

In accordance with the Family Education Rights and Privacy Act of 1974, no non-Southern Illinois University person, firm, or agency may have access to an applicant's or a student's credentials without written consent of the individual concerned. Graduate students shall be permitted to examine their own records upon request. Such requests should be made by the student to the Dean of the Graduate School.

Test Scores

The Graduate School does not require any graduate tests for admission. Individual programs may require, at their discretion, the GMAT, GRE, MAT, or other appropriate standardized tests for admission. Students should check the website or catalog page of the program to which you are applying or contact the program directly for more information.

Deadlines

While the Graduate School does not have an application deadline, many programs do. The deadlines may be as early as December 1st for the following fall semester. Please check the program to find out what application deadlines they may have. These deadline dates are also listed under "Degree Program Information" on the Graduate School home page, but should be verified with the program. Regardless of any deadlines, applicants should submit materials to the department as far in advance as possible, to have the best chance to be considered for admission and funding.

Requirements

The admission requirements of the Graduate School and the academic program must both be met before the student is admitted to an academic program, and both the Graduate School and the academic program may specify admission conditions. After the admission decision is made, the student will be informed by the Graduate School via email to retrieve the decision letter in the application online portal.

Terms of Admission

Please note that some programs may not admit students for all semesters. Some allow admissions for fall semester only, some for summer only, and some for fall and spring terms only. For more information, students should check with the program to which they are applying or also check the Graduate School home page for "Degree Program Information".

Updating Admission for Future Terms

All admissions are for the specific term indicated. Should a student wish to change their admission to a future term, they must contact the Director of Graduate Studies in the program to which they are applying. The petition to change can only be granted within one calendar year of the initial admission term and only with the agreement of the department and the Graduate School. Official transcripts will be required for any course work completed since the original application. After one year, the student must submit a new application and new application materials. International students may be required to submit a new TOEFL score and/or update financial documents in order to defer admission to a later term.

Admission of Faculty Members

No one who holds a faculty appointment at any of the academic ranks—lecturer, instructor, assistant professor, associate professor, and professor—shall be admitted to a graduate degree program at any level, or be eligible to register for courses to be taken for graduate credit, in the graduate degree program in which the faculty member holds the appointment. If a faculty member has been admitted to a graduate degree program in some unit other than the one in which such appointment exists, no member of the

faculty of the unit in which the appointment is held may be a member of that colleague's thesis committee, graduate program committee, dissertation committee, or any other examining committee. (See also faculty appointments in the section titled Financial Assistance.)

Admission of International Students

(Policy approved March 2021.)

Southern Illinois University Carbondale is authorized under federal law to enroll nonimmigrant international students. A student from abroad is subject to all requirements for admission established by the Graduate School. For other information concerning international students, applicants should contact the Graduate School Admissions Office, 1263 Lincoln Drive, Room 310.

To allow ample time for visa and other departure procedures, the applicant should have an application and all supporting documents on file with the University no less than six months prior to the proposed entry date. Some program deadlines may require an even earlier application.

Prior to admission to a degree program, the applicant will be required to certify that personally adequate financial resources will be available to undertake and continue in a program of study.

English Proficiency Requirements for Admission

All applicants whose native or first language is not English must take one of the following English proficiency tests no more than 24 months prior to the term for which the applicant is seeking admission (higher scores may be required for admission into specific degree programs):

1. Test of English as a Foreign Language (TOEFL) with a minimum score of 550 (paper - PBT) or 80 (internet - iBT).
2. The International English Language Testing System (IELTS) with a minimum overall band score of 6.5.
3. The iTEP Academic Plus Exam with a minimum score of 3.8.
4. The Cambridge English Exam with a minimum score of C1.
5. Duolingo English Test with a minimum score of 115.
6. The Pearson PTE Academic (PTEA) English Test with a minimum score of 64.

Official English proficiency test scores will be sent only to the Graduate School Admissions Office. A photocopy of the student's examinee score report should be uploaded with other materials in the online application.

Exemptions to English Proficiency Requirements

Graduate applicants can be exempt from providing an English proficiency test score if one of the following criteria is satisfied. All of the exemptions provided below will require an exemption request to be submitted by the graduate program director or their representative to the Dean of the Graduate School.

1. An applicant who has completed at least 48 credit hours of graded undergraduate coursework (earning a minimum GPA of 2.7 on a 4.0 scale) or 12 credit hours of graduate coursework (earning a minimum GPA of 3.0 on a 4.0 scale) at an accredited institution in the United States, within 5 years of the proposed semester of initial enrollment at SIUC. Proficiency credit, pass/fail or satisfactory/ unsatisfactory grades are not counted as legitimate credit hours. The determination of the applicant's grade point average shall be the responsibility of the Graduate School.
2. An applicant who has completed the equivalent of a US bachelor's degree (earning a minimum GPA of 2.7 on a 4.0 scale), a master's degree or higher (earning a minimum GPA of 3.0 on a 4.0 scale) from an international institution in a country on the SIUC Exempt Country and Territory List, within 5 years of the proposed semester of initial enrollment at SIUC.
3. An applicant who has completed the equivalent of a US bachelor's degree (earning a minimum GPA of 2.7 on a 4.0 scale), a master's degree or higher (earning a minimum GPA of 3.0 on a 4.0 scale) from an international institution that is officially recognized by a country not listed on the SIUC Exempt Country and Territory List, and the sole medium of instruction for the program was in English, within 5 years of the proposed semester of initial enrollment at SIUC. The graduate degree program should submit an exemption request to the Graduate School, along with an official letter from the institution on letterhead indicating language of instruction or provide information on

the institution website to verify language of instruction. If fully admitted, the graduate program and Graduate School may require the student to successfully complete LING 290 in the first year of study at SIUC.

4. An applicant who has acquired at least two years of relevant professional work experience in a country on the SIUC Exempt Country and Territory List, within 5 years of the proposed semester of initial enrollment at SIUC. The graduate program director or their representative should submit an exemption request (along with letters of recommendation from the applicant's employers, evidence of professional work to be verified and approved by both the Graduate Dean and Department Chair/ School Director of the respective program that the student applies for) to the Graduate Dean.
5. An applicant who has earned a Certificate of Completion from an accredited English language program, such as The Commission on English Language Program Accreditation (CEA) or equivalent, within 5 years of the proposed semester of initial enrollment at SIUC.

SIU Exempt Country and Territory List

The following is a list of the countries and territories that qualify for an exemption to English proficiency requirements:

- United States of America and Territories of the United States
- United Kingdom and British Overseas Territories
- Antigua and Barbuda
- Australia
- Bahamas
- Barbados
- Belize
- Botswana
- Cameroon-Anglophone
- Canada
- Christmas Island
- Cook Islands
- Dominica
- Fiji
- Gambia, The
- Ghana
- Grenada
- Guyana
- India
- Ireland
- Isle of Man
- Jamaica
- Kenya
- Kitts and Nevis
- Lesotho
- Liberia
- Lucia
- Malawi
- Malta
- Mauritius
- Micronesia, Federated States
- New Zealand
- Nigeria
- Norfolk Island
- Papua New Guinea
- Philippines
- Republic of Ireland
- Saint Vincent and the Grenadines
- Samoa
- Sierra Leone
- Singapore

- South Africa
- South Sudan
- Swaziland
- Tanzania
- Tokelau
- Trinidad and Tobago
- Tuvalu
- Uganda
- Zambia
- Zimbabwe

Conditional Admission of International Students

Admission of international students who have met all admission criteria except the English proficiency requirements may be considered for conditional admission, with the support of their prospective academic program.

The student must submit all required application materials for consideration including a recent English proficiency test, however low. Graduate admissions will coordinate with the Center for English as a Second Language (CESL) office to arrange for the student's enrollment in CESL classes, and will issue a training language I-20 along with a conditional admission letter. The student will be admitted into the graduate degree program following successful completion of all required English language courses, and all other required documents.

Enrollment in Distance Education and Online Courses for International Students

Per Student and Exchange Visitor Program (SEVP) regulation 8 C.F.R. § 214.2(f)(6)(i)(G), an online or distance education course is a course that is offered principally through the use of television, audio, or computer transmission including open broadcast, closed circuit, cable, microwave, or satellite, audio conferencing, or computer conferencing.

- Only one class or three credits during each term or semester may count toward a full course of study for an F-1 student if the class is taken online or through distance learning
- No online or distance learning classes may count toward an English language training student's full course of study requirement.

For SEVP purposes, a course is considered online if 50% or more of it is conducted online.

Prohibited Educational and Research Activities While Located in Cuba, North Korea, Syria, Ukraine or Iran

In order to follow U.S. federal regulations, students are prohibited from participating in educational and research activities, including coursework, while physically located in Cuba, North Korea, Syria, Ukraine or Iran without first obtaining the proper license. Students from these countries, but physically located in the United States or its territories do not need an OFAC license to attend or participate in online courses while in the United States or its territories. Individuals planning on participating in coursework, research or other educational activities while located in Cuba, North Korea, Syria, Ukraine or Iran must contact Export Controls at exportcontrols@siu.edu prior to participating in any such activities.

Qualification for Assistantship with Teaching Duties for International Students

Every non-native English speaker assigned a graduate assistantship with teaching duties must pass the International Teaching Assistant (ITA) Interview before interacting with undergraduate students as part of their TA duties. If the international student was required to submit an English proficiency score for admission to the graduate program, then that student must pass an ITA Interview in order to be hired as a teaching assistant.

The purpose of the ITA Interview is to assess the student's proficiency in oral communication in English. Assessment is completed by a committee comprised of two or three members: one representative from

the student's graduate program and one or two representatives from the Graduate School, the Center for Teaching Excellence, or another designated reviewer.

ITA Interviews may be conducted in-person or virtually. Virtual interviews may be conducted synchronously or asynchronously.

The interview begins by asking the student to provide general information such as their home country, their reason for choosing Southern Illinois University Carbondale, their chosen field of study and major emphasis, and/or plans for graduation and the future. The student is then asked to explain ideas from their TA field of study. They could explain some relevant research or describe a concept and elaborate on how they might explain that concept to an undergraduate learner.

Upon completion of the interview, the interviewers will independently rate the student on:

1. Comprehension (how well the student understood what was asked);
2. Fluency (how smoothly and continuously the student spoke);
3. Pronunciation/accent (how comprehensible and phonetically correct the student's speaking was);
4. Vocabulary and Syntax (how grammatically correct and robust the student's vocabulary was).

The outcome of the interview will be a consensus of the interviewers' assessment and ratings.

There are three possible outcomes for the interview:

1. **Full Pass**, which allows the student to serve as a teaching assistant without restriction.
2. **Partial Pass: Monitor**, which allows the student to serve as a teaching assistant with limited duties. Duties are specifically tailored to the student's performance level, for example: grading only, help sessions, laboratories under close supervision, one-on-one tutoring sessions, etc.
3. **Failure**, which prevents the student from being hired as a teaching assistant for that semester. Remediation will be offered for students who need it.

The Center for Teaching Excellence will notify the student, the student's program, and the Graduate School of the interview outcome.

Students who have the outcome of Partial Pass: Monitor or Failure, may complete another ITA Interview the following semester to attempt to earn the outcome of Full Pass.

Graduate Degrees Offered

Master's Degrees

Master of Accountancy, M.Acc.
Master of Architecture, M.ARCH.
Master of Arts, M.A.
Master of Arts in Teaching, M.A.T.
Master of Business Administration, M.B.A.
Master of Engineering, M.E.
Master of Fine Arts, M.F.A.
Master of Health Administration, M.H.A.
Master of Health Informatics, M.H.I.
Master of Music, M.M.
Master of Public Administration, M.P.A.
Master of Public Health, M.P.H.
Master of Science, M.S.
Master of Science in Education, M.S.Ed.
Master of Science in Physican Assistant, M.S.P.A.
Master of Social Work, M.S.W.
Professional Science Masters, P.S.M.

Doctoral Degrees

Doctor of Education, Ed.D.
Doctor of Medical Science, D.M.Sc.
Doctor of Philosophy, Ph.D.
Occupational Therapy Doctorate, O.T.D.

Graduate Degree Requirements

The following section describes Graduate School requirements and admission policies for the master's and the doctoral degrees. For Graduate School procedures and regulations applicable to all graduate students, regardless of degree program, the student should consult the tab titled "General Regulations and Procedures". For information about specific degree programs, the student should consult the degree program description.

Master's Degree Program

Admission

In order to be admitted to a degree program, an applicant must be approved by the department or degree program concerned and meet Graduate School admission requirements:

1. The applicant must hold a bachelor's degree from an accredited institution or have completed all undergraduate degree requirements prior to the beginning of classes for the term for which admission is sought.
2. The applicant must have earned a grade point average (GPA) of 2.70 or better (A = 4.00) on the entire last undergraduate GPA earned at the time of application. An applicant who is a U.S. citizen or permanent resident and whose GPA is below 2.70 may be admitted as a nondeclared student and may later apply to a degree program when 9 or more graduate semester hours are completed with a "B" average or above. Any applicant who has completed 9 or more semester hours of graded graduate work at an accredited U.S. educational institution, and who has a GPA of 3.00 or better on all graduate work, will be exempted from the 2.7 undergraduate grade point average requirement. Any student with fewer than 9 hours of graduate work may be admitted to the Graduate School on the basis of undergraduate GPA only.
3. Applicants to master's degree level study may be considered for admission with a transcript that is missing the last semester of bachelor's work.
4. Some non-U.S. citizens and permanent residents may be required to meet the Graduate School's English language requirement.
5. The Graduate School does not impose a deadline for application submission; however many academic units do have deadlines. Refer to the academic program section of this catalog for more information on programmatic deadlines. Graduate applications are required to have a decision made by the 10th day of the semester for which application was made. Applicants may request their academic unit and the Graduate School to delay their admission semester one time. If no request from the applicant is made prior to the 10th day of the semester, the application will be administratively withdrawn.
6. Students are not allowed admission into and cannot take courses in two different academic levels at the same time, unless admitted into approved degree programs.

General Requirements

Graduate credit earned in graduate courses for which the student has received grades of A through C-, or S, and only such credit, is acceptable for master's degree programs. At least 21 graduate credit hours with grades of A through C- must be earned in courses graded A through F. For accelerated master's programs, these 21 hours can include the 9 hours of undergraduate course work that are being counted toward the Master's degree. An overall and programmatic grade point average of at least 3.00 in all graduate work is required before the degree can be awarded.

A minimum of 30 graduate credit hours of program designated course work is required for the master's degree. Since certain degree programs require more than 30 hours, the student should consult the description of the appropriate program for specific requirements.

Additional policy:

1. Up to 9 credit hours applied toward fulfillment of the master's degree requirements may be earned at other universities and transferred to SIU Carbondale.
2. At least 9 credit hours must be earned after admission to the degree program.

3. At least 50% of credit hours must be earned in courses numbered 500 or above, and completed at SIU Carbondale.
4. Students completing a thesis or capstone project are required to pass a comprehensive examination covering all of the graduate work. This examination may be written or oral, or both, as determined by the student's advisory committee.
5. All students admitted in a graduate program must continuously enroll except for summer. The enrollment can be in classes or in Continuing Enrollment 601.

Time Limits

A student has six calendar years to complete the degree. This time is calculated from initial enrollment to completion of their degree(s) requirements including any document that must be approved by the Graduate School. This time limit includes courses taken either at SIU Carbondale or elsewhere. All students must remain registered until completion of their degrees. Please refer to the section titled continuing enrollment for additional information.

Thesis

Each candidate for a master's degree shall write a thesis except where a graduate program has been approved to provide some other arrangement, such as a research paper. The thesis shall be supervised by a committee of at least three members of the graduate faculty and may be counted for not more than six nor less than three semester hours of credit. Only members of the committee may vote or make recommendations concerning acceptance of the thesis and final examination. A student will be recommended for the degree only if the members of the committee, with at most one exception not to include the committee chair, judge both the thesis and the performance at the final oral examination to be satisfactory. In cases where a committee of more than three has been approved, the requirement of not more than one negative vote will still apply.

All students admitted in a graduate program must continuously enroll except for summer. The enrollment can be in classes or in Continuing Enrollment 601.

An electronic pdf version of the approved thesis must be presented to the Graduate School by the stated deadline date. There is a library fee, and if copyright is desired, an additional fee is required.

For non-thesis programs, a research paper should show evidence of the student's knowledge of research techniques and should be based on a special project or specific courses as may be recommended by the advisory committee. An electronic copy of the research paper must be filed in the Graduate School by submission at Open SIU Carbondale by the stated deadline date. Departments with a non-paper option for a master's degree may have other requirements.

Accelerated Master's Degree

Accelerated master's programs exist as agreements between undergraduate and graduate programs and the SIUC Graduate School to allow exceptional undergraduate students to complete a master's degree in a reduced amount of time. This is accomplished through the sharing of up to nine credit hours between both the undergraduate and graduate degree plans. The specific framework can be found in the academic program section of this catalog. The following requirements must be utilized by all accelerated master's degree programs:

Intent to participate must be initiated while the student is an active undergraduate at SIU Carbondale in a program with an approved accelerated master's degree. This intent shall be communicated as a signed notification agreement between the student, the director/coordinator of the master's program, and the Graduate School.

Intent must be supplemented with a list of the courses that will be shared between the two degrees. This list should be included in the notification agreement. Forms can be found on the Graduate School website. The specifics of shared coursework will be spelled out in the previously mentioned agreement.

1. Any changes to the shared course listing must also be communicated to the Graduate School.
2. All credit hours earned for a shared course must be included in the shared total. For example, if a student takes a 4-credit hour shared course, it is not possible to count only 3 credit hours of it in the shared total.

List of Master's Degrees with Accelerated Programs

- Agribusiness Economics
- Animal Science
- Aviation Management
- Biomedical Engineering
- Computer Science
- Criminology and Criminal Justice
- Econometrics and Quantitative Economics
- Economics
- Electrical and Computer Engineering
- History
- Human Sciences
- Linguistics
- Mathematics
- Psychology
- Quality Engineering and Management

FastTrack

FastTrack programs are fully on-line delivered degrees using an 8-week curricular format. Please refer to the academic unit descriptions for more information.

1. Format of courses: 8-week terms with two terms per major semester, with 5 start dates per academic year.
2. Part-time and Full-time credits: 3 credit hours will be considered part-time, and 6 credit hours will be considered full-time.
3. FastTrack students will not be able to use a payment plan.
4. Late registration is not available.
5. State of Illinois university employees who are eligible for tuition assistance can utilize their waiver for FastTrack programs.
6. FastTrack students will need to sign in and participate in a substantive activity (content-related) in their classes by the end of the first full week of the term, or risk being dropped from class.
7. FastTrack students will sign a verification form that they understand all the above.

List of Master’s Degrees with FastTrack programs

- Master of Public Health
- Master of Accountancy-General
- Master of Accountancy-AAIS concentration
- Master of Business Analytics
- Master of Public Administration
- Master of Business Administration – General, Concentrations: Marketing, Finance, Analytics for Managers

Other fully on-line programs that do not follow FastTrack stipulations are also available and are noted below.

Other On-line Master’s Programs Available

- Architecture
- Aviation Management
- Behavior Analysis and Therapy
- Biomedical Engineering
- Electrical and Computer Engineering
- Health Administration
- Health Informatics
- Medical Dosimetry
- Organizational Learning, Innovation, and Development (OLID)
- Public Safety Administration

- Quality Engineering and Management
- Radiologic Sciences
- Social Work

Double Major for a Master’s Degree

A student may earn a double major for a master’s degree if such a program of graduate study is commensurate with the student’s vocational and professional goals. A student interested in pursuing a double major for a master’s degree must submit to the Graduate School Dean the program of study endorsed by both of the cooperating academic schools. Forms are available on the Graduate School website.

Requirements for a Double Major for a Master's Degree:

1. The student must have been admitted to one master’s degree program.
2. Each unit in which the student wishes to earn a major must have an approved master’s degree program.
3. The Director of each unit must endorse the proposed program.
4. The proposed program must specify the title of the degree which is to be awarded.
5. The proposed program must be approved by the Dean of the Graduate School.
6. At least 18 semester hours must be earned for each major, and one-half of the required coursework for each major must be in courses numbered 500 or above.
7. The minimum number of credit hours required for the double major must total 60 percent of the sum of the total required for the two majors individually.
8. The thesis may be counted for not more than a combined total of 6 nor less than 3 credit hours.

Second Master’s Degree

A student who has earned a master’s degree from SIUC may earn a second SIUC master's degree if the degree is offered by a different unit or program and the criteria established by that unit or program are met for the second master's degree.

Dual (Concurrent) Master’s Degrees

A dual degree program is an integrated program of study designed to result in students earning two distinct University degrees in parallel by completing the requirements of two full degree programs, typically over a period of time shorter than would otherwise be required to complete both programs sequentially. It requires the completion of all requirements for each degree, but allows students to count designated credits to fulfill the requirements for both degrees. Students must be accepted and meet the requirements for each degree and follow the rules for the transfer or use of credit from one program to the other. Graduate students entering into the concurrent Master’s Degrees pathway:

1. Students must obtain admission to both academic departments and must be formally admitted to the concurrent degrees program prior to completion of the master’s degree requirements for either of the participating academic programs.
2. Students are required to complete all core requirements of each master’s program.
3. Students are required to earn no less than 80 percent of the total number of semester hours required in the master’s degree programs of each of the participating academic units. A total of 9 semester hours may be shared.
4. Conferral of both degrees shall occur in the same semester.

Concurrent Master’s Degrees Programs

- Agribusiness Economics and Business Administration (M.S./M.B.A.)
- Mass Communication and Media Arts and Business Administration (M.F.A/M.B.A)
- Health Administration and Health Informatics (MHA/MHI)
- Health Administration and Radiologic Sciences (MHA/RADS)
- Health Informatics and Radiologic Sciences (MHI/RADS)

Concurrent Master's and Law Degrees Programs

- Accountancy and Law (J.D./M.Acc.)
- Business Administration and Law (J.D./M.B.A.)
- Educational Administration and Law (J.D./M.S.Ed.)
- Electrical & Computer Engineering and Law (J.D./M.E)
- Health Administration and Law (J.S./M.H.A.)
- Higher Education and Law (J.D./M.S.Ed.)
- Public Administration and Law (J.D./M.P.A.)
- Social Work and Law (J.D./M.S.W.)

Concurrent Master's and Medical Degree Program

- Master's of Public Health and Medical Degree (M.P.H./M.D.)

Course Only Pathway

Some programs may have the option to substitute 6 credit hours of additional coursework in lieu of a thesis, paper or capstone project. See individual program catalog entries for more information. Students seeking MFAs do not qualify for this option.

Summary of Master's Degree Requirements

- At least 30 hours of graduate credit, or the minimum number of hours required by the specific degree program.
- Grade point average of at least 3.00.
- At least 50% of degree hours must be earned in courses numbered 500 or above, which must be completed at SIU Carbondale.
- At least 9 graduate credit hours after admission to the degree program must be passed.
- At least 21 hours of graduate coursework graded A through C-.
- Courses to be applied to the degree taken within 6 years of conferring the degree.
- Transfer credit taken at another institution or as a nondeclared student must be approved by the Graduate School Dean.
- Electronic submission of an approved thesis (pdf version) or an approved research paper (pdf version), as required.
- Passing a comprehensive or oral examination, as required.
- Submission of program clearance form.
- Registration in 601 Continuing Enrollment, as required.

Doctoral Degree Program

Admission

Admission to a doctoral program in the Graduate School normally requires a master's degree or its equivalent, a grade point average in graduate work of at least 3.00, and acceptance by the academic unit offering the doctoral program. Faculty of a degree program-unit may add its own grade point average requirements (above the Graduate School minima) for admission to that particular program. Applicants to doctoral level study may be considered for admission with a transcript missing the last semester of master's work. Current SIU Carbondale Master's students must be cleared for graduation before Matriculation into a doctoral program will be allowed.

Direct Entry into a Doctoral Program

Direct entry is possible into previously approved doctoral programs upon recommendation of the department and acceptance by the Graduate School. Applicants with exceptional research potential or outstanding academic preparation may have the option to enter a doctoral program after completion of a bachelor's degree only. No previous course work at the graduate level is allowed. Students admitted via direct entry will not receive a master's degree. The program must be approved for direct entry and

the student must have at least a 3.00 GPA on approximately the last two years of undergraduate course work.

Accelerated Entry into a Doctoral Program–for SIU Carbondale Graduate Students

Students currently enrolled in a master's program at SIU Carbodnale may be considered for accelerated entry into previously approved doctoral programs, upon the recommendation of the department and acceptance by the Graduate School. At least one semester of course work must have been completed in a master's program at SIU Carbondale, and a minimum grade point average of at least 3.00 must have been earned in all graduate course work (this includes graduate course work completed at other institutions). Once approved for accelerated entry, students will not receive a master's degree. Course work completed in a master's degree program cannot be counted toward residency requirements for a doctoral program. All requests for accelerated entry must be processed by the Graduate School by the 10th day of the semester for which the student wishes to be accelerated.

Accelerated Entry into a Doctoral Program–for Non-SIU Carbondale Graduate Students

Students enrolled in a master's program at a U.S. educational institution other than SIU Carbondale may also be considered for accelerated entry into previously approved doctoral programs, upon the recommendation of the department and acceptance by the Graduate School. At least one semester of course work must have been completed in a master's program at another institution, and a minimum grade point average of at least 3.00 must have been earned in all graduate course work. Once approved for accelerated entry, students will not receive a master's degree.

All requests for accelerated entry must be processed by the Graduate School by the 10th day of the semester for which the student wishes to be accelerated.

SIUC Programs with Direct Entry and Accelerated Entry

Program	Direct Entry	Accelerated Entry
Agricultural Sciences	Yes	Yes
Anthropology	Yes	Yes
Applied Physics	Yes	Yes
Business Administration	Yes	Yes
Chemistry	Yes	Yes
Communication Studies	Yes	No
Computer Science	Yes	Yes
Economics	No	Yes
Educational Administration	Yes	Yes
Electrical & Computer Engineering	Yes	Yes
Engineering Science	No	Yes
English	Yes	Yes
History	Yes	Yes
Math	Yes	Yes
Mass Communication & Media Arts	No	Yes
Mechanical Engineering	No	Yes
Molecular Biology, Microbiology, and Biochemistry	Yes	Yes
Molecular, Cellular and Systemic Physiology	Yes	Yes
Pharmacology & Neuroscience	Yes	Yes
Philosophy	Yes	Yes

Program	Direct Entry	Accelerated Entry
Physician Assistant Studies	Yes	No
Plant Biology	Yes	Yes
Political Science	Yes	Yes
Psychology	No	Yes
Sociology	Yes	Yes
Zoology	Yes	Yes

General Requirements

The doctoral degree is awarded for high accomplishment in a particular discipline or a recognized interdisciplinary area, as measured by the student's ability to pass the preliminary examination for admission to candidacy, meet the research tool requirement of the program, perform a piece of original research, present the results in proper form in a dissertation, and defend the dissertation before a faculty committee. All doctoral degree requirements must be completed within 10 calendar years from the time of initial enrollment in the program. Except for the hours required to meet residency and required 24 hours of dissertation, there is no Graduate School requirement that a certain number of semester hours be taken for the doctorate although some degree programs do require a certain number of semester hours. Graduate work completed at another institution may be eligible for transfer to the student's doctoral program, subject to Graduate School regulations regarding transfer of credit and acceptance by the student's major department. Transfer credit cannot be applied toward residency.

No doctoral level residence-credit program may be established off campus, although coursework involved in a doctoral program may be taken at an off-campus residence center provided that the full, normal requirement of residence on campus at SIU is met under the usual Graduate School standards for doctoral programs. However, established cooperative programs with SIU Carbondale and SIU Edwardsville permit students to be enrolled in courses and earn credits either at SIU Carbondale or SIU Edwardsville.

Preliminary Examination

The student will generally prepare for this examination through independent study and coursework, as advised by the faculty of the doctoral program. The examination is given to determine the breadth and depth of the student's knowledge within the discipline. The particular form and content of the examination are determined by the faculty of each of the doctoral programs. The student will be permitted to take the preliminary examination at the discretion of the department, after having completed two years of full-time study or its equivalent beyond the baccalaureate.

Research Tool Requirement

The doctorate at SIU Carbondale is a research-oriented degree. The research tool requirement is intended to be an integral part of the student's program. Since research materials, problems, and techniques vary from discipline to discipline, the details of the research tool requirement are determined by the faculty of each of the doctoral programs.

Residency

The residency requirement for the doctorate must be fulfilled after admission to the doctoral program and before formal admission to doctoral candidacy. The residency requirement is satisfied by completion of 24 semester hours of SIUC graduate credit as a doctoral student within a period not to exceed four calendar years. For students enrolled in our cooperative PhD programs with SIUE, graduate credit at SIUE will count toward residency. No more than six hours of deferred dissertation credit may be applied toward fulfillment of the 24 semester hours residency requirement. No doctoral student should be permitted to sign up for more than six hours of dissertation until candidacy has been achieved. Any dissertation hours registered for above the six permitted prior to candidacy will not be counted toward completion of the doctoral degree. Credit earned in concentrated courses or workshops may apply toward fulfillment of the residency requirements if the student is concurrently registered for a course spanning the full term.

No more than six semester hours of short course or workshop credit may be applied to the 24 semester hours residency requirement.

Admission to Candidacy

Admission to candidacy is granted by the Dean of the Graduate School upon recommendation of the faculty responsible for the student's program, after the student has fulfilled the residency requirement for the doctoral degree, passed the preliminary examination, and met the research tool requirement of the program. The doctoral degree may not be conferred less than six months after admission to candidacy, except upon approval of the Dean of the Graduate School. The candidate must fulfill all requirements for the degree within a five-year period after admission to candidacy. If completion of requirements is delayed beyond five years, a student may be required to take another preliminary examination and be admitted to candidacy a second time. All candidates must remain registered until completion of their degree. See section "Continuing Enrollment Requirement".

Dissertation

After being admitted to candidacy, the student must complete a dissertation showing that the student is capable of independent research or other creative effort. A successful dissertation usually represents the most extensive and intensive scholarly work the student has performed to date. Completing the dissertation will lead the student up to the cutting edge of research (however defined by the discipline) conducted at that time in his or her field of research. A dissertation must address a significant question and demonstrate that its author can interpret findings and formulate conclusions that are the result of independent thinking and sustained evaluation of source materials. These findings must be expressed in clear and grammatical language that is well organized into cogent and coherent argument. A dissertation that contains the student's published or in press manuscripts, or excerpts from these manuscripts, shall, in the preface, describe these materials and their contribution to the dissertation. In the case of multi-authored manuscripts, the student's contribution to each such manuscript must be clearly delineated in the preface and attested in a separate statement by the chair of the dissertation committee addressed to the Graduate School. The dissertation shall be supervised by a faculty committee which has been approved by the Dean of the Graduate School. This committee shall consist of five or more graduate faculty members, at least one of whom shall be from a graduate program outside the student's academic program. The outside committee member must not have a primary appointment in the academic program (or equivalent units) granting the student's degree. The Dean of the Graduate School has the discretion to make this determination.

While working on the dissertation, the student must register for the course numbered 600. The student is to devote at least one academic year of full-time work to complete the dissertation and will register for 24 semester hours of dissertation credit, for example, 12 hours for each of two terms.

Students who have registered for 24 semester hours of dissertation credit and have not completed the doctoral dissertation are subject to the continuing enrollment requirement described within the tab titled "General Regulations and Procedures".

Publication of the doctoral dissertation to insure its availability to the scholarly community is considered an integral part of the process of doctoral education. Students must submit their dissertations electronically (pdf) to ProQuest for publishing. An abstract of the dissertation will be published in Dissertation Abstracts International.

The student must submit electronically a pdf version of the dissertation acceptable to the Graduate School, along with an abstract. There is a library fee for binding. If copyright is desired, an additional fee will be required. The Survey of Earned Doctorates is completed and submitted online.

The abstract will be published in the current Dissertation Abstracts International and the dissertation will be cited in American Doctoral Dissertations and Comprehensive Dissertation Index. A copy of the dissertation will be placed in the Library of Congress archives. This service assures the student that the dissertation will be available to other researchers at no further personal expense to the student.

If the student elects to use the copyright service, copyright will be obtained in the student's name. Publication rights, other than for reproduction in microform or from microform, are the student's to assign to any publisher at any time. In addition, arrangements can sometimes be made for University Microfilms to publish a small edition of the dissertation.

Final Examination/Oral Defense

There will be a final oral examination administered by the student's doctoral dissertation committee. The examination will cover the subject of the dissertation and other matters related to the discipline. Any member of the graduate faculty may attend the final oral examination and may participate in questioning and discussion, subject to reasonable limitations imposed by the chairperson of the committee, but only members of the committee may vote or make recommendations concerning acceptance of the dissertation and final examination. A student will be recommended for the degree only if the members of the committee, with at most one exception, judge both the dissertation and the performance at the final oral examination to be satisfactory. In cases where a committee of more than five members has been approved, the requirement of not more than one negative vote will still apply.

Interdisciplinary Doctor of Philosophy Programs

These guidelines provide for interdisciplinary doctoral programs for a limited number of students whose educational requirements can be met by existing resources, but not exclusively by any one of the University's constituent units. Interdisciplinary doctoral programs will be instituted in response to the particular academic interest of individual students, not as programs of a permanent nature. The procedures and criteria given below govern the authorization and control of interdisciplinary doctoral programs:

1. After admission to an established doctoral program at SIU Carbondale and upon the recommendation of the chairperson or adviser of that program, a student may apply for an interdisciplinary doctoral program to the Dean of the Graduate School.
2. The Dean of the Graduate School will apply the following criteria in deciding whether a program committee should be established to consider the proposed interdisciplinary doctoral program:
   a. The requisite staff must be available.
   b. The library holdings must be adequate without unreasonable additions.
   c. The program must lie within the recognized disciplines or fields of study, at least one of which offers the doctoral program.
3. If the Dean of the Graduate School is satisfied that the proposed program satisfies these criteria, the Dean shall form a special program committee of five members, at least three of whom shall be from units offering the doctorate.
4. If the committee approves the proposed program, a plan of study shall be developed that includes the following elements:
   a. Fields or areas of study
   b. Required courses
   c. Languages or other research tool requirements
   d. Dissertation subject
   e. Preliminary examination
5. The program as approved by the committee and accepted for principal sponsorship by a unit with an approved doctoral program shall be submitted to the Dean of the Graduate School. Upon final approval the student's program shall have the same binding effect upon the Graduate School as programs printed in the graduate catalog. The degree earned shall carry the title of the doctoral unit that has assumed principal sponsorship. The commencement program shall give specific indication that the degree is interdisciplinary and include a listing of those units that are substantively involved in addition to the principal sponsoring unit, as determined by the graduate dean.
6. When the committee has certified all the required performances, including the results of examinations, the committee shall be dissolved.

Concurrent Doctoral and Law Degrees Programs

Political Science and Law (J.D./Ph.D.)

Cooperative Doctoral Degree Programs between SIU Carbondale and SIU Edwardsville

A cooperative doctoral program between SIU Carbondale and SIU Edwardsville permits classified graduate students to be enrolled in certain designated courses at either SIU Carbondale or SIU

Edwardsville and earn credit in partial fulfillment of the doctoral degree requirements at SIU Carbondale. The following SIU Carbondale doctoral programs have approved cooperative agreements with SIU Edwardsville:

- Computer Science Ph.D.
- Educational Administration E.D.D.
- Engineering Science Ph.D.
- Environmental Resources and Policy Ph.D.
- Historical Studies Ph.D.
- Pharmacology and Neuroscience Ph.D.

Summary of Doctoral Degree Requirements

- Achievement of a grade point average of at least 3.00.
- Completion of any specific courses required by the doctoral program.
- Fulfillment of the residency requirement.
- Completion of the research tool required by the doctoral program.
- Passing of the preliminary examination.
- Admission to candidacy.
- Completion of an approved dissertation with 24 hours of dissertation credit.
- Oral defense of dissertation.
- Electronic submission of dissertation (pdf version) to the Graduate School.
- Completion of Survey of Earned Doctorates.
- Degree conferred not less than six months nor more than five years after admission to candidacy.
- Submission of program clearance form.
- Registration in 601 Continuing Enrollment, as required.

General Regulations and Procedures

This section includes Graduate School procedures and regulations applicable to all graduate students regardless of degree classification. Requirements unique to the master's and doctoral degrees are stated in the section titled Degree Requirements. For information about specific degree programs, the student should consult the appropriate degree program description. Requirements unique to the non-degree classifications are stated in the section in this page titled "Nondeclared Students—Non-Degree".

Registration

Registration Deadlines

Deadlines	16-Week Semester (Fall and Spring)	16
Late Registration ($15.00 fee)	First day of the semester	
The deadlines listed below are for full-term courses		
Deadline to add a course, or change sections (without the instructor's signature)	Week 1	
Deadline to change credit/audit status of a course	Week 2	
Deadline to drop a course with a full refund	Week 2	
Deadline to withdraw from the University with a full refund	Week 2	
Deadline to add a course	Week 2	Week 2
Deadline to withdraw from the University with 50% tuition and 100% fees refund	Week 3	
Deadline to withdraw from the University with 50% tuition and no fees refund	Week 4	
Deadline to drop a course with no refund (W grade)	Week 10	

Deadlines	16-Week Semester (Fall and Spring)	16
Deadline to withdraw from the University with no refund	Week 10	

Only those students who have been officially admitted by the Graduate School will be permitted to register.

To begin the registration process, a student needs a network ID and a password. To claim your dawg tag, go to netid.siu.edu. If a student is not yet admitted to the Graduate School or does not have department approval to register or there is some other problem, the student is ineligible to register.

Degree-seeking students may be required by their graduate program to consult with an advisor and obtain a Registration User Number (RUN) to register online. Please consult the designated graduate program about advisement. Nondeclared, non-degree students are technically self-advised and may begin registration for the admitted semester after the registration period begins.

The Schedule of Classes for a particular semester is available online at https://registrar.siu.edu/schedclass/. The Registration dates, Course Drop (with full refund) dates, and Course Withdrawal (with W grade) dates are listed for every course.

Students can register themselves (via https://salukinet.siu.edu) for full-semester courses through the first week of the semester, and for late-starting courses up to the first day of the course. All adds sent to the Graduate Registration Office must be requested using a Course Request Form (CRF) signed by the Director of Graduate Studies and the Academic Dean, before the request will be processed. A CRF for a section change or to change a student's previously completed registration in a course to an audit (AU) can be processed through the 2nd week of the semester.

Late registrations will no longer be allowed beyond the second week of the term. In cases of genuine exceptions that arise, these exceptions will be reviewed rigorously and require approval from the Graduate School Dean and the Provost. To request an exception, the signed CRF and a memo, explaining why the add is being requested after the deadline, must be submitted to the Graduate Registration Office. After both documents have been received, they will be forwarded to the Graduate School Dean and the Provost for final review.

Students can drop a full-semester course with refund in SalukiNet through the second week of the semester and can withdraw from a course with a W grade in SalukiNet through the 10th week. After the tenth week, a Retroactive Academic Action Petition (RAAP), will need to be submitted to withdraw from a course. A CRF is required when a student with a registration hold needs to drop a course. A CRF is also used for an administrative drop initiated by the instructor or program when a student is determined to not be eligible to be in a course. The CRF must be signed by the Director of Graduate Studies before it can be processed. The RAAP form is available at https://siu.edu/admissions/graduate/resources/forms.php under Registration Forms.

The Course Request Form (CRF) is available at https://siu.edu/admissions/graduate/resources/forms.php under Registration Forms.

Late Registration

A late registration fee of $15 shall be assessed to all students taking on-campus classes who register the first day of classes or later. This fee shall be non-refundable and cannot be waived, except when it is clearly shown that the late registration was caused by faculty or administrative action. Off-campus classes and registration in 599, 600, and 601 shall be exempt from such fee.

Other Types of Registration in Graduate Courses

The following discussion concerns students who are either nondeclared for various reasons or are undergraduates wanting to take graduate-level courses.

Nondeclared Students—Non-Degree

A person may apply for admission to the Graduate School as a nondeclared student when the applicant does not seek a graduate degree or has applied too late to be admitted to a degree program for the term for which admission is sought, or does not meet the minimum GPA requirements for admission to a graduate degree program at this time.

Students applying for admission as a nondeclared graduate student who hope to obtain admission in a particular graduate program at a later date, should meet with the Director of Graduate Studies of that graduate program before registering for courses and seek information as to what courses they may take which would be counted towards degree requirements if they are admitted to the program later. Once the student is enrolled in the graduate program, the graduate program must petition the Graduate School that graduate courses completed while a student was nondeclared be counted toward fulfillment of degree requirements. The student will be subject to the rules and regulations of the Graduate School and the graduate program concerned including the completion of at least nine hours after being admitted to a master's degree program from nondeclared status.

Please note that nondeclared graduate students are not eligible for Graduate School fellowships or tuition waiver scholarships. Contact the Assistantship Office for details. Loans may be available for one 12 month period only, beginning when the student first enrolls in the nondeclared category and ending 12 months later. To determine eligibility, contact the Financial Aid Office.

Undergraduate Student Registration in Graduate Courses

Graduate Credit

An undergraduate student who wishes to register for a graduate course for graduate credit must file the standard application for admission to the Graduate School and submit a request for graduate credit. Forms are available at https://siu.edu/admissions/graduate/resources/forms.php under 'Registration Forms'. If the student is academically eligible for admission to a degree program, the student will be allowed to register as an undergraduate for graduate courses for graduate credit when within 12 semester hours of completing requirements for the bachelor's degree. Permission of the instructor teaching the course must be obtained, and for 500-level courses, the permission of the director of the school offering the course.

An undergraduate student who meets these qualifications will be allowed to take graduate courses for graduate credit for one semester. If, at the end of the term, the student has not earned the bachelor's degree, permission to enroll in graduate courses for graduate credit will be withdrawn until after the bachelor's degree has been conferred. Graduate credit cannot be granted once a semester is complete.

All requests for graduate credit as an undergraduate must be processed by the Graduate School by the 10th day of the semester for which the student wishes to register.

Undergraduate Credit

The Graduate School has the responsibility of approving the registration of undergraduate students in 500-level courses for undergraduate credit. Undergraduate students should only be encouraged to take 500-level courses if they are properly qualified. In dealing with these requests the following procedures must be followed.

The student must:

1. Have a GPA of 3.0 or higher.
2. Receive approval from the director of the school offering the course.
3. Receive approval from the instructor of the course.
4. Submit a CRF signed by the undergraduate academic advisor.

The two forms required for this request are available at https://siu.edu/admissions/graduate/resources/forms.php under Registration Forms.

Forms need to be submitted to the Graduate Registration Office in the Student Services Building Room 325 or emailed to gradregistration@siu.edu.

School of Law Courses

A graduate student may enroll for graduate credit in designated law courses if the student has permission of the Dean of the School of Law and the Dean of the Graduate School. Registration must be processed through the Graduate School and the grades will be reported on the Graduate School letter grade system (A+, A, A-, B+, B, B-, C+, C, C-, etc.).

A law student may register for law credit in graduate courses with approval of the Dean of the School of Law and the graduate dean. Registration must be processed on School of Law forms and the grades will be reported on the Graduate School letter grade system.

A law student may not register for graduate courses for graduate credit unless the student has been admitted to the Graduate School in an approved concurrent program.

Residence-Center Credit

Credit earned at approved graduate residence centers will be entered on a student's record as on-campus credit earned at SIU Carbondale.

Students enrolled for credit in approved residence-center master's degree programs or in specific residence credit courses must have been officially admitted (either in a degree program or nondeclared) to the Graduate School at SIU Carbondale. For information about specific programs and courses, the student should consult the appropriate department.

Illinois Residency

Determination of residency status of each applicant for admission to the University is made at the time of admission. A student may petition for change to Illinois residency by contacting the Graduate Registration Office.

In order to qualify for in-state tuition at SIU Carbondale, a student must be a citizen or permanent resident of the U.S. and must be a bona fide resident of the State of Illinois for the six-month period immediately preceding the start of the semester of which they wish to be classified as an Illinois resident. In order to qualify for in-state tuition, you need to be at least 18 years old at the time classes begin and move into Illinois and remain living in Illinois for six months prior to applying for Illinois residency. You must also change your driver's license to an Illinois driver's license, register to vote in Illinois, and if you are the sole owner of a vehicle you will be driving in Illinois, it must be registered in Illinois. You will need to complete an application for Illinois residency, and include with the completed application any appropriate documentation. Have the application notarized before you submit OR have your application notarized in the Graduate School office (requires two picture ID's). Visit https://siu.edu/admissions/graduate/academic-support/registration/illinois-residency.php to download the application and view a list of required documents.

Graduate Student Course Loads

Financial Aid Awards

For financial aid awarding purposes, the following defines the number of semester hours for full-and half-time:

Financial Aid Awards - Semester Hours

Status	16-week Semester	8-Week Session
Full-time	12	6
Half-time	6	3

Graduate students enrolled in fewer than six hours for fall and spring semesters or three hours for summer session are not eligible to obtain student loans.

Enrollment Certification

The following semester hours of credit are to be used to certify full-time and half-time attendance of graduate students.

Enrollment Certification - Semester Hours

Status	16-week Semester	8-Week Session
Full-time	9 or more hours*	3 or more hours
Half-time	6 hours	Less than 3 hours

Status	16-week Semester	8-Week Session
Less than half-time	Less than 6 hours	

*Students who hold at least a quarter-time (25% FTE) graduate assistantship are considered as full-time if they have a minimum of 8 semester hours. Doctoral students who are admitted to candidacy and hold an assistantship are considered as full-time if they have a minimum of six semester hours (or 3 semester hours in an 8-week term, if it is the final term).

Minimum and Maximum Course Loads

Maximum coursework for graduate students is 16 hours each semester; 9 hours is considered a normal load. The minimum and maximum loads for graduate students under various types of financial support are summarized below, and a graduate student must enroll in graduate-level course(s). Please consult the Graduate Catalog for available graduate courses. Audit work will not qualify to meet the minimum load. An exception to the 16 credit hour maximum load may be possible only with advanced written permission of the graduate Dean.

Graduate students with a Graduate Assistantship must enroll in a minimum of eight graduate credit hours during the fall/spring to receive a tuition waiver for up to 12 hours. During the summer, a minimum of three graduate credit hours are required to receive a tuition waiver for up to 6 hours. Students with a Graduate Fellowship or SIU Carbondale Scholarship must enroll in a minimum of nine graduate credit hours during fall/spring and three during summer.

Tuition Waivers shall cover up to twelve (12) credit hours per semester (Fall, Spring) during the academic year and up to six (6) hours in the Summer. Programs which require more than 12 credit hours per semester for graduation will have such credits covered by the tuition waiver, even in excess of these limits. Such exemptions to the waiver limits must be approved by the Director of Graduate Studies in the relevant program and/or by the Director/Dean of the relevant school.

Grad Assistantship - Minimum Hours

Graduate Assistantship Enrollment Minimums

Type of Financial Support	Max	Min
No financial support	16	
Graduate Assistantships		
1/2 time appointments	12	8
1/4 time appointments	12	8
Full-time University employees	6	
Graduate Fellowships	12	9
Full Veteran's Benefits	16	9
SIUC Scholarships	12	9

Type of Financial Support	Max	Min
No financial support	9	
Graduate Assistantships		
1/2 time appointments	6	3
1/4 time appointments	6	3
Full-time University employees	6	
Graduate Fellowships	6	3
Full Veteran's Benefits	9	3
SIU Scholarships	6	3

All University employees who wish to use the employee tuition fee waiver (faculty and staff) and are classified as graduate students are only permitted to register for six hours. To request permission to take over six hours, a memo from their hiring department approving the extra hours must be submitted to the Graduate School Records Office. If graduate students' enrollments fail to meet the minimum hours required by their type of financial support, the financial support will be terminated.

Continuing Enrollment (601)

All students in a graduate program but not enrolled in at least one class by the Friday before the semester begins in the fall will be registered in 601 by the Graduate School. Graduate students not registered by week 2 in the spring will be registered in 601. This hour will be dropped if the student subsequently enrolls in a class that semester or is granted a leave of absence by his/her graduate program by the 10th week of the semester. Each program has its own policy of whether and when to grant leaves of absence. Students on leave are not required to enroll in 601 for the leave period, but a leave of absence does not affect the time-to-degree requirement. Summer semesters are exempt from continuing enrollment (601) unless required by the program, or for international students in their final semester, who must be enrolled unless they have left the country or are on OPT.

Registration in 601 (one hour per semester) is required of all degree-seeking graduate students, whether in residence or not, who are not otherwise enrolled for fall or spring semester. Concurrent registration in any other course is not permitted.

Students registering for 601 are assessed only in-state tuition for the credit hour associated with the registration. Since student fees are not assessed for 601, the students are not eligible for the benefits of any other programs such as Recreation Center use, Health Service and Student Medical Benefits, Students' Attorney Program assistance, etc. Students needing the above benefits that require fees may instead register for additional research, thesis, or dissertation hours.

601 Credit hours are not eligible to be used toward meeting coursework degree requirements.

Leave of Absence

Graduate students may request a leave of absence through their school, with approval from the graduate school dean. During the leave, the student's status is put on hold, with the option to return to the program at a specified time. The purpose of the LOA can be for personal reasons that do not need to be disclosed to SIU Carbondale. Requests for a leave of absence can be submitted before the start of the Fall or Spring semesters and can be renewed for one additional Fall or Spring semester. Students approved for a LOA will not be registered for classes, which will affect their access to University services. They will no longer have access to campus facilities and services. Upon their return, students will not need to apply for re-admission; however, they are not guaranteed financial support. The student and academic program must also submit a plan of study to the Graduate School.

Students who have not paid their bills and owe more than $1500 will not be allowed to enroll, and this may affect their graduate standing. They should enroll as soon as their Bursar hold is lifted.

Transfer Credit

Up to 9 graduate credits earned by a student in good standing at an accredited university, which have not been applied toward fulfillment of requirements for another degree, are eligible for transfer to that student's degree program, subject to general limitations of Graduate School regulations, residency requirements for doctoral degree programs, and acceptance by the student's graduate program. This rule applies throughout the Graduate Catalog to any mention of graduate courses transferred from other institutions. All transfer credits are subject to final review by the graduate dean. No transfer credit will be given for work bearing a grade below B or graded "satisfactory" without express permission of the graduate dean in response to written petition from the student's graduate program. Credit towards a degree may be earned by online and off-campus courses at another accredited university. In the case of a master's degree, the student must earn all but 9 hours of the credit applied toward fulfillment of degree requirements in courses offered by SIU Carbondale. Grades for coursework transferred to SIU Carbondale from an outside university will not be calculated in the cumulative SIU Carbondale grade point average.

The program recommending the graduate degree shall administer all required general and final examinations, and a member of the graduate faculty at SIU Carbondale shall direct the student's master's thesis, required research paper, capstone report, or doctoral dissertation.

Graduate Grading System

Graduate Grading System

Grade	Definition
A	Excellent. 4.00 grade points
A-	Excellent. 3.667 grade points
B+	Good. 3.33 grade points
B	Good. 3.00 grade points
B-	Conditional, not fully satisfactory 2.667 grade points
C+	Conditional, not fully satisfactory 2.333 grade points
C	Conditional, not fully satisfactory 2.00 grade points
C-	Conditional, not fully satisfactory 1.667 grade points
D+	Poor, not satisfactory 1.333 grade points
D	Poor, not satisfactory 1.00 grade point
F	Failure. 0 grade points
S	Satisfactory. Used for thesis and dissertation credit and certain designated and approved 500-level research, internship, and practicum courses. Is not counted in calculating grade-point average.
U	Unsatisfactory. Used for thesis and dissertation credit and certain designated and approved 500-level research, internship, and practicum courses. Is not counted in calculating grade-point average.
W	Authorized withdrawal made through a program change. Work may not be completed. Refer to grade explanation below.
INC	Incomplete. Has permission of the instructor to be completed within a period of time designated by the instructor. Refer to grade explanation below.
DEF	Deferred. Used only for certain designated and approved 500-level courses of an individual continuing nature such as research, thesis, or dissertation. Refer to grade explanation below.
AU	Audit. No grade or credit earned. Refer to grade explanation below.
NR	Grade not recorded. A student's degree may not be posted to the transcript if a grade of NR exists on the transcript.
WU	Unauthorized withdrawal at instructor's discretion for student in good standing in class who stopped attending class during first 60% of the semester. This grade cannot be made up.

Grading System Explanation

Only courses for which the grades of A+, A, A-,B+, B, B-, C+, C, C-, or S have been received are acceptable in fulfillment of graduate degree requirements. The letter grades A+, A, A-, B+, B, B-, C+, C, C-, D+, D, D-, and F are included in computing the grade-point averages for academic retention. If a graduate student repeats a course with the permission of the graduate dean, only the most recent (last) grade will be counted in the grade-point average. Graduate students will not receive graduate credit for Pass/Fail grades.

Withdrawal

Except for the WU grade, a W indicates authorized withdrawal from a course prior to the date indicated in the Schedule of Classes for the term in which the course was taken. The student's record will reflect the courses from which the student had withdrawn with the symbol W and the week of withdrawal.

Program changes to drop a course during the first two weeks of classes result in no entry being made on the student's record (consult the section titled "Withdrawal from Courses and from the University" for additional information on withdrawal procedures and deadlines).

Incomplete

An INC grade should be assigned when, for reasons beyond their control, students engaged in passing work are unable to complete all class assignments. INC is not included in grade point computation. An INC must be changed to a completed grade within one year from the close of the term in which the course was taken or graduation, whichever comes first. Should the student fail to complete the course within the time period designated, that is, one year from the close of the term in which the course was taken or graduation, whichever comes first, the Incomplete will be converted to a grade of F and the grade will be computed in the student's grade point average.

To complete the work from the original registration, a student should not register for the course again, but should complete the work for the original registration if the original registration is within the normal time limits established for the degree.

A contract for an INC grade must be established between the instructor and student at the time the INC grade is assigned.

An extension may be granted if the request for the extension is made within the first year and approved by the Dean of the Graduate School and the Provost.

Deferred

When the work is completed in a course for which DEF has been assigned, the grade is changed to a letter grade by the instructor, except in the case of theses and dissertations. When a thesis or dissertation has been submitted to the Graduate School as approved, the grade is automatically changed to S. If a thesis or dissertation is found unacceptable and the student is dismissed from the program, the grade of U is automatically assigned upon receipt by the Graduate School of the action dismissing the student.

Audit

A student registering for a course on an audit basis receives no letter grade and no credit hours. The student's registration must indicate audit registration and the same fees are paid as when registering for credit. During the first two weeks of a regular semester, a student registered for a course for credit may change to audit status or vice versa through the official program change process. Thereafter, the change may not be made.

Changing of Grades

At the completion of a course, the final grade assigned to a student is the responsibility of the instructor of the course. Grades given at the end of the course are final and may not be changed by additional work or by submitting additional materials; however, clerical errors in recording grades can be corrected. To correct a clerical error, the assigned instructors should submit a grade change card together with an explanation and justification of the grade change for the approval or disapproval of the program director, the appropriate college Dean, and the Dean of the Graduate School. In cases of theses and dissertations, for which DEF grades are given, the Graduate School changes the DEF grades upon presentation and acceptance of the thesis and dissertation and receipt of the departmental approval papers. In courses for which INC and DEF grades have been given, the assigned instructor has the responsibility of determining the final grade to be assigned and notifying the Registrar's Office of the final grade by means of the grade change card.

Withdrawal from Courses and from the Semester

Dropping Courses

Students officially registered for a session must officially withdraw from that registration in a timely manner to avoid being charged as well as receiving a failing grade for those classes. An official withdrawal must be initiated by the student and processed by the Graduate Registration office. Outlined

below are the procedures to be followed by graduate students when withdrawing from the University and/or Program.

Deadlines for Dropping from a Course(s)

Course Deadlines

If Classes Meet for*	Deadline for Withdrawal to Receive Full Refund	Deadline to Withdraw
13-16 weeks	2nd week	10th week
9-12 weeks	2nd week	8th week
8 weeks	2nd week	5th week
7 weeks	1st week	4th week
4-6 weeks	1 st week	3rd week
2-3 weeks	1st day	1st week
Less than 2 weeks	1st day	2nd day

*Students must drop a course or withdraw from the University by these deadlines to receive an account credit equal to a full refund of tuition and fees. Students who drop courses after the full refund deadline but remain enrolled in the University will not receive any refund. Students who withdraw from the University after the full refund period will receive an account credit up to week four (see chart below).

Course Drops

All students that wish to officially add or drop classes will do so within the SalukiNet portal. If the student has a hold on their registration, an email can be sent to the Graduate Registration Office, gradregistration@siu.edu, requesting assistance. Graduate students may drop from a course through the 10th week of the fall and spring semesters. Drop deadlines for shorter sessions are correspondingly earlier (see schedule). Course drops after the refund deadline but prior to the deadline to withdraw will result in the course listed on the student's record with the symbol W. Unless a student has processed an authorized drop from a course by the deadline in the schedule above, the student will not be allowed to drop the course. It is the student's responsibility to ensure that the drop process is officially completed. It is probable that a student, who does not drop by the deadlines, but stops attending, will receive a grade of WU (unofficial withdrawal). Note: ceasing to attend a course may affect a student's financial aid eligibility (student loans and tuition waivers). Students who drop courses after the full refund deadline, but remain enrolled in the University, will not receive any refund.

Withdrawal from the University

Students registered for academic work must obtain a withdrawal if they contemplate leaving the University. Semester withdrawal occurs when all courses for which the student is registered are dropped. If a student has a graduate assistantship, the student must resign from the contract.

Withdrawal from the University is a serious decision, which, in many cases, affects financial assistance status and academic records. Students are not allowed to drop all of their courses in a given semester via SalukiNet. Semester withdrawal is processed through the Graduate Registration Office, gradregistration@siu.edu. A withdrawal will not be issued beyond the tenth week of the semester unless the reasons for the withdrawal are beyond the student's control and verified in writing. Warning: if a student obtains a withdrawal after the 100% refund period and is receiving financial assistance, the student may be in violation of the Satisfactory Progress for Financial Assistance policy since no academic credit will be earned for the semester. The accompanying table provides the deadline dates for withdrawal. All credits or refunds are determined by the effective date of the withdrawal and are subject to the direction of the USDOE for the distribution of Title IV funds, if applicable.

Students receiving a withdrawal from a full semester length course within the first two weeks will, under normal circumstances, receive a refund of all tuition and fees paid by the student. Some or all financial assistance funds, depending on the source, will be returned to their original sources if the student withdraws during the 100% period.

Students who withdraw after the full refund deadline will receive an account credit equal to the appropriate refund of tuition and fees for student loans. Students with an assistantship will lose the tuition waiver at the time of withdrawal. An administrative fee will be assessed to all students who withdraw from the University and receive a refund beyond the full refund period. The amount of the fee will be a fixed charge of $100. See the following SIU Carbondale refund policy.

Refund Schedule for Withdrawals from the University

SIU Carbondale Refund Policy

This chart is based on refunding for full semester length course.

Percentage of Refund

Refund Percentage

Week	Tuition	Fees
Week One	100%	100%
Week Two	100%	100%
Week Three	50%	100%
Week Four	50%	0%
Week Five and after	0%	0%

No tuition refund will be given after week four; no refund of fees will be given after week three. Student fees are charged as a condition of enrollment.

Special consideration is extended to individuals who leave school for extended military service (six months or longer). These students may choose to withdraw completely and have the withdrawal backdated to show no enrollment. If withdrawing during the third through tenth weeks of school, these students may receive WMS grades in all classes, with the appropriate refund. When the withdrawal occurs after the tenth week, students will receive both grades and credit hours for the courses in which they are passing. In all instances, a copy of the military orders or a letter from the commanding officer is required for verification of impending military service. To be eligible for these benefits, students must remain in school to within ten days of their military reporting date.

Students in military service with the State of Illinois pursuant to the orders of the Governor have the right to receive a full monetary credit or refund for funds paid to any Illinois public university, college or community college if the person is placed into a period of military service with the State of Illinois in the event of state emergencies pursuant to the orders of the Governor and is unable to attend the university or college for a period of seven or more days. Students may elect to receive course credit for all of their courses rather than a refund.

Students who have a graduate assistantship and resign from their contract will not be automatically withdrawn from their courses. Students must complete the withdrawal process.

Withdrawal from the Program

Students who want to withdraw from their program are responsible for contacting the Graduate School by sending an email to gradschl@siu.edu. Failure to withdraw from the program will result in auto-enrollment of Continuing Enrollment, 601 during fall and spring semesters.

Retention

Any graduate student whose cumulative grade point average falls below 3.00 will be placed on academic probation. Faculty of a degree program-unit may determine its own grade point average requirements (above the grade point minimum for retention in their particular program.) All 500-level courses taken after a student is admitted to the Graduate School are considered graduate level, unless the course is specifically designated, “Not for Graduate Credit”, for all students. Grade point averages for doctoral students are based on graduate credit work completed at SIU Carbondale after admission to the doctoral program. Grade point averages for master’s degree students and nondeclared graduate students are based on all graduate credit work completed at SIU Carbondale.

Any graduate student on academic probation whose grade point average remains below 3.0 for two consecutive semesters in which she or he is enrolled, excluding summer sessions, will be permanently suspended from the Graduate School, unless the department and the collegiate dean petition the graduate dean for an exception.

Graduate students who have a grade (or grades) converted from an INC to an F due to the INC grade policy which results in a retroactive change in GPA below 3.0 for the semester the course was taken, and any subsequent semesters, will be placed on Retroactive Academic Probation. The term Retroactive Academic Probation will appear on the students' transcripts to show that they were not in good standing in the Graduate School during the semester(s) effected.

Graduation

Graduation ceremonies are held each year at the end of each spring semester and fall semester. Degree candidates must apply for graduation with the Graduate School typically by the fourth Friday after the semester begins. Late graduation applications for extenuating circumstances beyond the student's control will be considered through the end of the eighth week of fall and spring semesters. No applications will be considered beyond the eighth week of fall and spring semesters and the fourth week of the summer term. Graduation Application forms are available in the Graduate School and may be obtained by downloading from the Graduate School web page: gradschool.siu.edu.

Candidates who do not meet graduation requirements will automatically be rolled to the next graduation term (May-to-August, August-to-December, December-to-May) with no additional fee, not to exceed one term. Candidates who fail to meet the degree requirements by the deadline for that graduation term will be removed from the pending graduation list. It will then be the student's responsibility to submit a new Graduation Application form by the deadline for the term in which they now plan to graduate. The new application will result in the assessment of another Graduation Application fee. Commencement ceremonies are held only in May and December. August graduates should consult the Graduation Application for commencement information.

Any financial obligations with the University must be cleared by the Bursar's Office before the release of diplomas and official transcripts. Diplomas are mailed to the address on the Graduation Application form within four to ten weeks after the end of the term.

A $50 graduation fee is established for all persons receiving degrees. The fee is payable at the time of application or the fee will be charged to the student's account. Late applications will be assessed a $75 Graduate Application fee. The fee does not cover the rental fee for the cap, gown, and hood, or the cost of the invitations. These items are ordered through the University Bookstore in the Student Center and questions regarding them should be referred to the University Bookstore. Doctoral and Master's students are required to pay a library fee. Theses and dissertations are submitted electronically (pdf) to UMI ETD Administrator. Research papers should be electronically submitted to OpenSIUC.

Submission of research papers, theses, and dissertations are due in the Graduate School office by the published deadline date. Contact the Graduate School for dates. Doctoral students must also submit the survey form of earned doctorates at the time the dissertation is submitted.

The Graduate School Guidelines for the Preparation of Dissertations, Theses and Research Papers is available at the Graduate School website (gradschool.siu.edu). Since each program has chosen a manual style that must be used in conjunction with the Graduate School guidelines, the student should contact the department for additional departmental information.

Although attendance at commencement is not compulsory, students who wish to graduate in absentia must notify the Graduate School in advance. This information is needed for seating arrangements and for mailing purposes.

Posthumous Degree Policy

Degrees may be awarded posthumously to any student who, at the time of death, has completed the necessary work for a degree as outlined in this policy. Each university shall file guidelines in the office of the president for implementing this policy (SIU Board of Trustees Policies 1.4.D.1.c.).

Southern Illinois University Carbondale has established guidelines as follows for recommending the posthumous awarding of degrees (such guidelines were filed with the office of the Board of Trustees at the time the Board initially adopted the above policy on December 8, 1977).

1. **Undergraduate**

An undergraduate degree may be awarded posthumously when the student has completed approximately 75% of the requirements of their degree program, is currently enrolled and/or actively pursuing the degree and is in good standing with the institution at the time of death. This determination rests with the dean of the degree-granting program [Approved by SIUC Faculty Senate February 12, 1974].

2. **Graduate**
   A graduate degree may be awarded posthumously when the student has completed approximately 75% of the requirements of their degree program, is currently enrolled and/or actively pursuing the degree and is in good standing with the institution at the time of death. For graduate degrees requiring a research project, thesis or dissertation, the student should have made substantial progress toward the completion of the above as supported by the student's advisor and/or advisory committee. PhD students must have been admitted to candidacy. This determination rests with the Graduate Dean in consultation with the administrative officers and faculty of the degree program in which the student had been enrolled. [Approved by SIUC Graduate Council June 7,1974]

Nomination/Approval Process

1. Anyone may identify a student for a posthumous degree. To begin the formal process, a request must be made to the Dean of the appropriate college. The Dean of the college in which the student was enrolled will recommend the student for a posthumous degree in the form of a formal written request to the Provost and Vice Chancellor for Academic Affairs. The request must include the name and ID number of the student, the degree/program plan to be awarded, a copy of a completed graduation clearance form and the recommended semester for degree conferral.
2. If supported by the Provost, they will submit the recommendation to the Chancellor for formal approval. If supported by the Chancellor,
   a. The Chancellor will notify the Registrar's Office or the Graduate School via memo to begin the process for degree posting. The Registrar's Office will notify Events and Outreach for degree conferral arrangements.
   b. The immediate family will be informed of the University's decision and desire to recognize their student with this honor.

Award Considerations

1. The Registrar or the Graduate School will mail the diploma to a family member or, if preferred, provide it to the Dean or another appropriate University official for presentation at a private gathering of the University, college and/or school's choosing. Events and Outreach will assist in coordinating this setting and conferral.
2. A posthumous degree will be printed in the commencement program within the appropriate college section.
3. The statement "awarded posthumously" will be printed on the student's academic record, but not on the diploma.

Exceptions

In special circumstances, an exception to the Posthumous Degree Policy may be made by the University Chancellor. Such requests should follow the process outlined here in the policy.

Release of Student Information and Issuance of Transcripts

The University follows a policy for release of student information in compliance with federal regulations. More specific information may be obtained from the Registrar's Office or from the Graduate School.

A transcript of the student's official educational record is issued by the Registrar's Office under the following conditions: a transcript is sent, issued, or released only upon a student's request or explicit permission, except that such permission is not required when the University faculty and administrative officials or other educational institutions request transcripts for official purposes.

In addition, requests will be honored from a philanthropic organization financially supporting a student and from a recognized research organization conducting educational research provided the confidentiality of the transcript is protected. A transcript will be issued directly to a student upon request. The transcript will have the statement, Issued to the Student, stamped on its face. Transcripts will be sent to recipients other than the student as requested in writing by the student. A transcript fee of $5 will be payable in advance for every transcript the student requests. A transcript will not be sent, issued, or released if a student

owes money to the University as verified by the Bursar's office upon request. The transcript will have the statement, Issued to the Student, stamped on its face. Transcripts will be sent to recipients other than the student as requested in writing by the student. A transcript fee of $5 will be payable in advance for every transcript the student requests. A transcript will not be sent, issued, or released if a student owes money to the University as verified by the Bursar's office.

Policy

SIU Carbondale recognizes that many of its students use a name other than their legal name. As long as the use of a preferred name is not for the purpose of misrepresentation, the University acknowledges that a preferred name should be used whenever possible in the course of University business and education. Therefore, the University will permit any student who wishes to choose to identify themselves within the University's student information systems with a preferred name in addition to their legal name. Some records, such as paychecks, financial aid, or the official transcript, that require use of a legal name, will not change to preferred name. However, whenever possible, preferred name will be used **except in the following areas where the use of the legal name is necessitated by University business or legal requirement.**

Legal Name Used:

- Student Accounts (Bursar)
- Financial Aid
- Responses to enrollment or degree inquiries such as verification requests
- Official Transcript
- College of Education Teacher Certification Records (US Dept. of Education)

A preferred name is a first name (i.e., given name) that may be chosen to be used instead of legal first name. You may specify a preferred name within SalukiNet which will then replace your first (given) name in your directory profile and other records identified earlier. However, you must request that your preferred name once established also to be reflected on your Student ID card, SIUC e-mail address, and on your diploma when you are ready to graduate.

Preferred First Name Used:

- Class Roster
- Grade Reports
- Advisor/Advisee Lists
- Unofficial Transcripts
- Directory Listing (unless FERPA exclusion)
- SIUC Student ID Card (legal name discreetly presented on back)
- Diploma
- SIUC email account

SIU Carbondale is committed to maintaining an environment where inquiry and growth are supported by a shared sense of responsibility and respect toward one another and with this understanding in mind the University maintains the right to decline a preferred name when it is recognized to be offensive to the institution or inflammatory to the student body. Authority to terminate or deny the use of a preferred name resides with the Dean of Students who maintains and has oversight for the Student Conduct Code.

Financial Assistance

Financial assistance is available to qualified students in all fields of study in the form of: (1) graduate assistantships where one serves as a classroom teacher or assistant, as a research assistant, or as an administrative assistant, (2) fellowships or traineeships, (3) scholarships, and (4) loans. There are basic regulations that relate to these awards. Students should make application for the graduate assistantships, fellowships, or traineeships through the department to which they have been admitted. Information and application forms for the tuition scholarship program may be obtained from the Graduate School website.

Students should be sure that their applications for admission are complete, including the submission of required transcripts to the Graduate School to assure consideration for an award.

Graduate assistant appointments, graduate fellowships, and most traineeships include a full tuition scholarship when students have worked the minimum weeks required (13 fall/spring and 6 summer), but fees must be paid by the student. If a department has not established its own financial aid time limits, the following Graduate School time limits will apply: a student may receive no more than two calendar years of graduate-student support while a master's level student; a student may receive no more than four calendar years of graduate-student support while a doctoral-level student; students directly admitted into a doctoral program from their bachelor's degree can receive up to five calendar years of graduate student support. The maximum number of years of graduate-student support for students seeking any combination of graduate degrees is six calendar years of graduate-student support unless a specific exception based on the student's programmatic needs is granted by the graduate dean. These time limits apply to assistantships, fellowships, traineeships, and other similar awards and appointments administered by the University, regardless of source of funds. Students who are awarded graduate assistantships, fellowships, or traineeships, but who have not furnished official proof of their most recent degree to the Graduate School shall be considered to be on term appointment for one semester only. No one will be appointed to a second term until an official transcript indicating receipt of the degree is received in the Graduate School.

Acceptance of an offer of financial aid (such as a fellowship, traineeship, or assistantship) for the next academic year by an actual or prospective graduate student completes an agreement which both student and Graduate School expect to honor. In those instances in which the student accepts the offer before April 15 and subsequently desires to withdraw, the student may submit in writing a resignation of the appointment at any time through April 15. However, an acceptance given or left in force after April 15 commits the student not to accept another offer from another institution without first obtaining a written release from the institution to which a commitment has been made. Similarly, an offer by an institution after April 15 is conditional on presentation by the student of the written release from any previously accepted offer.

Graduate Assistantships

Graduate assistantships (GAs) are available in a variety of places across campus, from academic departments and research centers to administrative and service units. This type of appointment comprises the largest number of awards offered by the University. A graduate assistant must be a registered student in a degree program.

For these appointments, students should inquire directly to the chair of the department to which they have been admitted or to the appointing officer of a research center or administrative or service unit. Information about the criteria used to select GAs and to assign their responsibilities may be obtained by contacting the chair of the department, the administrator of a research or service unit, or the Graduate School.

The average GA appointment is 50% appointment (20 hours per week) and lasts for one academic year (9 months). There are also some 25% appointments requiring 10 hours per week. A student may hold two simultaneous quarter time (25%) appointments on campus without special approval. GA appointments may be either on an academic-pay basis or a fiscal pay basis.

During the fall and spring semesters, appointments of at least 25% qualify for a full tuition scholarship. GAs on a graduate assistantship contract during the summer semester qualify for a 9-hour tuition scholarship. The graduate assistantship appointment must be for at least 75% of the academic semesters (13 out of 17 weeks for the fall and spring semesters and six out of eight weeks for the summer semesters). If a student is appointed for less than a full academic term on a fiscal pay basis, the appointment will not carry a tuition scholarship. A GA holding an appointment for the full length of fall and spring semesters consecutively will be eligible for a nine hour non-working tuition scholarship for the summer session immediately following.

Salary schedules for graduate assistantships vary from unit to unit. The current graduate assistantship salary schedule can be viewed here. Generally, doctoral students are paid higher rates than master's students. Information about the specific conditions of the appointment should be directed to the department or unit making the appointment.

In the best interests of both the University and students, academic departments should monitor outside employment and intervene in those cases where outside employment results in problems. To this end, it is within the rights and responsibilities of a department: 1) to require that graduate assistants holding outside employment notify their department so that their performance can be monitored; 2) to make the relinquishing of outside employment a precondition for the continued enrollment of, and/

or availability of assistantships to, students whose academic or assistantship performance has been rated Unsatisfactory; and 3) to cancel or not renew the assistantship contracts of those students whose assistantship performance is rated Unsatisfactory and who also hold and do not discontinue outside employment. Graduate students can appeal departmental decisions regarding outside employment and academic/assistantship status through the University's standard routes of appeal or the grievance procedure in the GA United contract.

Dissertation Research Assistantship Awards

Dissertation research assistantship awards are designed for superior students who are in the dissertation preparation stage of their graduate education. Selection is based on a competition primarily considering the student's academic research and quality of the dissertation prospectus. The recipient of a dissertation research assistantship must be officially admitted to candidacy by the beginning of the award. Failure to be admitted to candidacy by the beginning of the award will result in the award's revocation. The award is for a maximum of 11 months and provides a monthly salary and a full tuition scholarship.

There is a service requirement, with the specific duties to be assigned by the chairperson of the department. The student must be enrolled for six graduate credit hours. The student holding such an award is expected to resign the award at the time the dissertation is submitted to the Graduate School if this comes prior to three weeks before the end of the time period for the award. Contact academic departments for application materials.

Graduate Internships

The graduate internship provides an educational experience for students at either the master's or doctoral level who wish or are required as a part of their program of studies to devote their primary effort toward applied activities in an academic program or a community-based agency or business under the direct supervision of a qualified representative of the host agency or business. Such internship activities may be unpaid or paid. Paid internships are externally sponsored and include the following categories: (a) paid through the University as graduate assistants; (b) paid by an agency or business as an employee; or (c) paid by an agency or business as a consultant. Requests for information should be directed to one's department.

Traineeships

Individual departments often are able to provide traineeships. Information about these awards should be directed to the department to which one has been admitted or is seeking admission.

Graduate Fellowships

The Graduate School offers a number of graduate fellowships. The number varies depending on the funds available for these awards each year. All awards of this type are highly competitive based upon scholarship and potential for success in graduate study.

Master's Fellowship Program

The Master's Fellowship is a one-time award at the master's degree level that is designed for those nominees who show the greatest promise for scholarly and professional achievement in their respective disciplines. The fellowship will be awarded for three semesters, fall, spring, and summer, for a total of eleven (11) months. The Master's Fellowship pays a monthly stipend (excluding Summer Intersession May 16 thru June 15) and provides a full tuition scholarship for fall, spring, and summer. Master's students are not allowed to hold more than two calendar years (24 months) of financial support of all types. Fellows may not hold jobs outside the University, since the purpose of the fellowship is to provide students with an opportunity to devote full time to their graduate studies and research rather than work part time at a job and part time at studies. Fellowship recipients will be assigned a ten-hour per week research assignment that will provide professional development opportunities for the student and be of value to the department. Fellowship recipients must remain on campus as fulfillment of their award, except with permission by the graduate dean.

Applications for these awards should be made by early January preceding the academic year for which the award is desired. Students should check with their academic departments for exact dates. Application

forms and information about the awards may be obtained by contacting the department to which one has been admitted or is seeking admission or on the Graduate School website.

Doctoral Fellowship Program

The Doctoral Fellowship is designed for those nominees who show the greatest promise for scholarly and professional achievement in their respective disciplines at the doctoral level. It is renewable for another year contingent upon eligibility. Fellowships will be awarded for three semesters, fall, spring, and summer for a total of eleven (11) months. The Doctoral Fellowship pays a monthly stipend (excluding Summer Intersession May 16 thru June 15) and provides a full tuition scholarship for fall, spring, and summer. Doctoral students have a limit of four calendar years (48 months) of financial support of all types. Doctoral students are also limited to two years of financial support of any combination of doctoral fellowship or dissertation research assistantship. Morris fellow holders are ineligible to apply for a Doctoral Fellowship award. Fellows may not hold jobs outside the University, since the purpose of the fellowship is to provide students with an opportunity to devote full time to their graduate studies and research rather than work part time at a job and part time at studies. Fellowship recipients will be assigned a ten-hour per week research assignment that will provide professional development opportunities for the student and be of value to the department. Fellowship recipients must remain on campus as fulfillment of their award except with permission by the graduate dean.

Applications for these awards should be made by early January preceding the academic year for which the award is desired. Students should check with their academic departments for exact dates. Application forms and information about the awards may be obtained by contacting the department to which one has been admitted or is seeking admission or on the Graduate School website.

Delyte and Dorothy Morris Doctoral Fellowship Program

The Delyte and Dorothy Morris doctoral fellowships have been established by Southern Illinois University Carbondale to honor a distinguished former president and his wife. During Dr. Morris' tenure as president (1949-71), the University grew to be a comprehensive research institution and established doctoral programs in 22 fields, now more than 30 fields.

The Morris Doctoral Fellowship is designed for those nominees who are new to Southern Illinois University Carbondale (SIUC). This fellowship is intended for applicants who possess exceptional credentials as indicated by high scholastic standing, outstanding recommendations, and evidence of significant potential for research and publication.

The Morris Doctoral Fellowship is a five-year financial support package. The Graduate School provides a 12 month 50% research fellowship award for the first three years and the department provides a 12 month 50% graduate assistantship for the last two years. The Morris Fellowship pays a monthly stipend amount that is above the Doctoral Fellowship stipend rate, with an annual $1,000 book/travel allowance for the first three years. A tuition scholarship will be awarded for fall, spring, and summer semesters for the term of the award. Fellows may not hold jobs outside the University, since the purpose of the fellowship is to provide students with an opportunity to devote full time to their graduate studies and research rather than work part time at a job and part time at studies. Fellowship recipients will be assigned a ten-hour per week research assignment that will provide professional development opportunities for the student and be of value to the department. Fellowship recipients must remain on campus as fulfillment of their award except with permission by the graduate dean.

The application deadline for these awards is March 1 preceding the academic year for which the award is desired. Students should check with their academic departments for exact dates. Application forms and information about the awards may be obtained by contacting the department to which one has been admitted or is seeking admission or on the Graduate School website.

Graduate Dean's Fellowship Program

The Graduate Dean's Fellowship is designed for traditionally underrepresented individuals who have overcome social, cultural, or economic conditions that have adversely affected their educational progress. Awards will be given to students who are qualified by the usual indicators of promise for success in graduate study.

The Graduate Dean's Fellowship is a two-year award, and it is given to fully admitted students. In Year One, the award is for a maximum of 11 months (fall, spring and summer) and provides a monthly salary and a full tuition scholarship. The student must enroll for a minimum of nine graduate credit hours for fall and spring semesters and three graduate credit hours for summer. The recipient will be assigned a ten hour per week research assignment that will provide professional development opportunities and will be of value to the department.

Year Two, the recipient will be on a nine month (fall and spring) 50% assistantship appointment with the department. The student is required to enroll for a minimum of nine graduate credit hours for fall and spring semesters, or optional summer enrollment of three graduate credit hours. A full tuition scholarship is awarded for fall, spring, and summer for both years. Recipients are responsible for fees. While on fellowship the award recipient will not hold any other employment inside or outside the University. Application requests for this award should be directed to the Graduate School or to the department. Application deadline is preceding the academic year for which the award is desired.

Proactive Recruitment of Multicultural Professionals for Tomorrow (PROMPT) Fellowship/Assistantship Program

The PROMPT Program (Proactive Recruitment of Multicultural Professionals for Tomorrow) is an initiative developed by the SIU Carbondale Graduate School to increase the number of individuals receiving advanced degrees in the United States from families which have traditionally not had access to the opportunities of higher education and who, through his or her life and/or cultural experiences, have unique and potentially positive contributions to make to the program, the discipline, and in the larger academic community. The Graduate School, in alliance with participating academic departments, will provide financial assistance packages to competitive, fully admitted students to pursue advanced study at SIU Carbondale through an assistantship appointment. The PROMPT Fellowship/Assistantship offers a two-year assistantship appointment with a monthly stipend and a full tuition scholarship. The student must commit 20 hours per week in teaching or research activities in the academic department during fall and spring semesters for both years. Recipients are responsible for fees. Application requests for this award should be directed to the Graduate School or to the department. Application deadline is preceding the academic year for which the award is desired.

Tuition Scholarships

Domestic Students

A limited number of tuition scholarships are awarded each semester to graduate students. This scholarship is a scholastic award. The number of Tuition Waiver Scholarships allocated to each college at SIU Carbondale will depend on the percentage of graduate student enrollment they contribute. After the number of scholarships per college is calculated, current GPA in program of study, if two semesters within the program have been completed, will be the determining factor for who receives the award. Otherwise, the decision will be based on GPA from most recent previous degree program. The award is for remission of tuition only; fees must be paid by the student. The award provides a full tuition scholarship and a tuition scholarship for up to nine (9) hours in the summer. This scholarship award will be posted to the student's Bursar account.

To be eligible, the student must be an active student, admitted to the Graduate School, and be in good academic standing in a graduate program at SIUC, and the student may not hold another University appointment which provides a tuition waiver scholarship (i.e. graduate assistantship, fellowship). Eligible applicants must have a minimum GPA of 3.0. Applicants need at least two full semesters of grades on their official or unofficial current transcript or the GPA will be based upon the previous completed degree. Tuition waiver scholarship recipients must enroll for a minimum of 9 graduate credit hours for fall or spring semesters (3 graduate credit hours in summer). Students may receive a tuition waiver scholarship for a maximum of three semesters during their enrollment at the University. Applicants must reapply each semester. *Note: Some programs (such as PA, Law, any web based/online programs etc.) are not eligible. Please check with your program for eligibility.

Deadline dates are as follows: April 15 for summer session, July 15 for fall semester, and November 15 for spring semester.

International Students

As an international student, you will need to contact the Center for International Education about applying for this scholarship. A limited number of tuition scholarships are available to international students who have completed at least one full year at SIUC. These awards are granted on a competitive basis, and the limited number means that many qualified students are unable to secure them. Applications are generally available at the end of each spring semester at Center for International Education, 425 Clock Tower Drive, Woody Hall. Guidelines are provided with the applications.

Financial Aid Office

Other forms of financial assistance including part-time employment on and off campus, cooperative work-study programs, summer employment, and student loan funds are available on the Financial Aid office website.

External Support for Graduate Study

Fellowships, grants-in-aid, scholarships, and other similar awards for the support of graduate students are available from many sources outside the University. Students are encouraged to apply for such awards. Information concerning appropriate external sources of support may be obtained from the Office of Sponsored Projects Administration or from department chairs or directors of graduate studies of the student's major department.

Faculty Appointments

No student in a graduate degree program shall be appointed to any full-time faculty position in the department (or equivalent unit) while enrolled in the unit as a student, with the sole exception that a student who has already been admitted to candidacy for the doctoral degree may be granted a term appointment as an instructor in the unit while so enrolled. Such a term appointment shall not be renewable beyond a period of one year.

Satisfactory Progress Policy for Graduate Students

Purpose

The Federal Government, the States, and Southern Illinois University Carbondale (SIUC) have invested large sums of money in order to provide financially needy students the opportunity to obtain a post-secondary education. Financial aid recipients are responsible for using the funds provided in an acceptable manner. Therefore, a student who wishes to benefit from the receipt of financial aid funds must maintain "satisfactory progress" as defined in this policy.

Authority

The U.S. Department of Education Student Financial Aid regulations (34 CFR 668) require that institutions of higher education establish and maintain reasonable standards to measure whether students applying for financial aid are making satisfactory academic progress toward degree completion. A student who does not meet these standards is not eligible to receive federally-funded financial aid. In most instances, SIU Carbondale shall make these standards applicable to all state and institutional aid programs for the purpose of maintaining a consistent and reasonable financial aid policy. However, nothing in this policy shall be construed as a reduction of external requirements by other federal, state, public, or private agencies when they award or control financial aid. **Non declared graduate students are only eligible to be considered for a Federal Direct Stafford Loan during one twelve-month period while preparing for admission into a graduate degree program.**

Satisfactory Progress Standards

SIU Carbondale requires that a student be making "satisfactory progress" toward a degree if he or she wishes to receive financial aid funds. A graduate student is making "satisfactory progress" toward a degree if successfully meeting each of three academic standards:

1. **Minimum SIU Carbondale Percentage of the Cumulative Attempted Credit Hours that must be Completed:** A graduate student is expected to have completed a minimum of 67% of the cumulative attempted credit hours at SIU Carbondale.
2. **Maximum Credit Hours Attempted:** A graduate student enrolled in a program leading to a master's degree is expected to complete the degree before accumulating seventy five (75) credit hours attempted, including both SIU Carbondale and accepted transfer credit hours. A graduate student enrolled in a program leading to a Master's of Fine Arts Degree is expected to complete the degree before accumulating ninety (90) credit hours attempted, including both SIU Carbondale and accepted transfer credit hours. A graduate student enrolled in a program leading to a Doctoral Degree is expected to complete the degree before accumulating one hundred (100) credit hours attempted, including both SIU Carbondale and accepted transfer credit hours.
3. **Minimum Grade Point Average:** A graduate student must maintain a cumulative grade point average of 3.0 at the end of each spring semester and be in compliance with the University's policy concerning academic standing, grades, and grade point average as defined under the topic "Retention" and all other provisions in the current Graduate Catalog. A graduate student who is academically suspended from the Graduate School is not making satisfactory progress.

The academic records of all aid recipients will be reviewed annually at the end of the spring semester to determine continued aid eligibility. A graduate student who does not meet any one of the three standards set forth above is not maintaining "satisfactory progress" toward a degree and will be determined ineligible for financial aid.

Notification of Status

It shall be the responsibility of the Graduate School to publish this policy and to notify by letter any graduate student who is no longer eligible to receive financial aid funds. Said notice shall be addressed to the student's most current permanent address on file with the University. IT SHALL BE THE RESPONSIBILITY OF THE STUDENT TO INFORM THE UNIVERSITY OF A CORRECT PERMANENT ADDRESS AT ALL TIMES.

Reinstatement

Students will have their eligibility to receive financial aid reinstated after having reached the level of satisfactory progress required of them by this policy. They may achieve this status by receiving passing grades for courses previously incomplete or incorrectly recorded as withdrawals or failing grades and/or earning sufficiently more than the required percentage of completed hours.

Appeals

Any student shall have the opportunity to appeal, in writing, to explain "mitigating circumstances". The appeal should be sent to the Graduate School, with endorsement of the student's academic program, within 30 days of the notice of termination. The Graduate School will review the "mitigating circumstances" documented in the appeal and provide a written decision within 20 days after the receipt of the appeal. The Graduate School will provide written notification to the Financial Aid Office concerning all graduate students who have been granted an exception for mitigating circumstances.

Definitions

Attempted credit hours shall be defined as the total SIUC hours for which the student has been enrolled.

Maximum credit hours attempted shall be defined as the total SIUC hours for which the student has been enrolled at SIUC and the total accepted transfer credit hours.

Credit hours completed shall be defined as the total number of academic credit hours which a student has completed. Failing grades, incompletes, withdrawals, audits, and remedial courses that do not count toward a degree shall not be considered as credit hours completed. Deferred grades count as credit hours completed.

Eligible students shall be defined as those students who are admitted to the Graduate School and to a specific degree program. All other students are not eligible for financial aid except for non declared

graduate students who are only eligible to be considered for a Federal Direct Stafford Loan during one twelve-month period while preparing for admission into a graduate degree program.

Mitigating circumstances are the reasons that explain why the student has not met the Satisfactory Progress standards and can include medical reasons, family crisis, personal problems, or other circumstances which adversely affected student performance.

Graduate shall be defined as a student who is seeking a master's or a doctorate degree.

Student Responsibility

Students are responsible for knowing degree requirements and enrolling in courses that will enable them to complete their degree programs. It is also their responsibility to know the University regulations for the standard of work required to continue in the Graduate School. For information, consult both the general and specific degree requirements enclosed in this publication. Additional details about requirements and procedures are available from your graduate advisor or the Graduate School.

Human Subjects

Before the start of any research involving human subjects, the research project must be reviewed by the SIU Carbondale Institutional Review Board (IRB). If your master's or doctoral project will involve any human subjects work or accessing confidential databases, you must submit an application to the committee prior to the start of the research. Call 618/453-4534 for information or visit their website at orc.siu.edu/human-subjects-research/. When you submit your master's thesis/research paper or doctoral dissertation to the Graduate School, you must include documentation from the IRB that the project has been reviewed and the outcome of that review. The committee cannot retroactively approve research that has already begun or been completed. If the correct documentation is not included, your master's research paper/thesis or doctoral dissertation cannot be accepted by the Graduate School.

Animal Care

The SIU Carbondale Institutional Animal Care and Use Committee (IACUC) was formed to establish and enforce ethical, humane guidelines for the use of live animals in research at the University. The committee reviews all protocols involving the use of vertebrate animals and cephalopods for training, research, and testing to assure compliance with humane standards and federal regulations. Researchers with projects involving animals must submit a completed Animal Use Protocol form for the committee's review. Graduate students may not be listed as the principal investigator on an IACUC protocol. Approval of the protocol is required before the animals can be used for training, research, or testing purposes. The Laboratory Animal Program is accredited by the Association for Assessment and Accreditation of Laboratory Animal Care International. For more information, contact the Institutional Animal Care and Use Committee at 618/453-4533 or the Laboratory Animal Program at 618/536-2348 or visit the website at https://orc.siu.edu/animal-care/.

Other Research Compliances Applicable to Research Include:

-Hazardous Materials and Research Utilizing Controlled Substances
-Recombinant or Synthetic Nucleic Acids, Dual Use Research of Concern, and Select Agents
-Radiological Safety
-Stem Cell Research
-Responsible Conduct of Research
Students should discuss these compliances with their advisor. Additional information is available at https://orc.siu.edu/. Contact the Center for Environmental Health and Safety at 618/453-7180 or the Office of Research Compliance at 618/453-4530.

Student Rights and Responsibilities

The Office of Student Rights and Responsibilities (SRR) serves as a resource for the University community in understanding and applying the Student Conduct Code. The office strives to enhance a sense of community, accountability and responsibility. This is accomplished through educational outreach, one-on-one interactions with students and the enforcement of educationally based sanctions to address violations of the Student Conduct Code and other University policies. SRR works to balance the individual needs of each student with the needs of the academic community to find positive outcomes for

all involved parties. If you have questions about the Student Conduct Code, your rights as a student, or if you believe a student has violated the Student Conduct Code or another policy, please call our office at 618/536-2338 or visit us online at srr.siu.edu. All students are responsible for knowing and following the Student Conduct Code which is available on the SRR website.

Academic Resources

Library Affairs

Morris Library is named after the late Delyte W. Morris, University President from 1948 to 1970. Students, faculty, and staff of the University benefit from unlimited access to millions of dollars of research materials carefully selected and maintained by professional library faculty and staff through lib.siu.edu. The catalog, I-Share@Morris Library, is the gateway to identify and request items held in Morris Library, as well as from over 100 other academic libraries in Illinois. Items requested from other libraries arrive within a few days through I-Share or Interlibrary Loan. Online resources include: academic journals, e-books (now over 249,000 in number), full-text databases, and freely-available resources. The building houses nearly three and a half million volumes, three and a half million microforms, and 49,990 currently received periodicals and serials. The physical collections also include: government documents, maps, films, DVDs, and sound recordings. Morris Library is a selective U.S. Federal Depository Library and an Illinois State Depository. With the exception of materials in the Special Collections Research Center, library materials are arranged on open shelves for convenient browsing.

Over 300 computers distributed throughout the building provide access to the catalog and to all of the online resources while patrons are in the Morris Library building. Throughout the building, patrons find wireless access, study tables with integrated power outlets, comfortable seating, and group study rooms of various sizes and configurations. Students may reserve group study rooms online. The basement and 5th floors are reserved for silent study. Other frequently-used services available in the building include: copiers, scanners, printers, Debit Dawg machine, fax machine, vending machines, and free electronic device charging stations.

Morris Library has been transformed into a spectacular center of academic, social, and aesthetic activity for the University and local community during the last decade. In addition to abundant natural light, a variety of seating arrangements cater to every patron's study preference. Visitors enjoy intellectual, historical, cultural, and artistic events in the 200-seat Guyon Auditorium, Hall of Presidents and Chancellors, and two Rotundas. Art and exhibits adorn many areas of the building with receptions and lectures announced frequently.

Delyte's Cafe serves coffee and other beverages as well as yogurt, soup, sandwiches, salads, baked goods, and snacks from early morning into the evening. During the academic year, the building is open to all, Sundays from 1 p.m. - Midnight, Mondays - Thursdays 7:30 a.m. - Midnight, Fridays 7:30 a.m. - 9 p.m. and Saturday 10 a.m. - 6 p.m.

Library services provided in Morris Library include:

- The Information Desk invites patrons to ask questions, obtain assistance with academic, professional, and personal research, and get technology help (SalukiTech). The Information Desk and the "Ask a Librarian" service are staffed by library faculty and staff who are eager to help students, faculty, staff, and others in fulfilling their research needs. Consultations, instructional sessions, online tutorials, videos, and guides are provided free of charge on a continuous basis.
- Disability Support Services features software, hardware, and assistance for those who need adaptive technologies.
- Circulation Services checks out library materials, course reserves, interlibrary loan items, laptops, adaptors, and other devices.
- Instructional Materials Center (IMC) contains a collection of PreK-12 materials designed to provide students, teachers, and school administrators both on-campus and in southern Illinois with sample teaching materials that can be used in the classroom or in evaluating curricular materials.
- Geospatial Resources includes the Map Library and Geographic Information Services (GIS). The Map Library houses more than a quarter of a million maps and nearly 100,000 aerial photographs. GIS assists patrons in locating existing digital maps or in creating customized maps.

The Special Collections Research Center (SCRC) is located off the Hall of Presidents and Chancellors. SCRC houses unique materials such as rare books, manuscript collections, and the University archives. It contains significant research collections in American Philosophy, First Amendment Freedoms, American

and British twentieth century literature and theatre, a Political Papers archive, and the history of southern Illinois.

In addition to comprehensive library services, the Morris Library building is home to Math Central (classrooms and lab), Learning Support Services (Tutoring Center, Testing Services), Center for Teaching Excellence, the University Honors Program, the Writing Center, and Saluki Tech (walkup technology support and personal device configuration).

Information Technology

The Office of Information Technology (OIT) supports the University mission by providing students, faculty, and staff with reliable access to the technology that they need to succeed. OIT Technology Services supports a wide range of technology resources including: email and network ID set up; phone, email, and walk-in support via SalukiTech; on-campus device repair; desktop support; student printing services for convenient printing across campus; and site-licensed software for departmental and personal use. Technology Services also operates five general access Computer Learning Centers (CLC labs) with computers running Windows, Mac, and UNIX operating systems. These computer classrooms are available for instruction that requires the use of technology.

Research Computing supports SIU Carbondale researchers and graduate students doing research with access to the University's 34.7 Teraflop supercomputer. Free access to this advanced computing cluster is requested through OIT. OIT Networking supports campus Wi-Fi and ethernet access in the student residence halls. Networking also provides network-based information resources, as well as Internet2 connectivity, to all main campus buildings. SIU Carbondale's network is connected through three independent Internet Service Providers (ISP).

Client Relations and Communications, a new unit in OIT, provides outreach to the campus from OIT and keeps the campus informed about OIT services and initiatives. The CR also takes in information from constituents and shares campus needs and desires with OIT. Networking supports campus telephone services and all network infrastructure on campus. OIT Enterprise Applications controls records management services, administrative information systems, student information systems, and all major implementations on campus. One of the most valuable tools Enterprise Applications offers is SalukiNet. This portal connects students to their SIUC personal records: admissions, housing, financial aid, grades, transcripts, account information, student payroll, and more. A second tool of great interest to students is Degree Works-- a software program that allows students to review requirements for their majors to keep themselves on track to complete their degrees on time. OIT Systems is the backbone of University computing. Systems houses critical, enterprisewide technology, including all of the computers needed to run the business of the University. Systems maintains redundant systems on and off campus to ensure that OIT can back up and restore information in the event of a catastrophic system failure. OIT's Project Management Office works with campus constituents to assess, plan, organize, and push technology-heavy projects forward. Detailed information about OIT services can be found on our website.

Research and Service Centers

Advanced Energy Institute

The Advanced Energy Institute (AEI) is a facilitator of leading edge energy research teaching and service on the SIU Carbondale campus.

AEI, through the Energy Boost program funded in 2015, supports energy-related research grants, scholarships, educational programs, and graduate assistantships on the Carbondale campus.

AEI provides scholarships for eligible students in these programs. AEI provides seed grants for faculty research, student grants for undergraduate research projects, and funding for the real-world application of cutting edge energy concepts. Ever at the forefront of efforts for safer, cleaner, and more efficient energy, SIU Carbondale researchers are making discoveries in areas such as energy storage, ultra-low emission energy systems, energy public policy, carbon dioxide capture, utilization and sequestration, environmental restoration, biofuels, advanced energy materials, and energy systems management. Faculty and students from fields including engineering and technology, physical sciences, social sciences, business, education, law, and agriculture have contributed to the University's international reputation in advanced energy research and scholarship.

More information can be found by exploring energy.siu.edu, emailing energy@siu.edu, or by calling (618) 536-5521.

Center for Archaeological Investigations

The Center for Archaeological Investigations engages in research in the American Midwest and Southeast, and Mexico. Funding is provided by state and federal agencies, and private institutions. The Center also conducts archaeological research for firms and government agencies that are required to comply with environmental and antiquities laws. The Center supports an annual field school with the Department of Anthropology and provides thesis/dissertation data and research opportunities for students. It also curates large collections of archaeological materials, representing more than 60 years of research in the American Midwest and Southeast.

Center for Autism Spectrum Disorders

The Center for Autism Spectrum Disorders (CASD) is a research, training, and service program within the Rehabilitation Institute and a partner in the Autism Program of Illinois. The CASD provides interdisciplinary training for students enrolled in various programs at SIU Carbondale, including Communication Disorders and Sciences, Behavior Analysis and Therapy, and Psychology. The CASD also collaborates with several area service providers, such as local special education districts, Early Intervention agencies, as well as state agencies, to help them provide best practice treatment. Diagnostic and treatment planning assessments are conducted to determine the presence of ASD and functional objectives in therapy. CASD faculty and students are engaged in cutting edge research in areas related to ASD, such as Acceptance and Commitment Therapy and Relational Frame Theory in both early learners and adolescents and adults. Additionally, the researchers focus on staff training, and early identification.

Center for Delta Studies

The Center for Delta Studies builds linkages among scholars in the SIU system, universities in the region encompassed by the Delta Regional Authority, and between researchers and the larger public. Its mission is to promote groundbreaking research that will contribute innovative solutions to the enduring problems of poverty and the associated human and ecological struggles that are endemic to the Delta region.

Center for Ecology

The purpose of the Center for Ecology is to provide an umbrella for ecological research, teaching, and training at SIU Carbondale. More than 50 faculty members and numerous students and staff from several departments in the Colleges of Agricultural, Life, and Physical Sciences; Engineering, Computing, Technology, and Mathematics; and Liberal Arts participate in this interdisciplinary program. Independent, cooperative, and collaborative research conducted by Center faculty takes advantage of the exceptional range of natural resources of the region across a variety of ecosystems in Illinois, throughout the United States, and around the world. The Center offers a variety of resources and opportunities for graduate and undergraduate students at SIU Carbondale and beyond, including internships, a state of the art analytical laboratory, an annual student research symposium, and the 1,400 acre Middle Mississippi River Wetland Field Station. Doctoral students pursuing ecological studies at SIU Carbondale can earn a Specialization in Ecology, which appears on the transcript, through the Center.

Center for Environmental Health and Safety

This center is responsible for the facilitating and monitoring of campus-wide compliance to policies, guidelines, and regulations with respect to environmental and occupational health and safety, specifically those of the University, Environmental Protection Agency, Illinois Emergency Management Agency, Division of Nuclear Safety, Occupational Safety and Health Administration, National Institutes of Health, Office of the Illinois State Fire Marshal, and other federal and state agencies as applicable.

Illinois Soybean Center

Established in 1997, the Illinois Soybean Center focuses on developing information and technologies that enhance soybean production in Illinois and the North Central region, increase soybean utilization by the global community, contribute to the base of scientific knowledge, and educate human capital in the various attributes and applications of soybean. SIU Carbondale faculty members in the College of Agricultural, Life, and Physical Sciences collaborate with those in the School of Medicine, along

with university colleagues throughout the nation, to implement interdisciplinary research, education, and outreach programs on soybeans. The Center addresses issues related to all aspects of soybean production, utilization and policy, including breeding and genetics, biotechnology, crop protection, human nutrition and food, animal nutrition, marketing, and consumer acceptance.

Center for Workforce Development

The Center for Workforce Development was established to create a research, education, and training group that provides students and faculty with the opportunity to collaborate on research and development, education and training, and information and product dissemination. The objectives of the Center emphasize:

1. Research and Development—addressing the broad array of issues affecting the nature of the workforce and workplace settings.
2. Education and Training—addressing development and delivery of customized workforce education and training programs/courses in collaboration with agencies and organizations in the public and private sectors.
3. Information and Product Dissemination—addressing the need for dissemination of curriculum and instructional resources useful for promoting work-related education and training.

The Center for Workforce Development will serve as a broker in the exchange and sharing of information and higher education resources associated with the nature of the workplace and workforce. Further, the Center will act as a catalyst in bringing together leaders from business, research, education, and government to interact and work together to formulate public policy associated with workforce development.

Dale and Deborah Smith Center for Alzheimer's Research and Treatment

The School of Medicine's center in Springfield has research projects that cover a wide range of basic science and clinical studies relating to normal aging, memory impairment, Alzheimer's disease, Parkinson's disease, tremor, and functional MRI. The Center also maintains a brain bank of human brain tissue. The web address is: siumed.edu/alz.

The Nurse Aide Testing Project

The Nurse Aide Testing Project is a collaborative, multi-faceted research, education, and innovation project that utilizes the latest technologies to provide training, certification testing, curriculum development, and content delivery to a variety of programs across the SIU Carbondale campus, the state of Illinois, and the United States. The project was initiated to create and administer the certification exam for Nursing Assistants for the state of Illinois and continues to certify tens of thousands of individuals annually for employment eligibility. This project has seen significant growth over the years, and now it has grown to encompass several other fields of research to include gamification to better engage students, a motion capture laboratory for training development, online course development, specialized video techniques to enhance content delivery, and online training development. The project also includes a Workforce Education Research and Developmental Laboratory whose mission is to enhance the current and future effectiveness of organizations by maximizing the value of human capital through innovative training techniques and staff development.

Center for Fisheries, Aquaculture, and Aquatic Sciences

Graduate research in fisheries, aquaculture, and aquatic ecology is conducted through the Center for Fisheries, Aquaculture, and Aquatic Sciences. Graduate study in fisheries, culminating in the Master of Science or Doctor of Philosophy degree, is offered in the Department of Zoology. In addition to a wide variety of support courses, nine fisheries courses are taught. Research activities include: studies in fish management, aquatic conservation, genomics, aquatic toxicology, and aquaculture. Emphases include: warmwater, coolwater, and coldwater fishes native to Illinois. There are also opportunities to work with exotic species of fishes and shellfishes, both freshwater and marine. Some of the areas of research stressed are: trophic ecology, water quality, large river ecology, aquaculture, conservation biology, invasive species, nutrition, fish physiology, fish genetics, utilization of nursery areas, ecology

of larval fishes, age and growth studies, stable isotopes, population dynamics, and aquatic toxicology. Facilities in the Center for Fisheries, Aquaculture, and Aquatic Sciences include: offices, well equipped laboratories, a computing faculty, vessels for work on rivers and lakes, aquarium rooms, culture ponds, a greenhouse for hydroponic and recirculating water system studies, the new state of the art Aquatic Research Laboratory and Saluki Aquarium, an 8,300 square-foot wet-laboratory building and a 90-pond research/demonstration facility.

The Materials Technology Center (MTC)

The Materials Technology Center was established in 1983 as a result of a high-technology thrust by the state of Illinois. Charged with stimulating materials-related research on the campus of SIU Carbondale, the center accomplishes this mission through initiating interdisciplinary research in the College of Engineering, Computing, Technology, and Mathematics, and College of Agricultural, Life, and Physical Sciences disseminating results to researchers in academia, industry, and national laboratories, and organizing Materials seminars and discussion groups. The center encourages research in new areas by administering a competitive grant program that funds start-up projects for faculty entering new areas of materials research and provides technical, administrative, and financial support to start-up and established research programs.

A historical strength of the center has been research in the area of carbon-carbon composites, but the center has expanded its leadership and expertise in carbon science to include studies in areas such as carbon nanotubes and development of carbonmaterial precursors. New areas of emphasis include: Materials for Energy Storage Technology, Materials Design by Iterative Computation, Synthesis and Characterization, and Materials for Sensors and Biosensors. Other research programs include: catalysis, magnetic materials, materials for alternative and traditional energy, polymers, chemical vapor deposition and infiltration, and plasma induced deposition techniques. Under the guidance of established experts, students associated with MTC receive hands-on training and valuable experience. The total program of the center offers an opportunity for students at all levels of experience to train in the fields of Materials Science and Engineering.

Meyers Institute for Interdisciplinary Research in Organic and Medicinal Chemistry

The Meyers Institute, founded in 2000 through an endowment provided by Dr. Cal Y. Meyers, Distinguished Professor Emeritus, advances knowledge in fundamental and applied organic and medicinal chemistry. Institute personnel include members of the College of Agricultural, Life, and Physical Sciences, and School of Medicine, among others. In conjunction mainly with the Department of Chemistry and Biochemistry, undergraduate and graduate students and postdoctoral fellows are afforded stipends to participate in advanced research projects. As part of its activities, the Institute hosts bi-annual symposia.

Paul Simon Public Policy Institute

The Paul Simon Public Policy Institute (also called the Paul Simon Institute) is a resource for SIU Carbondale students, the campus community, the region, and the State of Illinois. The Institute's mission focuses on fostering ethical conduct in government, opportunity and fair treatment for people in America and throughout the world, and promoting responsible citizenship for all Americans--but particularly for young Americans. The Institute executes its mission by: Conducting nationally known public opinion polls (The Simon Institute Poll™ and The Southern Illinois Poll™) to inform decision makers and citizens; Publishing analysis of public policy issues in its occasional papers (The Simon Review); Providing and supervising paid internships, graduate assistantships and fellowships for undergraduate and graduate students in Carbondale, Springfield and elsewhere; hosting noted leaders in public policy, politics, journalism, and other fields to campus for speeches, conferences, and hosting leadership and civic education opportunities for high school students.

The Institute's popular "Pizza and Politics" programs are geared to both undergraduate and graduate students of all majors to interact with Institute guests. Other Institute undergraduate opportunities include the Vince Demuzio Internship program where juniors and seniors learn about public service during paid internships in local governmental offices. Undergraduate students can learn about public service while working paid internships in Springfield state government offices through the Gene Callahan Internship and the Alexander Lane Internship. The Institute has also sponsored learning opportunities for students in Washington D.C. and Pittsburgh, PA.

Paul Simon established the Public Policy Institute in 1997 upon his retirement from more than 40 years in elected office. Simon was a state Representative, state Senator, and Illinois Lieutenant Governor before being elected to five terms in the U.S. House of Representatives beginning in 1974 and then serving two terms as U.S. Senator. Additionally, he was a candidate for the Democratic nomination for President of the United States in 1988 and a political mentor to many, including President Barack Obama. He remains one of Illinois' most revered political leaders and enjoyed broad bipartisan support from voters most of his career.

After Sen. Simon's passing in 2003, Mike Lawrence, who had been press secretary and senior adviser to Illinois Governor Jim Edgar in the 1990s and who served as the Institute's associate director since its inception, was named director. He retired in 2008. David Yepsen, a political columnist at the Des Moines Register for more than 30 years, was named director in 2009. He retired in 2016. Jak Tichenor was named interim director on November 1, 2016. Jak is a veteran broadcast journalist who spent the majority of his reporting career at WSIU Public Television in Carbondale. Tichenor is the executive producer and host of the statewide Illinois Lawmakers series on the Illinois General Assembly for Illinois Public Television and has served as Statehouse Correspondent for the series since 1991.

Fermentation Science Institute

Established in 2014, the Fermentation Science Institute is a campus resource that supports educational, research, and outreach activities involving various aspects of fermentation. Topics include the production and analysis of alcoholic beverages and fermented foods, as well as the production of fuels, pharmaceuticals, and biomaterials. As an interdisciplinary initiative involving various departments from multiple colleges, the Institute coordinates and supports collaborative research projects and outreach programs providing advanced educational and training opportunities. The Institute also houses and manages the Bachelor of Science degree in Fermentation Science (see undergraduate catalog). Located in newly renovated space in the McLafferty Annex, the Institute provides state-of-the-art teaching and research facilities and operates a fee-for-service laboratory providing third-party testing of wine, beer, and distilled spirits.

Safety Center

The Safety Center was established in 1960 and is affiliated with the Department of Public Health and Recreation Professions. The Center's research activities, carried out by faculty, staff, and graduate students, focus on injury control and prevention, as well as traffic safety. The Center also offers training programs in motorcycle rider safety, emergency/evasive driving/protective services, and child and occupant safety protection. It provides consulting services to businesses, agencies, and the general public. The Center hosts meetings, courses, seminars, and conferences on a wide range of injury prevention and health promotion topics. The Center's programming and research activity can be viewed at the Department's website.

STEM Education Research Center

The STEM Education Research Center (SERC), a research and public service unit of Science Technology, Engineering, and Mathematics (STEM), was created by SIU Carbondale with the approval of the Illinois Board of Higher Education on July 1, 2014. The SERC at SIU Carbondale seeks to organize and sustain a community of faculty and staff from across the University to collaboratively prepare the next generation of STEM educators, researchers, and professionals. The SERC seeks to advance STEM literacy and address critical issues in STEM education at local, state, and national levels through interdisciplinary and integrative strategies in research, education, and service. The SERC supports existing programs and develops new grant initiatives to provide professional development for PreK-12 educators, advance research on STEM education, and enhance the undergraduate STEM experience.

At the national level, there is a clarion call for an increase in college graduates in STEM programs to address the critical need in the very industries that will be at the center of the continuing transformation of the world economy. National reports indicate the danger of the U.S. economy losing ground internationally unless our educational system becomes more effective at producing students interested in and capable of the rigors of the educational programs in the STEM disciplines. In addition, once these students enter university-level STEM programs, they must be greeted with effective state-of-the-art STEM content and pedagogy.

At the state and local level, one of the key components of an increase in the effectiveness of STEM education is the implementation of the Common Core State Standards (corestandards.org) and the Next Generation Science Standards (NGSS; nextgenscience.org) at the state level. While adopting these national standards is voluntary at the state level, Illinois has agreed to implement the Common Core and is an active lead state partner in the NGSS efforts. The implications of these decisions are just beginning to emerge and will completely transform the content and pedagogy employed in K-12 classrooms across the state. In addition, new highstakes assessments have been prepared that have replaced the Prairie State Exam at the high school level. As the state research University in the Southern Illinois region, SIU Carbondale has an obligation to provide as much support as possible during this important transition period to our local school districts.

The structure and programs of the STEM Education Research Center (SERC) correspond to the primary areas of interest: K-12 STEM education, undergraduate STEM education, and graduate STEM education. As indicated above, K-12 STEM education is in a period of rapid transformation. One area of emphasis of the Center will be coordination of the existing programs already implemented at SIU Carbondale.

Center for Wildlife Sustainability Research

Since its founding in 1950, the Center for Wildlife Sustainability Research (formally known as the Cooperative Wildlife Research Laboratory) has achieved a distinguished record training graduate students in basic and applied principles of ecology and wildlife biology. It is a comprehensive program that is recognized among the premier wildlife research units in the nation. Independent, cooperative, and collaborative research supported by state and federal agencies, industry, and foundations leads to better understanding of the sustainable management of natural resources. Areas of acknowledged center expertise have included: the biology and ecology of a variety of terrestrial and semi-aquatic wildlife species; sustainable land use and conservation of wildlife resources; wildlife and environmental toxicology; waterfowl/wetland ecology; sustainable management of grasslands and grassland wildlife; thermal ecology; landscape ecology; large ungulate grazing ecology and distribution; and the epizootiology of zoonotic and other diseases in wildlife. Recognizing the conservation of many wildlife populations requires support from both public and private landowners, the Center for Wildlife Sustainability Research has pioneered sustainable land use practices such as the reclamation and enhancement of mined lands for the benefit of various wildlife resources. In an effort to better understand how a more sustainable use of the landscape can provide the goods and services humans require while simultaneously supporting wildlife populations, in addition to the more traditional wildlife population and habitat research, current and future research will involve a collaborative effort between core and affiliated personnel with varying expertise in academic fields such as: Zoology, Plant Biology, Forestry, STEM education, Social Sciences, Agriculture, Geography, Environmental Engineering, Economics, and many others. These efforts will provide unique research and training opportunities in support of sustainable and wildlife friendly conservation, outdoor recreation, forestry, agriculture, and clean energy development in a changing climate. More than 30 projects directed by laboratory staff currently afford broad and varied research opportunities to graduate fellows and research assistants, as well as undergraduate students. These activities exceed $1,000,000 each year in contracts and grants, resulting in significant contribution to academic needs of students and staff and requests for service by state, federal, and private agencies.

Research Support Facilities

The services of several centralized research support facilities are available to faculty, staff, and students at minimal cost. IMAGE (Integrated Microscopy and Graphics Expertise) provides training, technical service, and research in electron, atomic-force, and light microscopy. It also offers technical assistance to those in need of scientific photography or computer-graphics illustration as part of their research.
The Mass Spectrometry Facility (housed within the Chemistry Department but available to researchers across campus) has a variety of instruments, and offers qualitative and quantitative analysis services.
The Laboratory Animal Program, a fully accredited facility, is directed by a veterinarian with specialty training in laboratory animal medicine to ensure proper and humane care of research animals.
The Aquatic Research Laboratory and Saluki Aquarium are used to raise both marine and freshwater animals for ecology, aquaculture, and conservation research and student training.

Office of Sponsored Projects Administration

The Office of Sponsored Projects Administration (OSPA) facilitates research and sponsored project activities on campus, which includes offering a number of services for faculty, staff, and students who

wish to submit grant applications to funding agencies. Graduate students seeking funding for their research projects (dissertation support, research fellowships, travel grants, etc.) should start with OSPA's website, which offers access to a searchable grants database (Grant Forward), includes links to several funding agencies, and provides other grant-related material.

Many of the necessary forms and data required to complete grant proposals are easily available on the website. OSPA staff are available for assistance in proposal preparation and submission. OSPA also works with faculty and student researchers throughout the award process including negotiating grant/ contract award agreements, accessing the funding, and fiscal reporting.

One of OSPA's responsibilities is to ensure that research conducted at SIU Carbondale complies with all applicable federal and funding-agency regulations. Funded or unfunded research that will involve any of the following must have institutional approval before the research project begins: human subjects (including administering questionnaires, conducting interviews, or accessing confidential databases), live vertebrate animals, and hazardous or regulated agents including but not limited to: radiological materials, controlled chemicals, or biological materials such as recombinant nucleic acids. Students should contact OSPA 618/453-4540 or their graduate advisor for guidance.

Associations

Consortium for Advanced Radiation Sources

The University is a member of the Consortium for Advanced Radiation Sources (CARS), a research consortium composed of Northern Illinois University, the University of Illinois at Chicago, the University of Chicago, Southern Illinois University Carbondale, and the Australian Nuclear Science and Technology Organization. Membership with CARS provides access to the facilities being developed at the Advanced Photon Source sited in Illinois and facilities at other federal laboratories.

Council of Graduate Schools of the United States and Canada

The University is a regular member of the Council of Graduate Schools (CGS) of the United States and Canada. CGS was established to provide graduate schools with both a comprehensive and widely representative organization through which they can counsel and act together.

Council on Research Policy and Graduate Education (CRPGE) in the Association of Public and Land-Grant Universities (APLU)

The Graduate School is an active member of this major research and graduate educational council of the largest association of public research universities in the United States. Website: aplu.org.

Oak Ridge Associated Universities

Since 1980, students and faculty of Southern Illinois University Carbondale have benefited from its membership in Oak Ridge Associated Universities (ORAU). ORAU is a consortium of 98 colleges and universities and a contractor for the U.S. Department of Energy (DOE) located in Oak Ridge, Tennessee. ORAU works with its member institutions to help their students and faculty gain access to federal research facilities throughout the country; to keep its members informed about opportunities for fellowship, scholarship, and research appointments; and to organize research alliances among its members.

Through the Oak Ridge Institute for Science and Education (ORISE), the DOE facility that ORAU operates, undergraduates, graduates, postgraduates, as well as faculty enjoy access to a multitude of opportunities for study and research. Students can participate in programs covering a wide variety of disciplines including: business, earth sciences, epidemiology, engineering, physics, geological sciences, pharmacology, ocean sciences, biomedical sciences, nuclear chemistry, and mathematics. Appointment and program length range from one month to four years. Many of these programs are especially designed to increase the numbers of underrepresented minority students pursuing degrees in science- and engineering-related disciplines. A comprehensive listing of these programs and other opportunities, their disciplines, and details on locations and benefits can be found in the ORISE Catalog of Education and Training Programs.

ORAU's Office of Partnership Development seeks opportunities for partnerships and alliances among ORAU's members, private industry, and major federal facilities. Activities include faculty development

programs such as: the Ralph E. Powe Junior Faculty Enhancement Awards, the Visiting Industrial Scholars Program, consortium research funding initiatives, faculty research, and support programs as well as services to chief research officers.

The Science Coalition

The Science Coalition is a nonprofit, nonpartisan organization of more than 50 of the nation's leading public and private research universities. It is dedicated to sustaining the federal government's investment in basic scientific research as a means to stimulate the economy, spur innovation and drive America's global competitiveness.

Facilities and Services

Career Development Center

The Career Development Center offers a wide variety of services to both undergraduate and graduate students as well as alumni. From helping students research careers in their field of study to helping them connect with potential employers, the Career Development Center is here to assist students and alumni with their career and professional development needs. Services include: career research, resume critiques, curriculum vitae critiques, cover letter critiques, interview preparation, mock interviews, alumni mentor program, salary negotiation, job search assistance, and on-campus interviews. They are located in the Student Services Building, Suite 110. Appointments can be scheduled by calling 618/453-2391.

University Housing

Many SIU Carbondale graduate students live on campus. Our on-campus apartments and residence halls offer professional, live-in staff; convenient locations; 24-hour emergency maintenance; air conditioning and laundry facilities. Amenities vary.

Apartments

Evergreen Terrace Apartments offer two- and three-bedroom apartments. Internet and cable included. Programs and activities for adults and children are available. ELIGIBILITY: SIU Carbondale students with up to four children, married students, domestic partner students, and single graduate and undergraduate students.

Wall & Grand Apartments offer two-and four-bedroom fully furnished, all-inclusive apartments. Each apartment houses four students and includes all utilities, cable and wireless Internet, a complete kitchen and washer/dryer in each unit. Accessible and co-ed apartments are available. ELIGIBILITY: Single SIU Carbondale sophomore, junior, senior and graduate students of any age and freshmen age 21 and older.

Elizabeth Apartments offer furnished efficiency apartments. ELIGIBILITY: SIU Carbondale single graduate students.

Residence Halls

Single students may live in on-campus residence halls. The traditional residence hall contract includes a dining plan, all utilities, air-conditioning, wireless internet and cable television.

Contracts

Contract and application information is available online at housing.siu.edu. Direct questions to the University Housing Contracts Office at 618/453-2301 or housing@siu.edu.

Parking On Campus

Graduate students parking a motor vehicle on campus must display a valid and appropriate parking permit obtained from the Parking Division. The Parking Division of the Department of Public Safety assists students with parking on campus by issuing a parking decal or a temporary parking permit for individuals with short term parking needs. Parking regulations are enforced twenty-four hours a day, seven days a week and can be reviewed at our website. Applications for parking privileges can

be completed online. The type of decal an applicant is eligible to receive and the date of purchase determines decal cost. Graduate students with an assistantship do not qualify for faculty/staff decals.

The Parking Division office is open 7:30 a.m - 4:30 p.m. Monday through Friday. After hours, please contact the SIU Carbondale Police Department for parking guidance at 618/453-3771.

Center for International Education

The office of the director for Center for International Education (CIE) is responsible for developing and supporting faculty, staff, and students in international education. The office administers International Development, Study Abroad, International Student Support, and International Undergraduate Admissions.

Primary goals include: increasing the numbers of externally funded grants and contracts in the international arena for SIU Carbondale; increasing international enrollment, serving international students, and providing international opportunities for faculty and students. Units of CIE are located at 425 Clock Tower Drive in the northwest section of Woody Hall facing the clock tower.

International Development

The Office of International Development provides University-wide leadership, coordination, and support for a variety of international activities. These activities include: research and dissemination of information on external funding opportunities, development and administration of grants and contracts, maintenance of an international projects database, administration of international linkage agreements, coordination of Women and International Development activities, sponsorship of international forums, administrative support for international alumni, international student recruitment, and assistance with international visitors and protocol. A major focus of office activity is to assist faculty with grant proposals, training contracts, and related activities of an international nature.

The Office of International Development is located at 425 Clock Tower Drive in the northwest section of Woody Hall facing the clock tower 618/453-7674.

International Student Support

The International Student Support division provides comprehensive programs and services for international students and scholars from prearrival correspondence to post-graduate concerns. These programs and services include: processing of undergraduate admission applications, serving as liaison with foreign governments and sponsoring agencies, and other needs. This office has been designated by the U.S. Citizenship and Immigration Services (USCIS) as having the official responsibility for interpretation and adherence to USCIS laws and regulations as they apply to non-immigrant students and faculty. Also designated responsible officers administer proper compliance with the Exchange Visitor Program for the University. Assistance with USCIS regulations, forms, and procedures is provided to all non-immigrants related to University and broader community affairs.

Integral educative services include: orientation programs, arrival and housing assistance, personal counseling and referral, a Handbook for International Students and Faculty, a newsletter (The International Dateline), advisement of international student associations, and a re-entry workshop for international students returning home.

Special programs which promote an international dimension of cross-cultural exchange to the broader community are provided. An annual International Festival and various national day celebrations are held. The Community Programs subdivision in cooperation with the International Friends Club coordinates a Host Family Program, International Speakers' Bureau, English in Action, Language Exchange, American and International Cooking Exchange, an International Spouses Group, and a Loan Closet.

The International Student Support division is located at 425 Clock Tower Drive in the northwest section of Woody Hall facing the clock tower 618/453-5774.

Study Abroad Programs

Study Abroad Programs coordinates overseas services for domestic and international students, including international grant programs, exchanges, and faculty-led Global Seminars. It is the central referral point for information on the student Fulbright program and on the Boren Award and Gilman Award. Graduate students may also participate in inter-university international exchange programs and in travel/study programs offered during the summer and intercession periods under the auspices of this division.

Study Abroad Programs is located at 425 Clock Tower Drive in the northwest section of Woody Hall facing the clock tower 618/453-7670.

Economic and Regional Development

The University established the Office of Innovation and Economic Development (OIED) in 1986 as a means to improve the quality of life and economic climate in southern Illinois. OIED's mission is to establish and support an environment to foster innovation, commercialize University discoveries, and advance entrepreneurship and economic development within SIU Carbondale and throughout the region. Located in SIU Carbondale Research Park south of campus across from Saluki Football Stadium, OIED administers the Illinois Small Business Development Center at SIU Carbondale, Illinois Manufacturing Excellence Center, The Small Business Incubator Programs including the Saluki Innovation Lab and Saluki Ventures, The Center for Innovation, The Center for Delta Studies, Business Innovation and Research, and SIU Carbondale Research Park. Additionally, the department manages several other regional projects and training programs to support entrepreneurs, inventors, and regional community partners. Space may also be leased within the Research Park for new business start-up or existing business expansion.

Student Health Services

Student Health Services is AAAHC accredited and is one of the largest and most comprehensive health centers in the nation. It serves as a medical facility and health information resource for a richly diverse campus community, supporting students in the achievement of their academic goals and personal development through the creation of a healthy campus. The Student Health Center is open Monday – Friday from 8:00 a.m. to 4:30 p.m. Our services include:

Health Insurance Benefits

SIUC offers a student health insurance plan to provide off campus healthcare coverage such as: emergency care, hospitalization, surgery, and other specialty healthcare services. This ACA compliant plan is designed specifically for SIUC students and features a national provider network, low deductibles, low copays and low out of pocket costs to students. Students with comparable health coverage may waive the fee by the posted deadline. Domestic students must complete the online waiver form and international students must call or visit the Student Health Services insurance department. Students still have access to the Student Health Center even if they waive the Student Health Insurance Plan because students pay the Student Health Fee as part of their tuition.

Immunization Compliance

All students enrolled in more than 5 credit hours on campus are required by Illinois Law (Public Act 85-1315) to provide proof of vaccinations for tetanus, diphtheria, pertussis, measles, mumps, rubella, and meningitis. All International students are required to complete a mandatory Tuberculosis (TB) screening. This (TB) screening must be done at the Student Health Center. Records must be in English. Elective immunizations such as Hepatitis, Flu, and travel vaccinations are recommended and available but not required. You may obtain your immunization records from your physician, local health department, high school, or previous university. You may email records to immunizations@siu.edu, fax 618/453-4452, or mail to Student Health Center. For specific immunization requirements go to the Immunizations website or call 618/453-4326. Immunization records must be on file at SHC before the tenth day of class to avoid a registration hold.

Saluki Health Portal

From the Student Health Services' website, students can access the Saluki Health Portal with their SIUC Network ID and password. In the secure portal, students have many options including: make, view, and cancel appointments; send secure messages to the e-nurse; complete required forms and request a prescription refill.

Medical Clinic

Medical problems may interfere with your ability to succeed academically. Our Medical Clinic offers diagnostic services including: lab and x-ray, treatment and follow-up care. The Medical Clinic is known for delivering exceptional and responsive care. In most instances, students with an urgent medical need may be seen the same day they call for an appointment. Students may schedule an appointment during regular business hours by accessing the Saluki Health Portal from their personal device or computer, 24 hours a day, seven days a week.

Counseling and Psychological Services (CAPS)

College is a time of change, transition, and growth. At times, students find it useful to seek the assistance of a caring professional. Each year 1 out of 10 SIU Carbondale students seek services at CAPS. Counseling and Psychological Services provides crisis walk-in counseling, group, individual, and couples counseling to SIU Carbondale students. Our staff of professional psychologists and counselors is trained to help you discover ways to cope more effectively with problems in day-to-day living. The staff has a commitment to meet the needs of individuals from diverse backgrounds, including differences of culture, race, gender, sexual orientation, ability, and religion/spirituality. CAPS is located in the Student Health Center on the second floor, Room 253. For more information call 618/453-5371 or visit their website www.shc.siu.edu/counseling.

Psychiatry

Students can experience psychiatric difficulties which interfere with their academic and personal lives. The Psychiatric Clinic is staffed with a psychiatrist and psychiatric Physician's Assistant who work closely with the psychologists and mental health professionals at Counseling and Psychological Services. Services include psychiatric evaluation and medication management. Call 618/453-4346 for an appointment.

Wellness and Health Promotion Services (WHPS)

WHPS provides current and accurate health information about important lifestyle decisions. Our professional staff provides resources and programs in sexual health, stress management, suicide prevention, alcohol and other drug use, and other areas of wellness that impact student success. For more information, call 618/536-4441.

Pharmacy

We have a full service pharmacy. You may fill prescriptions at our pharmacy from any licensed provider. In addition to prescriptions, the pharmacy has a selection of over-the-counter items available for purchase. You may purchase all pharmacy items with normal payment methods or by charging it to your Bursar account or Debit Dawg. Private insurance and Medicaid cards are not accepted. For pharmacy information, call 618/453- 4417.

Optical

Marion Eye Centers and Optical has a satellite office located on the first floor of the Student Health Center building. This is a private business not affiliated with Student Health Services. To make an appointment, call 618/549-0615.

Sports Medicine

The Orthopaedic Institute of Southern Illinois has a therapy center located on the first floor of the Student Health Center building. This is a private business not affiliated with Student Health Services. To make an appointment, call 618/453-1292.

After-Hours Emergency

For after-hours emergencies, call 911 or go to the emergency room. Your Student Medical Insurance will not cover non-emergent ER visits.

After-Hours Non-Emergency

Non-emergency after hours care is available at SIH Medical Group Prompt Care 618/549-5361 or Shawnee Health Services, Same Day at 618/519-9200.

Office for Access & Accommodations

The Office for Access & Accommodations is committed to assuring that students with disabilities receive equal, effective, and meaningful access to all campus programs, resources, and services. We recognize that diversity of abilities is a source of excellence, enrichment, and strength for all members of the University community. Our staff coordinates and provides support services to students with disabilities and works closely with faculty and staff in an advisory capacity. We provide disability education awareness to help insure equal access within courses, physical structures, and in the online environment. Students can contact the office to arrange an initial appointment with a staff member or inquire about available resources and services.

Center for English as a Second Language

The Center for English as a Second Language (CESL) is a unit in the College of Liberal Arts and is affiliated with the Department of Linguistics. CESL's teaching staff is composed of Non-Tenure Track University faculty. The intensive English language program at CESL is open to prospective University undergraduate and graduate students, professionals, and others wanting to study English intensively.

Students planning to go on to graduate level study who complete all of CESL's other intensive English levels may enroll in CESL's Graduate Student English course, which is specifically designed to prepare those students for graduate studies. Activities and focuses include: library use, summarizing and critiquing articles from professional journals, oral presentations, readings, essay exams, seminar-style discussions, and the preparation of reports and graduate level papers in students' fields of study. Communication practice focuses on building and improving interpersonal interactions, presentation, listening, and pronunciation skills.

The CESL office is in Faner 3242, 618/453-2265.

Religious Observances

Accommodating Student Religious Observances Policy

Southern Illinois University Carbondale values and celebrates a diverse student body, including but not limited to students from a variety of faiths or religious beliefs. Therefore, on occasion, these religious practices may require students to be absent from classes or other activities. Southern Illinois University Carbondale recognizes and supports the rights of students to participate in those practices. This policy identifies those practices and the obligation of students to notify faculty and staff to excuse absences in certain circumstances related to these religious practices. Southern Illinois University Carbondale does not charge students for exercising the rights available under this policy. Further, students shall not be subjected to any adverse or prejudicial effects because of their request or use of leave under this policy. This policy meets the requirements of the University Religious Observances Act, 110 ILCS 110/et. seq.

Admissions/Registration

The University's admissions process provides ample opportunity for admission and registration activities without conflicting with religious holidays and observances. However, students may receive another appointment when an appointment for admission counseling, or an appointment for academic advisement, or an appointment for registration for classes falls on a date or at a time that would conflict with the student's observances of major religious holidays. The individual student must notify in writing the appropriate admissions officer or academic adviser of the conflict with the student's observance

of the religious holiday. That notification shall be made immediately after the student's receipt of the appointment or at least five work days prior to the appointment time, whichever is later.

Class Attendance

Students absent from classes because of observances of major religious holidays will be excused. Students must notify the instructor at least three regular class periods in advance of an absence from class for a religious holiday and are responsible for making up work missed.

Examinations

Instructors are requested not to schedule class examinations on dates that would conflict with major religious holidays. In the event an examination must be scheduled on a date that conflicts with a student's required observance of a religious holiday, the student should be given reasonable opportunity to make up the examination. It is the student's responsibility to notify the instructor of the class when the examination will be missed. That notification must occur at least three regular class meeting periods in advance of the absence or at the time the announcement of the examination is made, whichever is later.

Grievance Procedure

A student who believes that a request for an accommodation under this Policy has been unreasonably denied or that the student has been denied an educational benefit based on religious belief or practices may petition in writing as follows:
Cases involving class attendance or class examinations that are unresolved at the class instructor level may be appealed by the student by filing a petition in writing, within thirty (30) calendar days of the incident being appealed, to the chair or coordinator of the department or program in which the course is offered. In the event the case is not resolved to the student's satisfaction at the department/program level within five (5) working days after the chair's receipt of the petition, the student may petition in writing to the dean of the school or college to which that teaching department or program reports. The student's petition to the school or college level must be filed with the dean within five (5) working days of the decision at the department level. Should the case not be resolved to the student's satisfaction at the school or college level within five (5) working days of the petition filing at that level, the student may petition the Provost. If the student is still not satisfied at that level within the five (5) working day time period, the student may petition to the Chancellor within another five (5) working days. Decisions of the Chancellor may be appealed to the President, and to the Board of Trustees if necessary, in accordance with Bylaws of the Board of Trustees.

In cases involving admissions, the grievance process should follow the time frames described above, with the initial petition being filed with the Graduate School Dean, which is the only filing point prior to the Provost.

Sexual Harassment Policy

(Approved by the SIU Board of Trustees on May 7, 2009.)

Sexual Harassment Policy Statement

Southern Illinois University is committed to a policy of providing equal employment and educational opportunities. In particular, Southern Illinois University is committed to maintaining a community in which students, faculty, and staff can work and learn together in an atmosphere free of all forms of discrimination, including sexual harassment. Sexual harassment violates the dignity of the individual and the integrity of the University as an institution of higher learning, and thus, sexual harassment in any form will not be tolerated at Southern Illinois University. This policy applies to all employees, students, contractors, and visitors of Southern Illinois University.
This policy prohibits sexual harassment, retaliation related to sexual harassment claims, knowingly reporting false sexual harassment complaints, and knowingly providing false information during the investigation of a sexual harassment complaint. All University employees are responsible for taking reasonable and necessary action to prevent sexual harassment, and all members of the University community are expected to contribute to an environment free of sexual harassment, and are encouraged to report promptly (pursuant to campus procedures) any conduct that could be in violation of this policy.

Each SIU campus shall adopt specific procedures for reporting, investigating and resolving harassment claims.
This policy shall not abridge any individual's speech and due process rights under the First and Fourteenth Amendments; nor shall it abridge principles or rights of academic freedom or the University's educational mission. Prohibited sexual harassment and discrimination are not expression protected as a matter of academic freedom.

Definitions of Sexual Harassment

Sexual Harassment in Employment means any unwelcome sexual advances, requests for sexual favors, or any conduct of a sexual nature, when:

1. Submissions to or toleration of such conduct is made, either explicitly or implicitly, a term or condition of an individual's employment (this is a type of quid pro quo – meaning "this for that" – sexual harassment); or
2. Submission to or rejection of such conduct by an individual is used as a basis (or threatened to be used as a basis) for employment decisions or assessments affecting such individual (this is a type of quid pro quo – meaning "this for that" – sexual harassment); or
3. Such conduct has the purpose or effect of substantially interfering with an individual's work performance or creating an intimidating, hostile, or offensive working environment (this is a type of hostile environment sexual harassment).

Sexual Harassment in Higher Education means any unwelcome sexual advances, requests for sexual favors, or any conduct of a sexual nature, when:

1. Submissions to or toleration of such conduct is made, either explicitly or implicitly, a term or condition affecting the student's participation in or benefit from any of the academic educational, extra-curricular, athletic, or other programs of the University (this is a type of quid pro quo – meaning "this for that" – sexual harassment); or
2. Such conduct has the purpose or effect of substantially interfering with a student's academic performance or creating an intimidating, hostile, or offensive academic environment (this is a type of hostile environment sexual harassment).

Hostile environment sexual harassment occurs when unwelcome conduct of a sexual nature is so severe, persistent, or pervasive that it affects an employee's work performance, limits a student's ability to participate in or benefit from a University program or activity, or creates an intimidating, threatening or abusive working or academic environment. Sexual harassment generally includes something beyond the mere expression or display of views, words, symbols, images, or thoughts that some persons find offensive.

Totality of the Circumstances

In determining whether alleged conduct constitutes sexual harassment, the record as a whole and the totality of the circumstances will be considered. Circumstances may include: the frequency of the conduct; its severity; whether it was physically threatening or humiliating, or a mere offensive utterance; and whether it unreasonably interfered with the alleged victim's work performance or ability to participate in or benefit from the University's programs. The objective severity of the conduct will be judged from the perspective of a reasonable person in the position of the alleged victim and not on the intent of the person engaging in the conduct.
Examples of behavior that may be considered sexual harassment include, but are not limited to:

1. Physical sexual assault or coerced sexual intercourse;
2. Unwelcome physical contact, such as touching of a person's body, hair or clothing, or hugging, patting or pinching;
3. Direct or implied threats that submission to sexual advances will or could be a condition of employment, work status, promotion, performance evaluation, grades, letters of recommendation, or other work or educational benefits (quid pro quo);
4. Severe or persistent unwelcome verbal, physical, or other expressive conduct that is offensive or humiliating in a sexual way. Such conduct may include: comments of a sexual nature and/or sexually explicit statements, questions, jokes, anecdotes, gestures, or facial expressions that would offend or humiliate a reasonable person in the circumstances of the individual experiencing this

conduct. Conduct need not be in person but can be any form of communication including but not limited to: written, telephone, or electronic communication such as electronic mail and/or comments sent via the Internet.
5. Exhibition or use of sexually explicit materials in the workplace or learning environment that have no relationship to the curriculum or research or the mission of the University and substantially interfere with an employee's work performance or a student's ability to benefit from University programs. Such materials may be in the form of music, documents, objects, photographs, film, or electronically generated materials.
6. Any unwanted, inappropriate behavior that is targeted to a person or person(s) because of their gender or sexual orientation, for example, repeatedly telling women (or men) that they are not capable of doing a certain kind of work.
7. Amorous or sexual relationships between a faculty member and a student under his or her academic supervision or between a supervisor and an employee under his or her supervision, where the direct power differential compromises the subordinate's free choice. (Even consenting relationships may lead to an actual or perceived conflict of interest or other unethical conduct. See policies on consenting relationships).

Retaliation is defined as any act of reprisal, including negative or otherwise unwarranted treatment, related to the reporting of, or participation in a complaint of sexual harassment. Retaliation may include, but is not limited to:

1. Taking negative tangible employment actions against a person;
2. Taking actions that substantially interfere with or have a chilling effect on the employee's or student's ability to participate fully in and benefit from the work or educational environment;
3. Failing to provide assistance or instruction that would otherwise be provided;
4. Failing to fairly and/or objectively evaluate an employee's or student's performance;
5. Failing to record an appropriately earned grade for a student; or
6. Otherwise sabotaging an employee's or student's performance or evaluation.

It is a violation of this policy to engage in any retaliatory acts against an employee or student who reports an alleged incident of sexual harassment, or any employee or student who testifies, assists, or participates in a proceeding, investigation, or hearing relating to an allegation or complaint of sexual harassment.

1. **Duty to File in Good Faith/False Reports**
   Any person who reports alleged sexual harassment or provides information during the investigation of a complaint is presumed to have participated in the investigatory process in good faith. It is a violation of this policy for persons to knowingly make a false sexual harassment complaint or knowingly provide false information during the investigation of a complaint.
2. **Implementing Procedures**
   This Sexual Harassment Policy is to be implemented throughout the University, and procedures consistent with this policy for such implementation are to be established on each campus. The President is authorized to delegate to each Chancellor the authority to develop procedures for the implementation of this Sexual Harassment Policy.

Attribution

Sexual harassment policies are governed by state and federal laws and statutes. As such, policies at many institutions can look very similar to that proposed by SIU. This policy was developed in accordance with the Illinois Human Rights Act (775 ILCS 5/2 and 775 ILCS 5/5 and 775 ILCS 5/5a); the Equal Employment Opportunity Commission Regulations (29 C.F.R. § 1604.11); and guidance issued by the United States Department of Education Office of Civil Rights. Additionally, policies from several other universities were reviewed including: University of Massachusetts Amherst, University of Michigan, University of North Carolina at Chapel Hill, Michigan State University, University of North Carolina at Greensboro, University of Maine, Indiana University, Indiana University - Purdue University at Indianapolis, Purdue University, University of Southern Indiana - Evansville, New York University, University of Illinois, University of Massachusetts - Boston, City University of New York, Northwestern University, Illinois State University, University of Colorado System, Youngstown State University, Princeton University, Michigan State University, and University of Florida - Gainesville.

Where to Get Information Regarding SIU's Sexual Harassment Policy

Complaint Resolution Officer
Kay Doan, Title IX Coordinator
Office of Equity and Compliance
618-453-4807

In an emergency situation that involves possible criminal sexual misconduct or in the event of criminal sexual assault please notify Campus Police at 618/453-3771 or dial 911 (both lines are TTY/ TDD accessible.) If it is not an emergency, please report to safe.siu.edu.

Academic Grievances

Graduate Student Academic Grievance Policy

Graduate students at SIU Carbondale shall have the right to appeal for redress of grievance through established channels under the conditions stated below. Access to these channels is restricted to complaints by graduate students alleging that some member of the University community has caused the student to suffer some specific harm related to a matter within the authority of the Dean of the Graduate School (i.e. matters pertaining to academic progress of a student). Grievances which have been brought to a hearing under another campus grievance procedure shall not be brought to a hearing under this procedure.

With respect to student's complaints alleging capricious grading, the following guidelines shall apply: Instructors are expected to evaluate student work according to sound academic standards. Equal demands should be required of all students in a class, and grades should be assigned without departing substantially from announced procedures. It is the instructor's prerogative to assign grades in accordance with his/her academic/professional judgement, and the student assumes the burden of proof in the appeals process. Grounds for appeals include:

1. the application of non-academic criteria in the grading process, as listed in the University's nondiscrimination and affirmative action statements: race, color, sex, national origin, religion, age, sexual orientation, marital status, or handicap;
2. the assignment of a course grade by criteria not directly reflective of performance relative to course requirements;
3. the assignment of a course grade by standards different from those which were applied by the instructor to other students in the course.

Graduate Student Academic Grievance Procedures

The steps for dealing with a graduate student academic grievance are detailed below and may include:

1. an attempt at an informal resolution;
2. a hearing before an academic grievance committee of a department/school;
3. a decision by the department chair/school director. In the event of a conflict of interest, wherein the respondent to the grievance is a department chair/school director, or dean, all references to the department chair/school director or dean will be understood to mean the next person in the academic/administrative chain of command;
4. an appeal to the Graduate School's Student Appeals Committee;
5. a hearing before the Graduate School's Student Grievance Committee; and
6. a decision by the Dean of the Graduate School.

Cases involving academic dishonesty will be handled according to the Student Conduct Code. Separate grievance procedures exist for cases covered by the University Policy on Sexual Harassment, the Policy Accommodating Religious Observances of Students, the Policy on the Release of Student Information and Access to Student Records at Southern Illinois University Carbondale, the Policy on Immunization of Enrolled Students, the Policy on the Determination of Residency Status, and the University's response to comply with Americans with Disabilities Act. These procedures are published in the Undergraduate Catalog. Graduate students employed as student workers are covered by a student worker grievance procedure, which is administered by the Financial Aid office.

Informal Resolution

A graduate student seeking redress through grievance must first attempt to resolve the matter informally by contacting the party against whom redress is sought (respondent). If the dispute is not resolved at this stage, the student should contact the respondent's departmental chair/school director or another appropriate mediator, such as the University ombudsman, if any, who shall attempt to resolve the dispute.

Departmental/School Grievance Procedure - Academic Grievance Committee

In the event that the dispute is not resolved informally, a graduate student may ask for and receive a hearing before a departmental/school academic grievance committee. Such a grievance shall be governed by the procedures established by the academic unit in which the complaint arose. In the event an academic unit has not established such procedures, the procedures outlined below shall govern the grievance.

Filing a Grievance

A graduate student desiring a hearing before a grievance committee of an academic department/school must submit a written request to the chair/director of the department/school no later than twenty-one (21) working days* after the beginning of the semester following the incident in question, excluding summer term. A student may request an extension of the deadline in writing by petitioning the department chair/school director. In the event that informal proceedings are continuing toward resolution, such a request shall normally be granted. The request for a hearing must state the following:

1. Name of the grievant.
2. Program in which the grievant is enrolled.
3. Name of the grievant's major adviser.
4. Name and title of the person(s) against whom the grievance is being filed.
5. Current address and phone number of the grievant.
6. Statement of the grievance, including descriptions of the incident(s) involved, date(s) of occurrence, what remedy is being sought, as well as any supporting documents.

*Working days shall mean those days during which the University is in session, excluding weekends or legal holidays.

Department/School Action on Grievance

Upon receiving a written request for a hearing regarding an academic grievance, the department chair/school director shall send the respondent a copy within five (5) working days, who shall provide the chair/director with a written response within ten (10) working days. The chair/director shall then forward the grievance and response to the department/school graduate academic grievance committee within five (5) working days.

A department/school graduate academic grievance committee shall be advisory to the department chair/school director and shall submit its findings to the department chair/school director. The committee shall consist of three members. The department chair/school director may designate an existing department/school committee to serve in such a capacity (subject to the qualifications listed herein), or may appoint an ad-hoc grievance committee. The members of the committee shall be appointed wherever possible from the department/school in which the grievance arose. Of those three members, two shall be appointed from the senior graduate faculty and one shall be appointed from the graduate student body upon consultation with the leadership of the department/school graduate student organization. A department/school graduate student grievance committee shall meet and elect its chair from among its graduate faculty membership. Any faculty member involved in the dispute shall not be appointed to the grievance committee.

The department chair/school director shall notify the parties of the identity of the individuals who have been selected to serve on the grievance committee. The participation of any committee member may be challenged for cause. If the department chair/school director determines that the challenge is valid, she/he shall name a substitute.

The committee chair shall request of both parties copies of any documents and a list of witnesses they wish to introduce. These should be submitted without delay. The committee chair shall convene a hearing within fifteen (15) working days of receipt of the substantiating documents. These documents shall be available to both parties at least five (5) working days prior to the hearing.

The hearing shall be conducted by the committee according to the hearing procedures which are outlined below.

In the absence of compelling circumstance, the committee shall make its recommendation on the grievance to the department chair/school director within ten (10) working days after the conclusion of the hearing.

The department chair/school director shall decide to accept or reject the committee's recommendations and render a decision on the grievance promptly. The decision and the reasons for it shall be submitted to the parties, the committee members, and the collegiate Dean at the same time.

The department chair/school director shall advise the parties of their right to appeal to the Dean of the Graduate School. Hearings of appeals shall not be automatically granted. Dissatisfaction with the decision shall not be sufficient grounds for appeal. The appellant must demonstrate that the decision at the department/school level was in error.

If the Department procedures and this Policy/Procedure conflict, the Department procedure will govern the notification.

Appeals of Department/School Decisions to the Graduate School

Filing an Appeal

If a graduate student wishes to appeal a decision of the department/school she/he must file a written appeal, on the form designated by the University, with the dean or designee of the Graduate School within twenty-one (21) working days of receipt of the department/school decision. Once timely filed, the processing of all grievances filed under this Policy/Procedure shall be stopped between May 15 and August 15. The appeal must state the following:

1. Name of the appellant.
2. Program in which the appellant is enrolled.
3. Name of the appellant's major adviser.
4. Name and title of the person(s) against whom the original grievance was filed.
5. Current address and phone number of the appellant.
6. Copies of the original statement of grievance, the response by the person against whom it was filed, supporting documents, as well as a statement of what remedy is being sought.
7. Summary of grievance proceedings held at the department level and the decision(s) rendered at that time.
8. Statement of why the previous decision may be in error.

Graduate School Student Appeals Committee

The Dean shall promptly forward the material to the coordinator of the Student Appeals Committee of the Graduate School (SAC). The Vice-Chair of the Graduate Council shall be the Coordinator of the SAC who will select three members of the Graduate Council (two faculty members, one student) to form the SAC.

The SAC coordinator shall solicit a reply to the appeal from the respondent, who shall have ten (10) working days from the coordinator's request to provide a written response. The coordinator shall then promptly forward all materials to the SAC members and shall convene the committee at the earliest opportunity. The coordinator is welcome to attend the beginning of the SAC meeting, but once the SAC begins deliberations, the coordinator cannot be present.

The SAC shall decide by simple majority whether a hearing should be held. The SAC shall determine whether there is sufficient evidence provided by the appellant and not sufficiently rebutted by the respondent to indicate that the decision might have been made in error. If so, a hearing should be held.

The SAC shall designate one of its members to inform the coordinator of the SAC's decision within three (3) working days of the decision. If a hearing is not granted, the coordinator shall forward all materials to the Dean of the Graduate School and inform both parties of the reasons for the denial. The grievant shall have no further appeals.

Graduate School Student Grievance Committee

If the SAC grants the appellant's hearing request, then a Student Grievance Committee of the Graduate School shall be convened. The SAC coordinator shall request from the Graduate Council a list of graduate faculty members and from the Graduate and Professional Student Council a list of graduate students available to serve as members of the Student Grievance Committee. These persons may not be members of the same college as the parties to the grievance. It is permissible for these persons to have previously served on the SAC in the same matter. The coordinator shall appoint three graduate faculty members and two graduate students and so notify the parties to the grievance. Committee members may be challenged for cause and, if the coordinator determines the challenge to be valid, she/he shall name substitute(s) from the lists. The committee shall select its own chair.

Upon formation of the Student Grievance Committee, the SAC coordinator shall forward all materials to the committee chair. The chair shall convene a hearing within twenty-one (21) working days of the formation of the Student Grievance Committee.

The hearing shall be conducted by the committee according to the procedures listed below, with the exception that new evidence and witness testimony may be introduced only at the discretion of the committee. The hearing at this level shall be limited to the issues raised to the academic grievance committee of the department/school and/or to the Student Appeals Committee of the Graduate School. New evidence shall not normally be permitted.

The committee shall make its recommendation on the appeal to the Dean of the Graduate School within ten (10) working days after the conclusion of the hearing. The Dean of the Graduate School shall decide to accept or reject the committee's recommendations and render a decision on the grievance promptly. The decision and the reasons for it shall be submitted to the parties, the Student Grievance Committee members, and the department chair/school director.

All records of the appeal and hearing shall be deposited with the Graduate School upon completion of the Student Grievance Committee's work.

Hearing Procedures

1. The principal parties to the grievance shall have the right to be accompanied by an advisor of their choice. The advisors may speak on behalf of their clients only with the approval of the committee. At the sole discretion of the committee, the committee may allow a party to appear via appropriate electronic means.
2. All hearings shall be open unless either of the parties requests that the hearings be closed. If the hearing is closed, only the parties, their advisor, and the committee shall be present during the taking of evidence. Witnesses for either party shall be present only while giving testimony if the hearing is closed.
3. All hearings shall be audio or video recorded, except that the deliberations of the committee members, after completion of the witnesses testimony and/or party presentations, shall not be recorded. The recording shall be deposited in the Graduate School or department/school, as applicable, at the conclusion of the hearing.
4. Witnesses:
    a. In the hearing of the academic grievance committee within a department/school, each party may call witnesses to present evidence. Each party shall have the right to examine any witness called by the opposing party. If a witness is unable to attend in person then the committee, in its sole discretion, may allow the witness to appear before the committee via appropriate electronic means and/or to submit written statements. If the presence of a witness is required to ensure fairness to all parties, the hearing may be continued until such witness is able to attend the hearing.
    b. In the hearing of the Graduate School's Student Grievance Committee, witnesses shall not typically be permitted and may be presented only at the discretion of the committee. If witnesses are allowed, the provisions of paragraph 4.a above shall apply.
5. Each party may make an opening and closing statement.
6. The committee shall decide all matters, procedural and substantive, by simple majority vote.
7. Decisions by the committee shall be based upon a preponderance of the evidence (i.e., the evidence taken as a whole makes a party's claim more likely than not).

Graduate School Procedures for Charges of Academic Dishonesty Leading to Possible Rescission of Degree

Introduction

Charges against a former student relating to acts of academic dishonesty in the submission of graduate degree requirements shall be handled to the extent feasible under the SIU Carbondale Student Conduct Code procedures applicable to charges relating to academic dishonesty. The Dean of the Graduate School has the responsibility for the formal resolution of charges involving academic dishonesty in Graduate School programs. Since the Student Conduct Code procedures are not in all respects applicable to charges involving an individual no longer enrolled in the University, the following supplemental procedures will be followed for adjudicating such charges.

Notification of Charges

Charges against a former student involving allegations of academic dishonesty in the completion of graduate degree requirements shall be initiated by the Dean of the Graduate School by letter to the individual, sent certified mail/return receipt requested, stating the specific charges, and the date, time, and place for the hearing, and enclosing a copy of the Student Conduct Code and these procedures. The charge letter shall be mailed no fewer than twenty (20) business days in advance of the date of the hearing.

Hearing Agent

Charges shall be heard by a five-member hearing committee, the members of which shall be appointed from those colleges/schools having graduate programs. Of the five members, three shall be appointed from the graduate faculty and two shall be appointed from the graduate student body. The dean will seek nominations for a committee hearing a case from the Graduate and Professional Student Council for the graduate student members, and from the Graduate Council for the graduate faculty members. The committee will be demographically representative of the University insofar as possible. The academic unit from which the charge arose will not have a member appointed to the hearing committee. Once a hearing committee is constituted it shall meet and elect its own chair from among its graduate faculty membership. The individual charged shall have the right to challenge membership of the hearing committee as provided in the Student Conduct Code.

Hearing Procedures

Hearings shall be conducted in accordance with the formal disciplinary procedures set forth in the Student Conduct Code. In addition, the following procedures shall govern the conduct of the hearing:

1. The individual charged shall have the right to be accompanied by an adviser of his/her choice. An adviser will be permitted to advise the individual in the hearing, and to speak on behalf of the individual and cross-examine witnesses with the consent of the hearing committee.
2. The Dean of the Graduate School and the individual charged shall provide to the hearing committee a list of witnesses to be called and copies of any documents which they seek to introduce into evidence at the hearing. The committee chair will furnish copies of these to the other party. Such witness list and documents shall be provided to the hearing committee not less than ten (10) business days prior to the date scheduled for the hearing, and to the parties not less than five (5) business days before the date of the scheduled hearing.
3. All hearings shall be closed unless the individual charged requests that it be open. If the hearing is closed, only the parties, their adviser, and the committee members shall be present during the taking of evidence. Witnesses for either party shall be present only while giving testimony.
4. All hearings shall be tape-recorded. The tape-recording will be submitted along with the entire case record and the committee’s findings and recommendations to the Dean of the Graduate School following conclusion of the hearing.
5. Each party may make an opening statement before the presentation of any evidence and a closing argument following the conclusion of all evidence.

6. The charges against the individual and witnesses testifying in support thereof shall be presented first. The individual charged shall have the right to respond to the charges and present witnesses and evidence on his/her own behalf.
7. Each party shall have the right to ask questions of any witness called by the other party. Members of the committee may also question witnesses.
8. Written statements in lieu of personal testimony may be used only with permission of the committee and only in the event a witness is physically unable to attend the hearing. The opposing party shall be given notice at least three (3) days prior to the commencement of the hearing of the fact that an individual will not be physically present to give testimony and so that objection may be made to the use of written statements. If the committee determines that the actual presence of the witness is required to insure fairness to all parties, the hearing may be continued until such witness is physically able to attend the hearing.
9. The hearing committee will decide all matters, procedural and substantive, by simple majority vote.
10. In the absence of compelling circumstances, the committee shall make findings and recommendations on the charges to the Dean of the Graduate School within fifteen (15) business days after the conclusion of the hearing. The Dean of the Graduate School shall render a decision, absent compelling circumstances, within ten (10) business days after receipt of the committee's findings and recommendations. The decision and the reasons therefore shall be submitted to the individual charged by certified mail, return receipt requested, and to the committee chair. If the dean determines that additional evidence is necessary to decide the matter(s), the dean may remand the matter to the committee for the taking of further evidence, and in doing so, may limit the issues on which additional evidence may be taken. When a matter is remanded to the committee, the committee shall follow the procedures set forth above.

Sanctions

Sanctions which may be imposed include the completion of any additional academic requirements deemed necessary for continued holding of the degree, or, if it is found that the degree was improperly awarded because of academic dishonesty on the part of the former student in the submission of degree requirements, a recommendation that the degree be rescinded. A recommendation that a degree be rescinded will be made to the chancellor through the Chancellor and Vice Chancellor for Academic Affairs and Provost, and will require final action by the Board of Trustees of Southern Illinois University.

Appeal

If the individual is not satisfied with the decision of the dean, a written argument stating the reasons for such dissatisfaction may be submitted to the Chancellor and Vice Chancellor for Academic Affairs and Provost within ten (10) business days after the date that delivery of the decision was tendered by the U.S. Postal Service to the individual. Such written argument shall be attached to the Dean's decision and remain therewith throughout the remainder of the process.

Colleges and Schools

College of Agricultural, Life, and Physical Sciences

The College of Agricultural, Life, and Physical Sciences provides a diverse offering of programs ranging from physical and life sciences to agribusiness economics. The college prides itself in delivering experiential opportunities for its students. Whether those opportunities are on its 2,000-acre working farm or in one of its many well-equipped research laboratories, they are the hands-on learning experiences necessary to ensure our students a more successful career path.

The College of Agricultural, Life, and Physical Sciences offers the following graduate degrees and post-baccalaureate certificates in six schools:

School of Agricultural Sciences

- M.S. Agribusiness Economics
- M.S. Animal Science
- M.S. Plant, Soil, and Agricultural Systems

- Ph.D. Agricultural Sciences

School of Biological Sciences

- M.S. Biological Sciences
- M.S. Multidisciplinary Biomedical and Biological Sciences (Microbiology)
- M.S. Plant Biology
- M.S. Zoology
- P.S.M. Zoology
- Ph.D. Multidisciplinary Biomedical and Biological Sciences (Microbiology)
- Ph.D. Plant Biology
- Ph.D. Zoology

School of Chemical and Biomolecular Sciences

- M.S. Chemistry
- Ph.D. Chemistry

School of Earth Systems and Sustainability

- M.A. Geology
- M.S. Geography and Environmental Resources
- M.S. Geology
- Ph.D. Environmental Resources and Policy
- Ph.D. Geosciences
- Earth Science, Post-Baccalaureate Certificate
- Geographic Information Science, Post-Baccalaureate Certificate
- Sustainability, Post-Baccalaureate Certificate

School of Forestry and Horticulture

- M.S. Forestry

School of Physics and Applied Physics

- M.S. Physics
- Ph.D. Applied Physics

College of Agricultural, Life, and Physical Sciences

- M.S. Biomedical Science

College of Arts and Media

Established in 2021, the College of Arts and Media (CAM) promotes scholarly rigor, innovative experimentation, and creative production. Here, students find opportunities in Advertising, Architecture, Art and Design, Journalism, Media Arts, Music, and Theater. The college’s mix of liberal arts and conservatory programs inspire new generations of gifted artists and designers, as well as curious scholars and storytellers, forged in an environment of vision, depth, knowledge, praxis, and courage. The college boasts a range of nationally accredited and internationally recognized programs, composed of a diverse faculty of respected scholars and award-winning creative professionals who mentor students to achieve academic excellence, to address grand challenges, and find rewarding careers in the 21st century.

The College of Arts and Media consists of 6 academic units: School of Architecture, School of Art and Design, School of Journalism and Advertising, School of Media Arts, the School of Music, and the School of Theater and Dance. Interdisciplinary graduate programs for the School of Journalism and Advertising and the School of Media Arts are administered at the college level.

College of Arts and Media

- M.A. Media Theory and Research
- M.F.A. Mass Communication and Media Arts
- Ph.D. Mass Communication and Media Arts

School of Architecture

- M.Arch. Architecture
- Integrated Path of Architectural Licensure (NCARB IPAL option)

School of Art and Design

- M.F.A. Art
- Art History, Post-Baccalaureate Certificate

School of Journalism and Advertising

- M.S. Professional Media and Media Management Studies

School of Music

- M.M. Music

School of Theater and Dance

- M.F.A. Theater
- Ph.D. Communication Studies (Joint program with School of Communication Studies that includes performance studies)

Admission and Graduation Policies

Admission and graduation policies are established by Graduate School and the programs.

Accreditation

National Architectural Accrediting Board (naab.org)

- M.Arch. Architecture

National Association of Schools of Music (nasm.arts-accredit.org)

- M.M. Music

National Association of Schools of Art and Design (nasad.arts-accredit.org)

- M.F.A. Art
- M.F.A. Mass Communication and Media Arts
- Art History, Post-Baccalaureate Certificate

National Association of Schools of Theatre (nast.arts-accredit.org)

- M.F.A. Art
- Ph.D. Communication Studies (Joint program with School of Communication Studies that includes performance studies)

Contact

Office of the Dean
College of Arts and Media, MC 6606

Carbondale, IL 62901
Phone: 618-453-4308

College of Business and Analytics

The College of Business and Analytics aims to prepare students to perform successfully in business and other organizations such as government and other not-for-profit organizations functioning within a changing social, economic, and political environment. Study provides the student with fundamental principles and practices of organizational behavior and allows the mastering of knowledge and skills for effective management. The curriculum provides a broad base for understanding business while simultaneously allowing in-depth study within an area of concentration and exposure to current information technology. Students find business, governmental units, and other public institutions desire the professional education they receive in the college. The advanced curriculum and related programs provide students not only with a meaningful education but also with a means of relating that education to organizations and commerce.

Faculty members in the College of Business and Analytics undertake both basic and applied research using quantitative, experimental, quasi-experimental, qualitative, and descriptive methods to address important and fundamental issues in the areas of accounting, analytics, economics, finance, hospitality, management, marketing, public administration, and tourism and event management.

- Accounting faculty members contribute to multiple research areas including accounting education, accounting information system, accounting regulation, auditor judgement, auditing theory and practice, big data analytics, capital market, corporate governance, financial reporting quality, fraud auditing, management accounting, risk management, and taxation.
- Economics faculty members conduct research in all areas of economics and publish in leading scholarly journals such as Econometrica, Journal of Economic Theory, and Journal of Econometrics.
- Finance faculty members study issues that include those in corporate finance such as corporate governance, mergers and acquisitions, IPOs etc.; Investment and asset pricing including market anomalies, market microstructure (trading), derivative markets, mutual funds etc.; Banking, financial advisors, and other financial institutions; and other topics such as international finance and behavioral finance.
- Hospitality faculty conduct research on consumer behavior, purchasing habits, and motivations regarding food and beverage products, to include sensory analysis, marketing, and future intentions as well as the effects of recession on various segments of the hospitality industry and implications of technostress for the future of the hospitality industry.
- Management researchers examine issues such as effective business strategies, organizational behavior, organization theory, management information systems, production and operations management, supply chain management, motivation, leadership, team performance, and human resource management.
- Marketing faculty conducts research in branding, consumer behavior, ethics, strategy, promotions, digital marketing, sales, services, retailing, B2B marketing, consumer analytics, international/global marketing issues, public policy, and in nonprofit marketing.
- Public Administration researchers examine the various management issues that contribute to high performing public organizations including goal setting strategies, financial management, organization theory, and managements' capacity to navigate political environments.

The College of Business and Analytics and the three Schools of the College offer the following graduate degrees and post-baccalaureate certificates:

College of Business and Analytics

- M.B.A. Business Administration
- M.P.A. Public Administration
- Ph.D. Business Administration
- Analytics for Managers, Post-Baccalaureate Certificate

School of Accountancy

- M.Acc. Accountancy

- M.P.Acc. Master of Professional Accountancy
- Accountancy Foundation, Post-Baccalaureate Certificate
- Accountancy Analytics, Post-Baccalaureate Certificate
- Accountancy Taxation, Post-Baccalaureate Certificate

School of Analytics, Finance, and Economics

- M.A. Economics
- M.S. Economics
- M.S. Business Analytics
- Ph.D. Economics

The College of Business and Analytics offices are located in Henry J. Rehn Hall, and classes are conducted in various buildings throughout the campus.

Differential Tuition

The College of Business and Analytics assesses College of Business and Analytics majors a differential tuition surcharge of 15% of applicable tuition for declared College of Business and Analytics majors. The College of Business and Analytics has a “minor program fee” for other than College of Business and Analytics majors that is equal to 15% of 15 credit hours of applicable tuition for declared College of Business and Analytics minors. This fee is billed in the semester the student declares the minor.

Accreditation

The following graduate degrees are accredited by the Association to Advance Collegiate Schools of Business International (AACSB).

- M.B.A. in Business Administration
- M.Acc. in Accountancy
- Ph.D. in Business Administration

M.P.A. in Public Administration is accredited by the Network of Schools of Public Policy, Affairs, and Administration (NASPAA).

College of Engineering, Computing, Technology, and Mathematics

Knowledge of engineering, computing, technology, and mathematics is fundamental to satisfy societal needs, develop innovative solutions to address the challenges of tomorrow, and harvest the opportunities available in the future. The College of Engineering, Computing, Technology, and Mathematics at SIU Carbondale provides high quality education so that students can build careers in the area of their choice and serve the society. The College will excel in education and research in engineering, computing, technology, and mathematics through the quality of its programs, faculty, graduates, students, staff, and facilities.

The College of Engineering, Computing, Technology, and Mathematics offers the following graduate degrees and post-baccalaureate certificates in six schools:

College of Engineering, Computing, Technology, and Mathematics

- Ph.D. Engineering Science

School of Applied Engineering and Technology

- M.S. Quality Engineering and Management

School of Civil, Environmental, and Infrastructure Engineering

- M.E. Civil and Environmental Engineering

- M.S. Civil Engineering
- Ph.D. Civil and Environmental Engineering

School of Computing

- M.S. Computer Science
- M.S. Cybersecurity and Cyber Systems (joint degree with the School of Electrical, Computer, and Biomedical Engineering)
- Ph.D. Computer Science
- Cybersecurity, Post-Baccalaureate Certificate

School of Electrical, Computer, and Biomedical Engineering

- M.E. Biomedical Engineering
- M.E. Electrical and Computer Engineering
- M.S. Biomedical Engineering
- M.S. Cybersecurity and Cyber Systems (joint degree with the School of Applied Engineering and Technology)
- M.S. Electrical and Computer Engineering
- Ph.D. Electrical and Computer Engineering

School of Mathematical and Statistical Sciences

- M.A. Mathematics
- M.S. Mathematics
- Ph.D. Mathematics
- Dual Credit Mathematics, Post-Baccalaureate Certificate

School of Mechanical, Aerospace, and Materials Engineering

- M.S. Mechanical Engineering
- Ph.D. Mechanical Engineering

College of Health and Human Sciences

The College of Health and Human Sciences empowers individuals to lead in their professions, embrace lifelong learning, and positively enhance their communities in an inclusive and accessible environment through:

- Outstanding programs in high demand fields;
- Innovative teaching by highly qualified and professionally recognized faculty;
- Experiential learning opportunities to apply classroom knowledge to real world settings;
- Interdisciplinary high-impact research contributing to theory, policy, and practice; and
- Meaningful service that transforms lives.

For complete details regarding major requirements, graduation requirements, and grading refer to the degree program page in the catalog. For additional information on programs and course offerings, see the program section of the catalog or by contacting the College:

- Phone: (618) 536-6682
- Email: chhs@siu.edu

The College of Health and Human Sciences offers the following graduate degrees, concentrations, and post-baccalaureate certificates in five schools:

School of Aviation

- M.S. Aviation Management

School of Health Sciences

- M.H.A. Health Administration
- M.H.I. Health Informatics
- M.S. Communication Disorders and Sciences
- M.S. Counseling and Rehabilitation Education
    - Clinical Mental Health Counseling Concentration
    - Clinical Rehabilitation Counseling Concentration
- M.S. Medical Dosimetry
- M.S. Radiologic Sciences
- DPT Physical Therapy
- OTD Occupational Therapy
- Clinical Leadership, Post-Baccalaureate Certificate
- Healthcare Informatics, Post-Baccalaureate Certificate
- Infection Prevention and Control, Post-Baccalaureate Certificate
- Substance Use Disorders and Behavioral Addictions, Post-Baccalaureate Certificate

School of Human Sciences

- M.P.H. Public Health
- M.S. Human Sciences
    - Exercise Science Concentration
    - Interdisciplinary Human Sciences Concentration
    - Nutrition and Dietetics Concentration
    - Sport and Recreation Administration Concentration
- M.S.W. Social Work
- Ph.D. Population Health
- Gerontology, Post-Baccalaureate Certificate
- Public Health, Post-Baccalaureate Certificate
- Therapeutic Recreation/Recreation Therapy, Post-Baccalaureate Certificate

School of Justice and Public Safety

- M.A. Criminology and Criminal Justice
- M.S. Public Safety Administration
- Ph.D. Criminology and Criminal Justice

School of Psychological and Behavioral Sciences

- M.S. Behavior Analysis and Therapy
- M.A. Psychology
    - Applied Psychology
    - Brain and Cognitive Sciences
    - Clinical
    - Counseling
- M.S. Psychology
    - Applied Psychology Concentration
    - Clinical Concentration
    - Counseling Concentration
    - Experimental Concentration
- Ph.D. Psychology
    - Applied Psychology Concentration
    - Behavioral Analysis and Therapy Concentration
    - Brain and Cognitive Sciences Concentration
    - Counseling Concentration

ACCREDITATION

M.P.H. in Public Health is accredited by Council on Education for Public Health (CEPH)

M.S. in Behavior Analysis and Therapy is accredited by the Association for Behavior Analysis International (ABAI).

M.S. in Medical Dosimetry is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT).

M.S.W. in Social Work is accredited by the Council on Social Work Education (CSWE).

Ph.D. in Psychology – Clinical Concentration is accredited by the American Psychological Association (APA).

Ph.D. in Psychology – Counseling Concentration is accredited by the American Psychological Association (APA).

College of Liberal Arts

The College of Liberal Arts prepares students to read, write and think critically in an increasingly global and rapidly changing world. Our curriculum is enhanced through work across fields, bridging multiple disciplines, and through use of current research and teaching technologies with applications in the liberal arts. Student experiences are augmented with research experiences provided by our faculty, the ability to mix and match majors to suit the student's preferences and needs. A number of research centers, teacher education and second-language acquisition programs are also contained within the college.

The College of Liberal Arts and six schools offer the following graduate degrees and post-baccalaureate certificates:

School of Africana and Multicultural Studies

- Africana Studies, Post-Baccalaureate Certificate
- Women, Gender, and Sexuality Studies, Post-Baccalaureate Certificate

School of Anthropology, Political Science, and Sociology

- M.A. Anthropology
- M.A. Political Science
- M.A. Sociology
- Ph.D. Anthropology
- Ph.D. Political Science
- Ph.D. Sociology

School of Communication Studies

- M.A. Communication Studies
- Ph.D. Communication Studies

School of History and Philosophy

- M.A. History
- M.A. Philosophy
- Ph.D. Historical Studies
- Ph.D. Philosophy

School of Languages and Linguistics

- M.A. Linguistics
- M.A. Teaching English to Speakers of Other Languages

School of Literature, Writing, and Digital Humanities

- M.A. English
- M.F.A. Creative Writing
- Ph.D. English

School of Education

Southern Illinois University Carbondale has been preparing teachers since its beginning as a normal school in 1869. While the School of Education was established in January 2020, it traces its beginning to 1944 when the College of Education was established. Today, the School of Education is comprised of a variety of academic programs offering both undergraduate and graduate degrees in: curriculum and instruction; educational administration and higher education; quantitative methods, special education; and, organizational learning, innovation, and development. Students interested in teaching careers in preschool, elementary and secondary schools, school administration, and workforce and human resource development are encouraged to learn about the School's programs.

The School of Education offers the following graduate degrees and post-baccalaureate certificates:

- M.A.T. Curriculum and Instruction Secondary Education
- M.S.Ed. Curriculum and Instruction
- M.S.Ed. Educational Administration
- M.S.Ed. Higher Education
- M.S.Ed. Organizational Learning, Innovation, and Development
- Ed.D. Educational Administration
- Ph.D. Education
- College Teaching, Post-Baccalaureate Certificate
- Learning and Performance Technology, Post-Baccalaureate Certificate
- Quantitative Methods, Post-Baccalaureate Certificate

School of Law

The Southern Illinois University Carbondale School of Law has established a positive, individualized learning environment that allows students to develop the skills necessary to compete in today's legal market. The low student/faculty ratio (13- to- 1) illustrates the School's commitment to personal education. Students receive the very best in instruction from faculty drawn from distinguished practice and academic settings. The curriculum balances traditional legal education with practical skills training to produce an attorney who understands the law and how to apply it in real-world situations.

The Juris Doctor (JD) degree program is a three-year, full-time day program. The school also offers a Two-Year Honors scheduling option for eligible students. Students must indicate their interest in this option at the time of their application to law school.

In the first year, students take fundamental law courses as well as Lawyering Skills classes that combine legal research and writing, interviewing, counseling, negotiation and oral advocacy. All first-year students take a Professionalism and the Law class. The School has been recognized by the Illinois Supreme Court and the American Bar Association for its leadership in the development of professionalism programs.

SIU Carbondale is one of the few law schools in the country that guarantees its JD students an opportunity to participate in a legal clinic or field placement experience. Students have a variety of experiential learning and extracurricular opportunities including legal clinics, in which they assist actual clients under the supervision of licensed attorneys; externships; moot court; pro bono activities; study abroad; writing and editing for the Southern Illinois University Law Journal or the Journal of Legal Medicine; and more than twenty student organizations.

Professionals who have expertise in the intersection of information systems and the law staff the Law Library and teach in the Lawyering Skills program.

The School offers specializations in: Intellectual Property, Health Law and Policy, International and Immigration Law, Business and Transactional Law, Litigation and Dispute Resolution, and Public Interest Law. Students who complete the requirements for these specializations earn a transcript notation and certificate that will allow them to demonstrate to potential employers their genuine interest and growing expertise in the field.

The School also offers interdisciplinary opportunities including eight joint degree programs in Accountancy (MACC), Social Work (MSW), Public Administration (MPAD), Educational Administration (M.S.Ed), Business Administration (MBA), Electrical and Computer Engineering (ECE), Political Science (Ph.D.) and Medicine (MD). The School's joint JD/MD program, offered in conjunction with the SIU School of Medicine, is one of only a few concurrent law/medicine programs available in the country.

The relationship between the schools of law and medicine offers law students unique opportunities for collaborative learning through the Center for Health Law and Policy.

The School is an accredited provider of continuing legal education programming for Illinois attorneys. Interested students can contact the Office of Admissions by email at lawadmit@siu.edu, by phone at 800/739-9187, or by mail at SIU School of Law, 1150 Douglas Drive, Carbondale, Illinois 62901. Students are also encouraged to visit the School of Law's website at law.siu.edu.

With advance notice, students and parents can request a tour, a meeting with law school staff, and an opportunity to sit in on a current law school class (when class is in session).

The School of Law is fully accredited by the American Bar Association and is a member of the Association of American Law Schools.

School of Medicine

Southern Illinois University School of Medicine was established in 1970 after the Illinois General Assembly passed a bill calling for a second state medical school to be established in downstate Illinois. The School graduated an advanced standing class in 1975 and its charter class of all Illinois students in 1976. Currently, 72 students are admitted each year. Today, the School encompasses a complete sequence of medical education beginning with the M.D. degree and progressing through residency training and on to continuing medical education for practicing physicians.

The medical education curriculum has brought the school national attention. Since students are not evaluated in competition with their peers, they are stimulated to cooperate with one another, a situation that more closely resembles what takes place in the actual practice of medicine. Problem-based learning concepts, including active learning situations with virtual and simulated patients, are used to help students work toward clinical competency throughout the four-year curriculum. The first year of the four-year M.D. degree is taught on the Carbondale campus where students concentrate on the basic sciences. The remaining three years are taught in Springfield where students study clinical medicine along with medical humanities and various electives.

The instructional program in Carbondale is based in Lindegren Hall and Memorial Hospital. In Springfield, it is based in the Medical Instructional Facility, the SIU Clinics, Memorial Medical Center, St. John's Hospital and other locations.

The school offers an M.D.-J.D. dual degree program in conjunction with the SIU School of Law and an M.D.-MPH degree with the SIU College of Health and Human Sciences. The school also oversees a Physician Assistant program in Carbondale.

The School's Medical/Dental Education Preparatory Program (MEDPREP) in Carbondale is designed to assist underrepresented populations and others with educationally disadvantaged backgrounds to prepare for success in medical and dental schools.

The School's residency programs include: dermatology, emergency medicine, family medicine, internal medicine, medicine/psychiatry, neurology, neurosurgery, obstetrics and gynecology, pediatrics, psychiatry, radiology and six surgical specialties. There are twelve fellowships for advanced clinical work.

The School's continuing medical education program provides an extensive schedule of accredited conferences and symposia for physicians and other health-care professionals in central and southern Illinois. Programs are held in Springfield, Carbondale and throughout the School's service area.

The School also offers graduate programs for master's and doctoral degrees in physiology, pharmacology, multidisciplinary biomedical and biological sciences, and a teaching certificate of anatomy. The faculty in Carbondale's and Springfield's basic science departments divide their time between teaching responsibilities and research. Both clinical investigators and basic scientists collaborate on a wide-range of medical and scientific projects; they work in the various basic science laboratories on both campuses and in the clinical facilities located in the affiliated hospitals in Springfield.

Interfaced with its various educational and research programs is the provision of patient care through the various clinical departments and specialized clinics of the School and the practice of its physician faculty.

Preference for admission is given to applicants from central and southern Illinois and other underserved (inner-city, rural) portions of the state. Inquiries regarding admissions and requests for a catalog from the School of Medicine should be addressed to the Director of Admissions, Southern Illinois University School of Medicine, P.O. Box 19624, Springfield, Illinois 62794-9624. More information can found at www.siumed.edu.

Graduate Programs

Accountancy

The current Accountancy degree programs offered are: the Master of Accountancy (M.Acc), the Accelerated Master of Accountancy, the Master of Professional Accountancy (M.P.Acc), a concurrent Juris Doctor and Master of Accountancy (JD/M.Acc.), and multiple post-baccaulearate certificates. Each program is described in more detail below.

Master of Accountancy (M.Acc.) in Accountancy

The objective of the Master of Accountancy (M.Acc.) degree programs is to provide an opportunity for students to achieve greater breadth and depth in the study of accountancy than is possible in the baccalaureate program. As preparation for entry into a dynamic profession the curriculum fosters clear, logical, and analytical thought processes, effective oral and written communications, and life-long learning skills. Graduates pursue careers as professional accountants in public practice, industry, financial institutions, government, and other not-for-profit organizations.

Admission

Applicants for admission to the program are required to:

1. Complete all requirements for admission to graduate study as specified by the Graduate School.
2. Complete all requirements for admission to the Master of Accountancy program to include:
    a. Submission of all postsecondary academic transcripts
    b. Successful completion of a bachelor's degree in accounting prior to enrollment or will need to complete accounting foundation requirements
    c. Submission of a current resume with 2 references provided.
3. Pay a nonrefundable $65 application fee by credit card when submitting the application for Admission to Graduate Study in Accountancy.

Degree Requirements

The Master of Accountancy degree program includes three concentrations from which to choose: 1. Taxation, 2. Auditing/Accounting Information Systems, and 3. General. Degree requirements are dependent upon the concentration chosen.

Taxation Concentration

The taxation concentration is designed to provide in-depth exposure to the basic areas of taxation and to develop competence in the practical application of rules of taxation in the context of business and personal decision-making. Students must complete 30 credit hours of graduate-level course work.

Taxation Core Courses (18 credit hours)*

Six (6) of the following courses must be completed:

- ACCT 541: Tax Concepts (3 CH)
- ACCT 542: Tax Research and Procedure (3 CH)
- ACCT 543: Corporate Taxation (3 CH)
- ACCT 544: Partnership Taxation (3 CH)
- ACCT 545: State and Local Taxation (3 CH)

- ACCT 546: Estate and Gift Taxation (3 CH)
- ACCT 547: Tax Accounting Principles (3 CH)
- ACCT 548: International and Interstate Taxation (3 CH)
- ACCT 549: Tax Planning and Business Strategy (3 CH)

Electives (12 credit hours)

- ACCT 514: Ethics of Business (3 CH)
- ACCT 561: Analytics for Accounting Data (3 CH)
- ACCT 571: Governmental & Not for Profit Accounting (3 CH)
- ACCT 575: CPA Review (3 CH)
- ACCT 595: Internship (3 CH)
- Any 500-level ACCT course not previously taken

Electives will be selected in consultation with the Director of the Master of Accountancy Program.
*Substitutions will be determined in consultation with the Director of the Master of Accountancy program when necessary.

Auditing and Accounting Information Systems Concentration

The Auditing and Accounting Information Systems concentration is designed for those interested in pursuing careers in assurance. The primary objective is to develop conceptual and technical abilities, research competence, and communication and human relation skills.

The program of study is designed to provide in-depth exposure to the basic areas of auditing and accounting information systems and to develop competencies in the practical application of these areas of expertise. Students must complete 30 credit hours of graduate-level coursework.

Auditing and Accounting Information Systems Core Courses (18 credit hours)*

Six (6) of the following courses must be completed:

- ACCT 512C: Accounting Research Methods Seminar-Interpreting Data (3 CH)
- ACCT 532: Advanced Management Accounting (3 CH)
- ACCT 549: Tax Planning and Business Strategy (3 CH)
- ACCT 560: Information Technology Risk and Controls (3 CH)
- ACCT 561: Analytics for Accounting Data (3 CH)
- ACCT 562: Governance, Risk, and Control (3 CH)
- ACCT 563: Advanced Auditing (3 CH)
- ACCT 565: Advanced Accounting Information Systems (3 CH)
- ACCT 567: Fraud Examination (3 CH)
- ACCT 568: Forensic and Investigative Accounting (3 CH)

Elective (12 credit hours)

- ACCT 514: Ethics of Business (3 CH)
- ACCT 571: Governmental & Not for Profit Accounting (3 CH)
- ACCT 575: CPA Review (3 CH)
- ACCT 595: Internship (3 CH)
- Any 500-level ACCT course not previously taken

Electives will be selected in consultation with the Director of the Master of Accountancy Program.
*Substitutions will be determined in consultation with the Director of the Master of Accountancy program when necessary.

General Concentration

The General concentration is designed for those interested in pursuing careers that cover all areas of accounting. This concentration is designed to provide a mix of taxation, auditing, and accounting information systems topics. Students must complete 30 credit hours of graduate-level coursework.

General Core Courses (up to 30 credit hours)*

- ACCT 512C: Accounting Research Methods Seminar-Interpreting Data (3 CH)
- ACCT 543: Corporate Taxation (3 CH)
- ACCT 544: Partnership Taxation (3CH)
- ACCT 560: Information Technology Risk and Controls (3 CH)
- ACCT 561: Analytics for Accounting Data (3 CH)
- ACCT 562: Governance, Risk, and Control (3 CH)
- ACCT 563: Advanced Auditing (3CH)
- ACCT 567: Fraud Examination (3 CH)
- ACCT 568: Forensic and Investigative Accounting (3 CH)
- ACCT 571: Governmental & Not for Profit Accounting (3 CH)

Electives (up to 6 credit hours)

- ACCT 575: CPA Review (3 CH)
- ACCT 595: Internship (3 CH)

Electives will be selected in consultation with the Director of the Master of Accountancy program.
*Substitutions will be determined in consultation with the Director of the Master of Accountancy program when necessary.

Foundation Requirements

A student not having an accountancy degree will be required to complete the following Accountancy Foundation courses (or equivalent). The Accountancy Foundation post-baccalaureate certificate will fulfill this requirement:

- ACCT 500: Financial Foundations (3 CH)
- ACCT 501: Financial Reporting I (3 CH)
- ACCT 502: Financial Reporting II (3 CH)
- ACCT 504: Cost Management (3 CH)
- ACCT 506: Taxation I (3 CH)
- ACCT 509: Assurance Services (3 CH)

Note: The student may request that undergraduate courses taken at universities other than Southern Illinois University Carbondale (SIUC), or that other undergraduate courses taken at SIU Carbondale be evaluated as possible substitutes that would meet the above requirements.

The full-time student who qualifies for the minimum program in terms of course work requirements normally may expect to complete the Master of Accountancy degree in one calendar year (two semesters and one summer session).

In order to meet the graduate requirements, the students must obtain a 3.0 grade point average (4.0 = *A*) and obtain a *B* or better in seventy percent of all graduate-level courses taken after admission to the M.Acc. program or M.P.Acc program.

Double Major Policy

Any graduate student wishing to pursue a double major for a master's degree that includes business administration must satisfy the following requirements in addition to any requirements stated in the Graduate Catalog:

- The individual must satisfy all requirements for admission to the relevant master's program in business (M.B.A or M.Acc.).
- The individual must satisfy all foundation requirements of the relevant master's program in business.
- The individual must complete all core classes, secondary core (M.Acc.) courses, and elective course requirements for the relevant master's program in business.
- No more than six credit hours of coursework outside the College of Business and Analytics may be counted toward elective requirements in the relevant master's program in business.

The post-baccalaureate certificates allow those who want to receive specialized knowledge in different accounting areas. Three post-baccalaureate certificates are offered and the certificates are stackable to allow for the student to obtain the MAcc degree upon completion of two of the post-baccalaureate certificates. The student must be currently enrolled in a graduate degree program at SIUC or an individual holding a bachelor's degree and admitted to the Graduate School.

Accelerated Master of Accountancy (M.Acc.) in Accountancy

The Accelerated Master's Program is designed for motivated and high-achieving students who are currently enrolled in an undergraduate program in the School of Accountancy. The accelerated master's program leads to a Bachelor of Science in Accounting degree and a Master of Accountancy degree by completing 141 credit hours (instead of 150 credit hours if pursued separately).
As early as the first semester of junior year (60 or more credit hours), a student with a GPA of 3.0 overall, working with the MAcc advisor will develop a program of study consistent with the student's interest and goals. To complete the accelerated degree, nine credit hours are double counted toward the undergraduate and the master's degree. Students are considered undergraduates until all requirements for the Bachelor's degree have been fulfilled.
This option is preferred for individuals who recognize the value in an advanced degree as the degree may lead to higher entry positions in their chosen career path, more responsibilities, and greater lifelong earning potential. An associate benefit of the accelerated master's program, to students who have advanced degree aspirations, is the ability to save money by completing their studies quicker.

Master of Professional Accountancy (M.P.Acc.) in Accountancy

The objective of the Master of Professional Accountancy (M.P.Acc.) degree program is to provide an opportunity for students without the accounting foundation to obtain that foundational knowledge and supplement it with additional courses which will focus on a specialized area of accounting. The students will be able to achieve greater breadth and depth in the study of accountancy that will prepare them for entry into the accounting profession. The curriculum fosters clear, logical, and analytical thought processes, effective oral and written communications, and life-long learning skills. Graduates pursue careers as professional accountants in public practice, industry, financial institutions, government, and other not-for-profit organizations.

Admission

Applicants for admission to the program are required to:

1. Complete all requirements for admission to graduate study as specified by the Graduate School.
2. Complete all requirements for admission to the Master of Accountancy program to include:
   a. Submission of all postsecondary academic transcripts.
   b. Submission of a current resume with 2 references provided.
3. Pay a nonrefundable $65 application fee by credit card when submitting the application for Admission to Graduate Study in Accountancy.

Degree Requirements

The Master of Professional Accountancy degree program requires 36 hours and includes 18 hours of accounting core foundation courses and 18 hours to be selected from one of three concentrations:

1. Taxation,
2. Auditing/Accounting Information Systems, and
3. General.

Degree requirements are dependent upon the concentration chosen.

Core Foundation Courses

The Core Foundation Courses are required for each concentration:

- ACCT 500 Financial Foundations (3 CH)
- ACCT 501 Financial Reporting I (3 CH)
- ACCT 502 Financial Reporting II (3 CH)
- ACCT 504 Cost Management (3 CH)
- ACCT 506 Taxation I (3 CH)
- ACCT 509 Assurance Services (3 CH)

Taxation Concentration

The taxation concentration is designed to provide in-depth exposure to the areas of taxation and to develop competence in the practical application of rules of taxation in the context of business and personal decision-making.

Required:

- ACCT 507: Advanced Tax (3 CH)

Plus, five (5) selected from the following courses must be completed:

- ACCT 541: Tax Concepts (3 CH)
- ACCT 542: Tax Research and Procedure (3 CH)
- ACCT 543: Corporate Taxation (3 CH)
- ACCT 544: Partnership Taxation (3 CH)
- ACCT 545: State and Local Taxation (3 CH)
- ACCT 546: Estate and Gift Taxation (3 CH)
- ACCT 547: Tax Accounting Principles (3 CH)
- ACCT 548: International and Interstate Taxation (3 CH)
- ACCT 549: Tax Planning and Business Strategy (3 CH)
- ACCT 575: CPA Review (3 CH)

Auditing and Accounting Information Systems Concentration

The Auditing and Accounting Information Systems concentration is designed for those interested in pursuing careers in assurance. The program of study is designed to provide in-depth exposure to the basic areas of auditing and accounting information systems and to develop competencies in the practical application of these areas of expertise.

Required:

- ACCT 508: Accounting Information Systems (3 CH)

Plus, five (5) selected from the following courses must be completed:

- ACCT 512C: Accounting Research Methods Seminar-Interpreting Data (3 CH)
- ACCT 560: Information Technology Risk and Controls (3 CH)
- ACCT 561: Analytics for Accounting Data (3 CH)
- ACCT 562: Governance, Risk, and Control (3 CH)
- ACCT 563: Advanced Auditing (3 CH)
- ACCT 565: Advanced Accounting Information Systems (3 CH)
- ACCT 575: CPA Review (3 CH)

General Concentration

The General concentration is designed for those interested in pursuing careers that cover all areas of accounting. This concentration is designed to provide a mix of taxation, auditing, and accounting information systems topics.

Required:

- ACCT 507: Advanced Tax (3 CH)
- ACCT 508: Accounting Information Systems (3 CH)

Plus, four (4) selected from the following courses must be completed:

- ACCT 512C: Accounting Research Methods Seminar-Interpreting Data (3 CH)
- ACCT 542: Tax Research and Procedure (3 CH)
- ACCT 543: Corporate Taxation (3 CH)
- ACCT 544: Partnership Taxation (3 CH)
- ACCT 545: State and Local Taxation (3 CH)
- ACCT 548: International and Interstate Taxation (3 CH)
- ACCT 549: Tax Planning and Business Strategy (3 CH)
- ACCT 560: Information Technology Risk and Controls (3 CH)
- ACCT 561: Analytics for Accounting Data (3 CH)
- ACCT 562: Governance, Risk, and Control (3 CH)
- ACCT 563: Advanced Auditing (3 CH)
- ACCT 565: Advanced Accounting Information Systems (3 CH)
- ACCT 567: Fraud Examination (3 CH)
- ACCT 568: Forensic and Investigative Accounting (3 CH)
- ACCT 575: CPA Review (3 CH)

Note: The full-time student who qualifies for the minimum program in terms of course work requirements normally may expect to complete the Master of Professional Accountancy degree in 18 months (three semesters and one summer session).

To meet the graduate requirements, the students must obtain a 3.0 grade point average (4.0 = A) and obtain a B or better in seventy percent of all graduate-level courses taken after admission to the M.P.Acc. program.

Accountancy Certificates

The post-baccalaureate certificates allow those who want to receive specialized knowledge in different accounting areas. The certificates are stackable to allow for the student to obtain the MAcc degree upon completion of multiple post-baccalaureate certificates. The student must be currently enrolled in a graduate degree program at SIUC or an individual holding a bachelor's degree and admitted to the Graduate School.

Certificate in Accountancy Foundation

The Accountancy Foundation consists of courses which provide the student with the necessary foundation in accounting to enter the accounting profession and/or be prepared to take the CPA Exam. This graduate certificate is directed toward students who do not have an accounting undergraduate degree. The program requires students to complete 18 credit hours of graduate level coursework, as follows:

- ACCT 500 Financial Foundations (3 CH)
- ACCT 501 Financial Reporting I (3 CH)
- ACCT 502 Financial Reporting II (3 CH)
- ACCT 504 Cost Management (3 CH)
- ACCT 506 Taxation I (3 CH)
- ACCT 509 Assurance Services (3 CH)

Certificate in Accountancy Analytics

The Accountancy Analytics Certificate will consist of courses which will provide the student with a specialization in Assurance Analytics. This certificate is directed toward students who have the accounting foundation and/or work as an accounting professional who want to get more specialized

knowledge in the assurance analytics area. The program requires students to complete 12 credit hours of graduate level coursework, as follows:

- ACCT 512C Accounting Research Methods Seminar-Interpreting Data (3 CH)
- ACCT 560 Information Technology Risk and Controls (3 CH)
- ACCT 561 Analytics for Accounting Data (3 CH)
- ACCT 563 Advanced Auditing (3 CH)
- ACCT 565 Advanced Accounting Information Systems (3 CH)

Certificate in Accountancy Taxation

The Accountancy Taxation Certificate will consist of courses which will provide the student with a specialization in Taxation. The certificate is directed toward students who have the accounting foundation and/or work as an accounting professional who want to get more specialized knowledge in the taxation area. The program requires students to complete 12 credit hours of graduate level coursework, as follows:

- ACCT 507 Advanced Tax (3 CH)
- ACCT 543 Corporate Taxation (3 CH)
- ACCT 544 Partnership Taxation (3 CH)
- ACCT 545 State and Local Taxation (3 CH)
- ACCT 561 Analytics for Accounting Data (3 CH)

M.Acc./J.D. Concurrent Degrees

A student who has been admitted separately to the School of Law and to the M.Acc. program may apply for permission to study concurrently for both the Juris Doctor and Master of Accountancy degrees. This permission must be requested from both the School of Law and the School of Accountancy, ordinarily prior to entry into the second-year curriculum of the School of Law.

During the first academic year of concurrent work on the two degrees, the student enrolls only in the first-year law curriculum. In any subsequent academic term, the student may enroll for courses either in the School of Law or in the Master of Accountancy program. A student registered for both law and graduate courses in the same term must enroll for a minimum of 10 hours in law, and 12 semester hours in total, in order to meet A.B.A. residence requirements and the academic requirements of the School of Law.

Completion of the concurrent program requires that the student successfully complete 90 credit hours of law courses and 30 credit hours of courses that meet M.Acc. requirements. However, up to nine credit hours of M.Acc. courses may be applied to the 90-hour J.D. requirement and up to nine credit hours of Law School courses may be applied to the 30-credit hour M.Acc. requirement. School of Law courses counting for graduate credit toward the Master of Accountancy degree must be approved by the Director of the Master of Accountancy program.

Differential Tuition

The College of Business and Analytics has a differential tuition surcharge of 15 percent of applicable tuition for graduate College of Business and Analytics majors. The differential tuition surcharge will be assessed at the in-state tuition rate and will be capped at 15 credit hours per semester.

Accountancy Courses

ACCT414 - Business Ethics Examines the philosophical, sociological and legal dimensions of contemporary ethical issues facing the business world today. Stress is on stakeholder analysis and appropriate policy decisions for multinational corporations. Course content centers on actual business cases and hypothetical ethical dilemmas. Credit Hours: 3

ACCT421 - Advanced Accounting Accounting principles and procedures relating to specialized topics in financial accounting and business combinations, resulting in consolidated financial statements, and financial accounting for partnerships. Prerequisite: a grade of C or better in ACCT 322. Restrictions: Accounting majors or minors, 3rd Year standing or higher. Credit Hours: 3

ACCT431 - Advanced Cost Accounting Managerial decision making; profit planning and control through relevant costing, return on investment and transfer pricing, determination of cost behavior patterns, analysis of variances, capital budgeting, inventory models, probabilities, statistical methods, and operations research. Prerequisite: ACCT 331 with grade of C or better. Restrictions: Accounting majors or minors, 3rd Year standing or higher. Credit Hours: 3

ACCT441 - Advanced Tax Study of income tax problems which arise from sole proprietorship, partnership, limited liability company, corporation, estate, and trust. Student does research in source materials in arriving at solutions of complicated problems. Prerequisite: ACCT 341 with grade of C or better. Restrictions: Accounting majors or minors; 3rd Year standing or higher. Credit Hours: 3

ACCT460 - Auditing Provides an overview of processes for planning and executing a risk-based audit; explains the procedures auditors use to evaluate internal controls; describes the tests auditors conduct to substantiate financial statement accounts. Prerequisite: a grade of C or better in ACCT 322. Restrictions: Accounting majors, minors, 3rd Year standing. Credit Hours: 3

ACCT465 - Internal Auditing The course covers internal audit from a broad perspective to include information technology, business processes, and accounting systems. Topics include internal auditing standards, risk assessment, governance, ethics, audit technique, and emerging issues. It covers the design of business processes and the implementation of key control concepts and will use a case study approach that addresses tactical, strategic, systems, and operational areas. Restrictions: Accounting majors or minors. Credit Hours: 3

ACCT468 - Forensic Accounting Coverage of forensic accounting processes and tools used in the detection and prevention of fraud against the company. Topics include skimming, cash larceny, check tampering, billing schemes and others. The course will include the use of computer aids in forensic investigation. Restrictions: Accounting majors and minors. Credit Hours: 3

ACCT500 - Financial Foundations Current accounting objectives, principles, theory, and practice in the preparation, interpretation, and analysis of financial statements for business entities. Will cover principles and theories of accounting, financial statement preparation and specific requirements related to accounting for current assets and liabilities. A student may not receive credit for both ACCT 320 and ACCT 500. Credit Hours: 3. Credit Hours: 3

ACCT501 - Financial Reporting I Continuation of the study of current accounting objectives, principles, theory, and practice in the preparation, interpretation, and analysis of financial statements for business entities. Will cover principles and theories of accounting, financial statement preparation and specific requirements related to accounting for revenue recognition, assets, and long-term liabilities. A student may not receive credit for both ACCT 321 and ACCT 501. Credit Hours: 3. Credit Hours: 3

ACCT502 - Financial Reporting II Continuation of the study of accounting principles and procedures with emphasis on liabilities, corporate capital, and income determination. Preparation and use of special statements; analysis and interpretation of statements. A student may not receive credit for both ACCT 322 and ACCT 502. Prerequisite: ACCT 501 with a C or better. Credit Hours: 3

ACCT503 - Financial Reporting III Accounting principles and procedures relating to specialized topics in financial accounting and business combinations, resulting in consolidated financial statements, and financial accounting for partnerships. Course covers specialized topics including derivatives and hedge accounting, foreign currency accounting, not-for-profit accounting. A student may not receive credit for ACCT 421 and ACCT 503. Prerequisite: ACCT 502 with a grade of C or better. Credit Hours: 3

ACCT504 - Cost Management Managerial decision making; profit planning and control through relevant costing, return on investment and transfer pricing, determination of cost behavior patterns, analysis of variances, capital budgeting, inventory models, probabilities, statistical methods, and operations research. A student may not receive credit for both ACCT 331 and ACCT 504. Credit Hours: 3

ACCT505 - Advanced Cost Management Managerial decision making; profit planning and control through relevant costing, return on investment and transfer pricing, determination of cost behavior patterns, analysis of variances, capital budgeting, inventory models, probabilities, statistical methods, and operations research. A student may not receive credit for both ACCT 431 and ACCT 505. Prerequisite: ACCT 504 with a grade of C or better. Credit Hours: 3

ACCT506 - Taxation I Background, principles, and procedures for the determination of taxable income as a basis for federal income tax. Particular attention is given to those aspects, which are at variance with usual accounting treatment in the determination of net income. Includes practice in the methodology of tax solutions. A student may not receive credit for both ACCT 341 and ACCT 506. Credit Hours: 3

ACCT507 - Advanced Tax Study of income tax problems which arise from sole proprietorship, partnership, limited liability company, corporation, estate, and trust. Student does research in source materials in arriving at solutions of complicated problems. A student may not receive credit for both ACCT 441 and ACCT 507. Prerequisite: ACCT 506 with a grade of C or better. Credit Hours: 3

ACCT508 - Accounting Information Systems Accounting information systems analysis and design. Focusing on internal controls, data modeling, databases, documentation tools and information retrieval to improve business decisions. A student may not receive credit for both ACCT 360 and ACCT 508. Credit Hours: 3

ACCT509 - Assurance Services Provides an overview of processes for planning and executing a risk-based audit; explains the procedures auditors use to evaluate internal controls; describes the tests auditors conduct to substantiate financial statement accounts. A student may not receive credit for both ACCT 460 and ACCT 509. Prerequisite: ACCT 502 with a grade of C or better. Credit Hours: 3

ACCT510 - Accounting Analytics This course enhances students' understanding of how business and data analytics are utilized in accounting, covering their significance, techniques, and consequences through practical examples of basic and advanced analytics concepts. It provides hands-on experience across various accounting domains such as audit, fraud detection, financial and managerial accounting. By completing this course, students will acquire a basic comprehension of how data analytics intertwines with accounting and the ability to employ this understanding in real world accounting-related decision making. Prerequisite: A grade of C or better in ACCT 322 or ACCT 502. Co-requisite: ACCT 460 or ACCT 509. A student may not receive credit for both ACCT 481 and ACCT 510. Credit Hours: 3. Credit Hours: 3

ACCT512A - Accounting Research Methods Seminar-Theoretical Frameworks Describes and explains methods for examining research questions about professional judgment in accounting. May be repeated for credit but sections (a) through (d) can be taken only once. Credit Hours: 3

ACCT512B - Accounting Research Methods Seminar-Research Design Describes and explains methods for examining research questions about professional judgment in accounting. May be repeated for credit but sections (a) through (d) can be taken only once. Credit Hours: 3

ACCT512C - Accounting Research Methods Seminar-Interpreting Data Describes and explains methods for examining research questions about professional judgment in accounting. May be repeated for credit but sections (a) through (d) can be taken only once. Credit Hours: 3

ACCT512D - Accounting Research Methods Seminar-Alternative Research Methods Describes and explains methods for examining research questions about professional judgment in accounting. May be repeated for credit but sections (a) through (d) can be taken only once. Credit Hours: 3

ACCT512E - Accounting Research Methods Seminar-Special Topics Describes and explains methods for examining research questions about professional judgment in accounting. May be repeated for credit but sections (a) through (d) can be taken only once. Credit Hours: 3

ACCT514 - Ethics of Business (Same as BA 514) Philosophical implications of contemporary issues in business ethics. Restricted to enrollment in M. Acc. or consent of school. Credit Hours: 3

ACCT521 - Emerging Issues in Accountancy Identifies developing areas in financial accounting and forces students to research the issues, to think critically, evaluate alternatives and communicate conclusions in oral and written form. International accounting, not-for-profit, standard setting and regulation, and other developing issues are addressed. The Journal of Accountancy, other professional

journals, and guest speakers. Prerequisite: ACCT 321, ACCT 322 or ACCT 501, ACCT 502. Credit Hours: 3

ACCT532 - Advanced Management Accounting Management planning and control decisions and design and evaluation of management accounting systems requiring formal models and application of vigorous analytic reasoning. Integration and synthesis of techniques such as regression analysis, linear programming, decision theory and behavioral science for important decisions of the form. Information economics. Contemporary research directories. Restricted to enrollment in M.Acc. or M.B.A. program. Credit Hours: 3

ACCT541 - Tax Concepts Provides the student with an understanding of the nature of the federal tax law and an appreciation of the law's impact upon business decisions both for individuals and companies. Prerequisite: ACCT 441 or ACCT 507 with C or better. Credit Hours: 3

ACCT542 - Tax Research and Procedure Provides the student with a working knowledge of the tax practitioner's methodology applied to the solution of both routine and complex tax problems. Prerequisite: ACCT 441 or ACCT 507 with C or better. Credit Hours: 3

ACCT543 - Corporate Taxation (Same as LAW 514) Provides students with in-depth exposure to federal income taxation of corporations and shareholders. Areas explored are corporate formations, distributions, redemptions, liquidations, corporate income tax, accumulated earnings tax, personal holding company tax, and affiliated corporations. Prerequisite: ACCT 441 or ACCT 507 with C or better. Credit Hours: 3

ACCT544 - Partnership Taxation (Same as LAW 515) Provides students with in-depth exposure to federal income taxation of partnerships, partners and related LLCs and owners. Areas explored are the definition of a partnership, acquisition of an interest, basis of interest, tax accounting for partnership, subchapter S, or LLC operation, distributions, termination, sale or exchange of interest, collapsible partnerships, death or retirement and tax shelters. Prerequisite: ACCT 441 or ACCT 507 with C or better. Credit Hours: 3

ACCT545 - State and Local Taxation This course will focus on the legislative and judicial evolution of the present tax systems. Basic concepts of state and local taxation, such as jurisdiction, commerce clause restrictions, uniformity, apportionment and taxation of e-commerce, will be examined. One of the primary objectives of this class is to ensure that students are familiar with the myriad of U.S. Supreme Court decisions delineating the taxing authority of state and local government entities in relation to the commerce, due process, equal protection and supremacy clauses of the U.S. Constitution. Students will also learn to interpret and analyze complex court decisions. Restricted to enrollment in the M.Acc. or M.B.A. program. Credit Hours: 3

ACCT546 - Estate and Gift Taxation Provide basic principles of federal estate and gift taxation. Credit Hours: 3

ACCT547 - Tax Accounting Principles Provides linkage of accounting skills with tax knowledge through identification of significant differences between tax and financial accounting and selection of tax accounting principles having a significant impact on cash flows. Tax accounting problems for industrial, wholesale and retail companies. Credit Hours: 3

ACCT548 - International and Interstate Taxation Examination of tax issues when taxable events or transactions cross international or state borders. Use of transfer pricing for international taxation purposes. Specific international taxation problems of foreign persons, U.S. citizens living abroad, U.S. shareholders of foreign corporations and problems related to multinational corporations. Also will examine issues of nexus and other principles guiding state taxation of persons and businesses involved in interstate commerce. Credit Hours: 3

ACCT549 - Tax Planning and Business Strategy Tax planning is the process of arranging one's financial affairs to legally minimize tax liability and maximize after-tax wealth. This course develops a student's ability to identify, understand, and evaluate tax-planning opportunities. The focus is on tax planning concepts and the effects of taxes on business decisions. Topics may include choice of entity, investments, compensation planning, retirement planning, and an introduction to mergers and

divestitures. Prerequisites: ACCT 341 (or equivalent), and ACCT 441 (or equivalent) with a grade of C or better. Credit Hours: 3

ACCT560 - Information Technology Risk and Controls Explains how organizations govern their investment in IT through strategic alignment, risk assessment, and performance measurement. Describes processes for evaluating and monitoring the effectiveness of IT general controls related to processing operations, system security, and change management. Prerequisite: ACCT 360. Restriction: enrollment as a graduate student. Credit Hours: 3

ACCT561 - Analytics for Accounting Data This course focuses on how managers and auditors can use information technology to (a) identify trends in business process performance, and (b) evaluate the veracity of financial information by analyzing patterns that manifest in accounting data. Restricted to enrollment in the M.Acc. or M.B.A program or with instructor approval. Credit Hours: 3

ACCT562 - Governance, Risk, and Control Explains how management identifies and evaluates conditions that increase the risk of failing to achieve business objectives, and how organizations design and implement procedures to control business risk. Describes practices the board of directors rely on to govern enterprise risk management processes by monitoring and assessing the effectiveness of the organization's response to risk. Credit Hours: 3

ACCT563 - Advanced Auditing Explains how auditors evaluate business risk, fraud risk, inherent risk, and control risk to assess the risk of misstatement in accounts while planning an audit engagement. Examines analytical procedures, the code of professional conduct, auditor reporting requirements, and auditor legal liability. Prerequisite: ACCT 460. Restriction: enrollment as a graduate student. Credit Hours: 3

ACCT564 - Enterprise Systems Enterprise Systems (ERP systems) and technologies have become prevalent in many companies. This course will examine the technical overview of Enterprise Systems and their impact on organizations. The concepts, fundamentals and framework of the advanced systems will be explored to better understand the integration of Enterprise Systems in an organization. A better understanding of Enterprise Systems and its affect on an organization will be gained. Restricted to enrollment in the M.Acc. or M.B.A. programs. Credit Hours: 3

ACCT565 - Advanced Accounting Information Systems Advanced study in the systems that are used in companies especially database. Students will not be successful as auditors or internal accountants without database skills. The course would include advanced design issues, advanced query and data analysis skills (for internal and external purposes), db controls, db technology, etc. Prerequisite: ACCT 360. Credit Hours: 3

ACCT566 - Accounting Research This course will provide research skills that are critical in Accounting. Students will identify a research topic, develop the research questions, conduct the research, and prepare a research document. The student will be exposed to how research is conducted and will develop the necessary skills to perform accounting research. Credit Hours: 3

ACCT567 - Fraud Examination Fraud examination will cover the principles and methodology of fraud detection and deterrence. The course includes such topics as skimming, cash larceny, check tampering, register disbursement schemes, billing schemes, payroll and expense reimbursement schemes, non-cash misappropriations, corruption, accounting principles and fraud, fraudulent financial statements, and interviewing witnesses. Credit Hours: 3

ACCT568 - Forensic and Investigative Accounting Coverage includes: (1) investigative techniques and forensic accounting processes and tools used in the detection and prevention of fraud against a business entity; (2) definitions and descriptions of various fraudulent schemes; (3) litigation services provided by accountants including expert testimony; (4) methods of calculating losses and damages; and (5) basics of the use of computer aids in forensic investigation. Credit Hours: 3

ACCT569 - Seminar - Selected Audit/Systems Topics Provides students with in-depth exposure to audit and/or accounting systems as it relates to selected topics. Topics will vary from semester depending upon instructor and topics of current interest to the accounting discipline. Credit Hours: 3

ACCT571 - Governmental and Not for Profit Needs Financial and managerial accounting concepts peculiar to the planning and administration of public and quasi-public organizations such as governmental units, institutions, and charitable organizations. Also includes the study of governmental auditing standards. Credit Hours: 3

ACCT575 - MAcc Capstone-CPA Review Capstone course covering financial accounting and reporting, IFRS, governmental accounting, not-for-profit accounting, auditing and attestation, business law, taxation, and business environment and concepts. Emphasis will be reinforcing the knowledge and critical thinking skills necessary for problem solving and communication in the accounting profession. Credit Hours: 1-3

ACCT591 - Independent Study Directed independent study in selected areas of accountancy. Restricted to enrollment in M.Acc. Program. Credit Hours: 1-6

ACCT595 - Internship Supervised work experience in professional accounting. Prerequisite: outstanding record in accounting and recommendation of the school committee on internship. Graded S/U only. Credit Hours: 3

ACCT599 - Thesis Restricted to enrollment in M.Acc. Program. Credit Hours: 3-6

ACCT601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Accountancy Faculty

Bao, Xiaoyan "May", Associate Professor, School of Accountancy, C.P.A., Ph.D., University of Nebraska-Lincoln, 2013; 2020. Financial accounting, taxation.

DeBlois Patrice, Associate Lecturer, C.P.A., M.Acc., Southern Illinois University, 2012; 2022. Financial and managerial accounting.

Farah, Nusrat, Assistant Professor, C.P.A., Ph.D., Oregon State University, 2020; 2020. Financial and cost accounting, auditing, data analytics.

Hurley, Timothy, Clinical Associate Professor, C.P.A., J.D., LL.M., New York University School of Law, 2009; 2022. Taxation.

Islam, Md. Shariful, Assistant Professor, C.P.A., D.B.A., C.M.A., Louisiana Tech University, 2019; 2019. Accounting information systems, auditing, data analytics.

Karnes, Darla, Senior Lecturer, C.P.A., M.Acc., Southern Illinois University, 2000; 2000.

Morris, Marc E.,

Odom, Marcus, Professor, C.P.A., C.F.E., Ph.D., Oklahoma State University, 1993; 1998. Accounting information systems, auditing.

O'Donnell, Ed, Professor, C.P.A., Ph.D., University of North Texas, 1995; 2009. Auditing, accounting analytics, accounting information systems.

Williams, Benna, Associate Lecturer and Program Coordinator, C.P.A., M.Acc., Southern Illinois University, 2006; 2017. Financial accounting, taxation.

Zheng, Shucui, Clinical Associate Professor, Ph.D., Southern Illinois University, 2019; 2017. Managerial accounting, taxation.

Emeriti Faculty

Hendricks, Scott P., Clinical Assistant Professor, Emeritus, C.P.A., M.Acc., J.D., Southern Illinois University, 1983; 1980.

Karnes, Allan, Professor, Emeritus, C.P.A., M.Acc., J.D., Southern Illinois University, 1986; 1977.

Wacker, Raymond, Associate Professor, Emeritus, C.P.A., Ph.D., University of Houston, 1989; 1989.

Africana Studies

The Graduate Certificate (post-baccalaureate) in Africana Studies requires 18 credit hours of graduate level coursework and independent study. Within these 18 credit hours, nine credit hours must be taken outside the student's primary discipline, including Africana Studies graduate level courses cross-listed in Anthropology, Communication Studies, History, Music, Philosophy, Psychology, Theater, and Women, Gender, and Sexuality Studies. Three credit hours of independent graduate readings are also required. The student must be currently enrolled in a graduate degree program at SIUC or an individual holding a bachelor's degree and admitted to the Graduate School (non-declared major).

Africana Studies Courses

AFR401 - Atlantic History (Same as HIST 401) This course examines the origins and development of the Atlantic basin as an intercommunication zone for African, European and American societies from the mid-15th century through the early-19th century. Themes include transformation of environments, forced and voluntary migrations, emergence of distinct Atlantic culture communities, development of Atlantic economics and formulation and implementation of Atlantic revolutionary ideologies. Credit Hours: 3

AFR410H - African Expressive Culture (Same as ANTH 410H) This course examines aspects of African expressive culture including the visual arts, music, dance, orature, cinema, drama, and ceremony from an anthropological perspective. Particular attention is given to analysis of African expressive culture in social context and the role of the arts in the practice of politics, religion, medicine, and other aspects of African life. Many of the expressive genres examined deal with historical representation and political resistance. Therefore, this course provides insights into African history and politics through the creation of African artists. Credit Hours: 3

AFR413 - African Film (Same as ANTH 413) This course examines the history and social significance of African film from cultural, aesthetic, political, and economic perspectives. Credit Hours: 3

AFR416 - Black Feminist Thought as Theory and Praxis Explore the roots, contemporary manifestations, and current embodiments of Black feminist thought. Explore the works of Black women to engage in critical thinking and thoughtful dialogue that positions the valuable knowledge, experiences and perspectives of women of color at the center of inquiry while simultaneously discovering spaces for multicultural alliances. Credit Hours: 3

AFR420 - Themes in Africana Drama (Same as THEA 460) Explores significant themes in African and African American drama, with special attention to performance styles and cultural issues. Credit Hours: 3

AFR447 - Communicating Race and Ethnicity (Same as CMST 447) Via intercultural theories and methods, this course explores histories, relationships, interactions and recent events by positioning racial and ethnic perspectives at the center of inquiry. The course critically examines the complexities of race, racism and ethnicity by focusing on how people communicate across racial and ethnic differences in different contexts. Credit Hours: 3

AFR452A - Traditions of Uppity Women's Blues (Same as MUS 452A, WGSS 452A) Examines the tradition of "uppity" women's blues from the so-called "classic" blues singers of the 19th century (Gertrude "Ma" Rainey, Bessie Smith, Ida Cox, etc.) to the contemporary blues of Saffire, Denise LaSalle and others. Explores ways blues women challenge conventions of gender and sexuality, racism, sexism, classism, and homophobia. Restricted to 3rd Year/4th Year/graduate music major or consent of instructor. Credit Hours: 3

AFR452B - Blues and Boogie Woogie Piano Styles (Same as MUS 452B) Traces the history, culture, and stylistic developments of blues and boogie woogie piano. Explores socio-cultural contexts and

examines key players, pieces, and musical styles. Restricted to 3rd Year/4th Year/graduate music major or consent of instructor. Credit Hours: 3

AFR460 - Slavery and The Old South (Same as HIST 460) This course examines slavery and southern distinctiveness from the colonial period to 1861. Discussion topics include the plantation system, race relations, women and slavery, and southern nationalism. Credit Hours: 3

AFR461 - Black Americans on the Western Frontier (Same as HIST 461) This course examines the history of African Americans in the American West. Taking both a chronological and thematic approach, it begins with a discussion of early black explores in the age of encounter, and ends with a focus on black western towns established in the United States by the 1880's. Credit Hours: 3

AFR465 - Governments and Politics of Sub-Saharan Africa An examination of the impact of western colonial rule on the societies and politics of Africa, the method by which these colonial areas became sovereign states in the post-World War II era, the role of domestic political institutions, African political thought and behavior, and the development of foreign policies regarding relations with other African states, continental and international organizations, and international organizations, and non-African states. Credit Hours: 3

AFR472 - Psychology of Race and Racism This course reviews the history and evolution of the construct of race as a psychological phenomenon. While the course will be largely psychological in nature, the pervasiveness of race in practically every sphere of life necessitates a multidisciplinary approach. The course will emphasize a theoretical and conceptual approach toward understanding the psychology of racialized thinking. Prerequisite: PSYC 211. Crosslisted with PSYC 470. Credit Hours: 3

AFR473 - Comparative Slavery (Same as HIST 473) A comparative study of slavery from antiquity to its abolition in the 19th century with the differing socio-cultural, political and economic contexts; organized chronologically, regionally, and thematically. Credit Hours: 3

AFR475 - Education and Black America This course uses the best scholarship of cultural anthropology and social studies to look at the history of education in the African American community; how public education affects African American families; how school shape cultural change and how racial, ethnic peer group, and gender issues help determine curriculum issues. For graduate credit. Credit Hours: 3

AFR478 - Southern Africa, 1650-1994 (Same as HIST 478) An examination of Southern African history with emphasis on South Africa from 1652 to 1994. Topics to be covered include conflicts and wars, migrations and state formations, the economics of minerals, industrialization and the Anglo-Boer War, intertwined histories of race relations, the politics of exclusion and apartheid, and the making of modern South Africa. Credit Hours: 3

AFR491 - Independent Readings in Africana Studies Special topics, focused on research needs of students who are regularly enrolled in upper-division courses, especially graduate students doing research in Africana related topics in other departments and programs. May be repeated for up to six credit hours. Special approval needed from the director of the AFR program. Credit Hours: 3

AFR494 - Methodology Seminar in Africana Studies This course provides the theoretical framework for research in the field of Africana Studies. Students will investigate the foundations of the field of Black Studies, from the arguments of Maulena Karenga and Molefi Asante, to the challenges of scholars such as Manning Marable, James Turner and other recent scholars. Students will pursue individual research projects appropriate to various academic disciplines which constitute the field of Africana Studies. May be taken for graduate credit. Credit Hours: 3

AFR495 - African Cultural Continuities: Study Abroad Study abroad 4-6 week program is designed to introduce similarities in culture (food, dance, music, family traditions, religion) of people in Ghana and in the cultures of people in the African diaspora. Class begins on the SIUC campus and will relocate to Elmina and Cape Coast, Ghana, during the first year of a three-year sequence. Other years will locate in areas of the West Indies, Caribbean & Central America. May be taken for graduate credit. Special approval needed from the instructor. Credit Hours: 3-9

AFR496 - Slave Narratives Using compilations of the 19th and early 20th century body of work known as "Slave Narratives", students will organize research projects that discover selected major themes

of Africana Studies. The course will be useful to students from various academic disciplines (such as Psychology; Music; Sociology; History; Philosophy; Education; Literature; and Theology, among others) as they place Slave Narratives in the center of Africana and American Studies scholarship. May be taken for graduate credit. Credit Hours: 3

AFR497 - The U.S. Civil Rights Movement (Same as HIST 487) This course provides an overview of the history of the Civil Rights Movement while engaging major debates in the field of Black Freedom Studies. Central themes will include the impact of the Cold War, the roles of women, and the relationship of civil rights to black power. We will also discuss the difference between popular memory and historical scholarship as well as the meaning of such discussions for contemporary issues of racial and economic justice. Credit Hours: 3

AFR499 - Special Topics in Africana Studies Topics vary and are announced in advance. May be repeated as the topic varies. No prerequisites. Credit Hours: 3-9

AFR499A - History of African American Philosophy (Same as PHIL 451) A survey of major thinkers and themes in the history of African American Philosophy from colonial times to the 20th century. Credit Hours: 3

AFR499B - Philosophy of Race (Same as PHIL 455) A survey of critical examination of a range of theories on the nature and meaning of "race", the intersection of race with class and gender, and the promotion of racial progress. Such theories include racial realism and idealism, racial biologism, cultural race theory, social constructivist theory, integrationism, separatism, racial eliminativism, cosmopolotianism, and especially critical race theory. Credit Hours: 3

AFR499C - Topics in Africana Philosophy (Same as PHIL 459) A seminar on varying topics, themes, and figures in African, African American, and/or Caribbean Philosophy, e.g., "W.E.B. Du Bois and His Contemporaries," "Pan Africanism," "Philosophies of Liberation," "Black Feminism," " Contemporary African Philosophy," "Philosophies of the Caribbean. Credit Hours: 1-6

AFR501 - Testimonies of Liberation: The Slave Narratives as a Foundation for Africana Research In the seminar, a deep appreciation of the various texts that are the testimonies of the enslaved Africans in the United States help shape the research strategies of students who wish to do focused studies of African American and American culture, by discovering the themes of resistance, persistence and transcendence as these themes were articulated and employed by generations of enslaved Africans in what is now the United States. Students engage in close critical and cultural readings of slave narratives; folklore texts; musical testimonies (folk songs and Spirituals), petitions and other records. Credit Hours: 3

AFR502 - Multicultural Competence Seminar The course deals with issues of human diversity broadly defined to include race, ethnicity, culture, nationality, religion, sexual orientation, gender identity, and ability. It explores the contours of difference and the dynamics of diversity, privilege, and oppression in domestic and global contexts. It also examines authentic cultural voices, understanding these voices, how to interact with them and be able to find individual and group cultural voices in a diverse society and how to apply the knowledge in a larger global sphere. Credit Hours: 3

AFR559 - Topics in Africana Philosophy A seminar on varying topics, themes, and figures in African, African American, and/or Caribbean Philosophy, e.g., "W.E.B. Du Bois and His Contemporaries," "Pan-Africanism," "Philosophies of Liberation," "Black Feminism," "Contemporary African Philosophy," "Philosophies of the Caribbean. Credit Hours: 3

Africana Studies Faculty

Brown, Joseph A., Director, School of Africana and Multicultural Studies; Coordinator, Africana Studies program, Ph.D., Yale University, 1984; 1997.

Chipasula, Frank M., Professor, Ph.D., Black American Studies, English, Brown University, 1987; 2005.

Cohen, Theodore W., Associate Professor, Ph.D., History, University of Maryland, College Park, 2013; 2021.

Gadzekpo Leonard K., Associate Professor and Interim Director, Ph.D., American Culture Studies, M.F.A., Drawing and Painting, Bowling Green State University, 1997; 1998.

Smith, Joseph L., Assistant Professor, Ph.D., Philosophy, Southern Illinois University Carbondale, 2020; 2021.

Agribusiness Economics

The School of Agricultural Sciences offers a Master of Science degree in Agribusiness Economics. A program of concurrent study leading to the award of two master's degrees: the Master of Business Administration and Master of Science in Agribusiness Economics can be undertaken. An interdisciplinary degree at the Master of Science level may be achieved by completing requirements as a double degree major.

Master of Science (M.S.) in Agribusiness Economics

Admission

Graduate students with a grade point average of 2.7 or better (4.0 scale) on the entire last undergraduate GPA earned at the time of application and demonstrated competence in economics, statistics, mathematics, and agricultural economics are admitted unconditionally to the ABE Master of Science degree program. Students with insufficient background may be admitted contingent upon demonstration of satisfactory completion of undergraduate courses in deficient areas.

This program requires a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in Agribusiness Economics. Applicants must pay this fee by credit card, (inquiries should be directed to the Agribusiness Economics program, Agriculture Building, Room 226, Mail Code 4410, 1205 Lincoln Drive, Southern Illinois University Carbondale, Carbondale, IL 62901-4410).

Agribusiness Economics Concentration

Through selected coursework and research students may focus in resource and environmental economics, economic and rural development, agribusiness management and finance, agricultural marketing and prices, farm production management, or international trade and agricultural policy.

The Master of Science in Agribusiness Economics with a concentration in agribusiness economics is awarded upon completion of required coursework with a minimum graduate grade point average of 3.0 (4.0 scale) in either of two options; a thesis or a non-thesis (research paper) option.

The thesis option requires satisfactory completion of thirty hours of graduate credit. This includes nine credit hours in structured agribusiness economics courses: ABE 500, ABE 571, and ABE 572. Fifteen credit hours of elective graduate credit are selected based upon recommendation from the agribusiness faculty member directing the student's thesis work. A research component including six credit hours of ABE 599 and an oral examination is required. This option is preferred for individuals with Ph.D. aspirations at SIU Carbondale or other institutions.

The non-thesis option requires satisfactory completion of 30 hours of graduate credit. This includes nine credit hours in structured agribusiness economics courses: ABE 500, ABE 571, and ABE 572. Twenty-one credit hours of elective graduate credit are selected based upon recommendation from the agribusiness faculty member acting as the student's research paper advisor. Six of these credit hours must include a research component of three credit hours of ABE 593 and an oral presentation of the student's research paper. This option is preferred for individuals seeking a career in the public sector or with private industry. With proper course selection and timely research component development, a student could complete the non-thesis option in one year's time.

Agricultural Services Concentration

The agricultural services concentration is designed to permit individuals who are professionals in private industry or public service to earn a Master of Science degree in Agribusiness Economics while remaining fully employed in the agricultural sector.

Other individuals may be admitted after request and consideration by the ABE graduate committee and approval of the graduate director.

The agricultural services concentration requires satisfactory completion of thirty hours of graduate credit. 15 credit hours must be in Agribusiness Economics or related disciplines, of which three credit hours must be ABE 593, where a student-initiated research paper or special project will be completed under the direction of a faculty advisor.

M.B.A./M.S. in Agribusiness Economics Concurrent Degree

The School of Agricultural Sciences and the College of Business and Analytics offer a concurrent degree program leading to both the Master of Business Administration and the Master of Science in Agribusiness Economics. The separate M.B.A. degree requires completion of 32 credit hours of coursework; the M.S. with a major in ABE requires the completion of 30 credit hours (thesis option) or 30 credit hours (non-thesis option). In the concurrent M.B.A./M.S. degree program, the College of Business and Analytics accepts six credit hours of ABE approved coursework, and ABE accepts six credit hours of College of Business and Analytics approved coursework. The result is that the concurrent degree requires completion of 26 credit hours of College of Business and Analytics approved courses and 24 credit hours of ABE approved courses (thesis option) or 30 credit hours of ABE approved courses, or a decrease of 12 credit hours from pursuing both degrees separately.

The M.S. ABE, as a part of this option, requires satisfactory completion of ABE 500, ABE 571, ABE 572, and additional elective credit hours. A research component of a thesis (thesis option) or research paper (non-thesis option) as specified for the Agribusiness Economics concentration must be completed for award of the M.S. ABE degree.

Students interested in enrolling in the concurrent M.B.A./ M.S. ABE degree program must apply to and be accepted by both the graduate programs in the School of Agricultural Sciences and the College of Business and Analytics. The student then may request permission to pursue the concurrent degree. Students enrolled in either the M.B.A. or M.S. ABE may subsequently seek permission to pursue the concurrent degree. Admission to the concurrent degree must be completed at least one semester before the last semester of registration at SIUC. The student must complete the requirements of the concurrent degree program to receive both the M.B.A. and ABE M.S. If the student elects, after acceptance into the concurrent degree program, to pursue either, but not both, the M.B.A. or M.S. ABE, all requirements of the individual degree program must be satisfied.

Accelerated Master's Degree

The “4 year +1” accelerated master's program allows motivated and high achieving students to complete a program leading to an undergraduate Bachelor of Science degree and a Master of Science degree in Agribusiness Economics in five years. As early as 2nd Year (3rd Year for transfer students), a student working with a faculty advisor will develop a program of study consistent with the student’s interest and goals. To complete this five-year plan, 141 credit hours are required. Nine credit hours are double counted toward an undergraduate and a master’s degree. 21 credit hours are taken after undergraduate graduation.

The option requires satisfactory completion of nine credit hours in structured agribusiness economics courses: ABE 500, ABE 571 (or ABE 471 if taken at the undergraduate level), and ABE 572 (or ABE 472). 21 hours of elective graduate credit, which may include ABE credit hours at the 400-level taken as an undergraduate, are selected based upon recommendation of a faculty advisor. Six of these credit hours must be at the 500-level. As with the traditional ABE master’s program, ABE 593, Individual Research, is required as students complete a research project during the fifth year of study. It is expected that working with a faculty advisor the student will begin development of the research project during the undergraduate senior year. A service component, ABE 591, taken during the fifth year, entails working in an unpaid research assistantship capacity, or upon petition to the graduate director, an unpaid research assistant.

This option is preferred for individuals who recognize the value in an advanced degree as the degree may lead to higher entry positions in their chosen career path, more responsibilities, and greater life-long earning potential. An associate benefit of the accelerated master's program, to students who have advanced degree aspirations, is the ability to save money by completing their studies quicker.

Agribusiness Economics Courses

ABE401 - Agricultural Law Relations of common-law principles and statutory law to land tenure, farm tenancy, farm labor, farm management, taxation, and other problems involving agriculture. Restricted to junior standing or consent of instructor. Credit Hours: 3

ABE402 - Problems in Agribusiness Economics Designed to improve the techniques of agribusiness economics workers through discussion, assignment, and special workshops on problems related to their field. Emphasis will be placed on new innovative and currently developed techniques for the field. Special approval needed from the chair. Credit Hours: 1-6

ABE405 - Management of Ethanol Production Facilities This course is offered in cooperation with the National Corn-to-Ethanol Laboratory and provides a comprehensive introduction to the management and operation of an ethanol facility as well as overview of today's biofuels industry. Topics include: ethanol industry trends and bio-fuels future, corn-to-ethanol production processes, operations control and management, products and co-products, and environmental topics. Credit Hours: 3

ABE419 - Entrepreneurship in Agribusiness Students will understand the importance of entrepreneurs to the food, agriculture, and rural economies; learn characteristics common to successful entrepreneurs; prepare a business plan; use information resources to support a business plan; and become proficient in developing professional reports using information technology software. Prerequisite: ABE 350 or 351 or 360. Credit Hours: 3

ABE440 - Natural and Environmental Resource Economics and Policy Students will study the application of socioeconomic principles to problems related to natural and environmental resources. The course covers the policy context within which policies related to natural and environmental resources are developed and implemented as well as the range of policy tools available for addressing environmental/ natural resource problems. The institutional setting for dealing with natural and environmental resources is presented along with the role of property rights and entitlements. Contemporary resource problems are used as examples. Prerequisite: six hours of agribusiness economics, economics, or geography; graduate status; or consent of instructor. Credit Hours: 3

ABE442 - Energy Economics and Policy Economics principles and methods are used to examine economic and policy issues relevant to energy production and use. Topics include: key aspects of energy supply, demand, markets, and regulation; environmental externalities of fuel production and use; the relationships among energy use, economic growth and the environment; alternative energy sources. Prerequisite: 6 hours of agribusiness or general economics, geography, or consent of instructor. Credit Hours: 3

ABE450 - Advanced Farm Management Application of production economic principles and modern decision-making techniques to farm management problems. The importance of information, sources of agricultural risk and management of risk in farm planning will be integrated. Prerequisite: ABE 350 or equivalent and University Core Curriculum mathematics required. Credit Hours: 3

ABE451 - Appraisal of Rural Property Principles and practices of rural and farm appraisal. Applications of sales comparison, income capitalization and cost approaches for estimating market value. Consequences of environmental liabilities and regulations on appraisal practices. Understanding of special valuation methods for buildings, insurance, assessments, loans and condemnations. Prerequisite: ABE 350 or consent of instructor. Field trips not to exceed $10. Credit Hours: 3

ABE452 - Advanced Financial Management in Agriculture Advanced topics on small agricultural business management accounting practices and financial management are taught to gain knowledge on advanced financial record keeping and financial business management. Financial statements are

analyzed with an emphasis on managerial accounting. This is a three credit-hour course taught on a 50-minute lecture format on three days each week. In addition, students would learn advanced record keeping in Quickbooks, an accounting software installed in the labs. Prerequisite: ABE 351 with a grade of C or better. Credit Hours: 3

ABE453 - Agribusiness Planning Techniques Application of mathematical programming to agribusiness and farm planning, including enterprise selection, resource allocation, least cost ration formulation, decision making under risk and uncertainty, transportation and location problems. Emphasis placed on modeling problems and interpretation of results. Restricted to junior standing or consent of instructor. Credit Hours: 3

ABE460 - Agricultural Price Analysis and Forecasting The focus is on the measurement and interpretation of factors affecting agricultural prices. Methods to analyze the seasonal, cyclical, and trend components of commodity prices are presented. Formal forecasting techniques, including an introduction to statistical and regression methods, are used and explained. Emphasis is placed on the presentation, communication, and evaluation of forecasts in a business environment. Students are given an opportunity to perform applied price analysis and present the results. Prerequisite: ABE 318, 362 or equivalent. Credit Hours: 3

ABE461 - Agriculture Business Management Examination of agribusiness firm management with emphasis on the management and control of financial resources and the interrelationship between the agribusiness firm and human resource management. Other topics in agribusiness will include effective communication in the management process, business ethics, and workable credit programs for customers. Prerequisite: ABE 351 and 360 or equivalent. Credit Hours: 3

ABE462 - Advanced Agricultural Marketing Advanced treatment of marketing issues from both theoretical and practical decision-making perspectives. Marketing margins, intertemporal, and spatial price relationships are reviewed in detail. Historical and current grain and livestock price series are utilized in decision-making exercises. Prerequisite: ABE 362 or equivalent. Credit Hours: 3

ABE463 - Managerial Strategies for Agribusiness Application of Industrial Organization and Strategic Management (Competitive Strategy) principles to address economic and managerial issues related to agriculture and food industries. Particular emphasis on applying those principles to explain structural changes taking place in the agriculture and food supply chain in the United States. Prerequisite: ABE 204, 350 or 360, ECON 240. Credit Hours: 3

ABE471 - Resource Allocation in the Agribusiness Firm An examination of resource allocation in the agribusiness firm. Production decisions, agricultural product price analysis and decision making models are considered. Student cannot receive credit for ABE 471 if credit has been received for ABE 571. Prerequisite: six hours of agricultural economics or economics. Special approval needed from the instructor. Credit Hours: 3

ABE472 - Problems and Policies of the Agricultural Sector An analytical survey of agricultural policy issues including agricultural price and income stabilization; international trade, capital and credit, the structure of agriculture and the quality of life in rural areas. Student cannot receive credit for ABE 472 if credit has been received for ABE 572. Prerequisite: six hours of agricultural economics or economics or instructor approval. Credit Hours: 3

ABE500 - Agribusiness Economics Research Methodology Research methodology as used in agriculture, including research problem definition, hypothesis formation, research design specification and development of research proposals. Both survey methodology and applied techniques, i.e. multiple regression and time series models, for developing and evaluating agricultural economic models are investigated. Credit Hours: 3

ABE502 - Environmental Decision Making This course's primary objectives are for the student to gain a firm understanding of the fundamentals of environmental decision making, to be able to communicate conversantly across disciplines in a policy setting and understand the role integrated modeling plays in environmental management. In this course, case studies in U.S. environmental history and policy will be used to provide the student with context for how past environmental decisions have set the template for contemporary natural resource management and policy. Topics to be covered in this course

include regulatory approaches, market-based environmental management, structured decision making, federalism, water rights, and river management. Credit Hours: 3

ABE544 - Agricultural Development Students are introduced to economic growth and development theory at an intermediate level. Topics include trends in development in North America and study of theories. The economic theories covered address how growth occurs in developed economies including classical and neoclassical, central place and endogenous growth theories among others. Students who have completed ABE 444 are ineligible to enroll. Prerequisites: 6 hours of agribusiness or general economics, geography, or consent of instructor. Credit Hours: 3

ABE545 - Methods of Regional Economic Analysis Students are introduced to regional economic methods at an intermediate level. Students will learn concepts and tools commonly used in regional and community economic analysis. Students will learn to use regional input-output analysis and more technical regional economic models designed to capture spatial economic variables. Students who have completed ABE 445 are ineligible to enroll. Prerequisite: ABE 444 or consent of instructor. Credit Hours: 3

ABE553 - Advanced Financial Management in Agriculture Advanced topics on small agricultural business management accounting practices and financial management are taught to gain knowledge on advanced financial record keeping and financial business management. Financial statements are analyzed with an emphasis on managerial accounting. This is a three credit-hour course taught on a 50-minute lecture format on three days each week. In addition, students would learn advanced record keeping in Quickbooks, an accounting software installed in the labs. Prerequisite: ABE 351 with a grade of C or better. Credit Hours: 3

ABE571 - Resource Allocation in the Agribusiness Firm An examination of resource allocation in the agribusiness firm. Production decisions, agricultural product price analysis and decision making models are considered. Student cannot receive credit for ABE 571 if credit has been received for ABE 471. Prerequisite: six hours of agricultural economics or economics. Special approval needed from the instructor. Credit Hours: 3

ABE572 - Problems and Policies of the Agricultural Sector An analytical survey of agricultural policy issues including agricultural price and income stabilization; international trade, capital and credit, the structure of agriculture and the quality of life in rural areas. Student cannot receive credit for ABE 572 if credit has been received for ABE 472. Prerequisite: six hours of agricultural economics or economics. Special approval needed from the instructor. Credit Hours: 3

ABE581 - Seminar in Agribusiness Economics Seminar on current research and issues in agribusiness economics on topics such as farm management, farm policy, agricultural marketing, farm finance, agricultural prices and international agriculture. Credit Hours: 1-4

ABE585 - Practicum/Internship Supervised work experience at the graduate level with a public or private agency or firm through which a graduate student can acquire practical professional training to complement their academic course work and research. Credit Hours: 1-3

ABE588 - International Graduate Studies University residential graduate study program abroad. Prior approval by the program is required both for the nature of program and the number of semester hours of credit. Credit Hours: 1-8

ABE590 - Readings Readings in specialized topics under the direction of an approved graduate faculty member. Graded S/U only. Credit Hours: 1-4

ABE591 - Experiential Learning A research/teaching experiential learning course designed to allow the student to gain practical research development, classroom management and/or mentoring experience under the guidance of an assigned faculty member. A typical experience may include such activities as assisting a faculty member with class project design and management, assisting in research proposal development, or participating as a mentor in the College of Agricultural, Life, and Physical Sciences 121 (Ideas to Investigation) initiative. Credit Hours: 3

ABE593 - Individual Research Directed research in selected topics under the supervision of an approved graduate faculty member. Graded S/U only. Credit Hours: 3

ABE599 - Thesis Work in the research for and presentation of a thesis under the supervision of an approved faculty member. Graded S/U only. Credit Hours: 1-6

ABE601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Agribusiness Economics Faculty

Altman, Ira J., Professor and Interim Director, Ph.D., University of Missouri, 2005; 2006.

Asirvatham, Jebaraj, Associate Professor, Ph.D., University of Illinois, 2011; 2015.

Moon, Wanki, Professor, Ph.D., University of Florida, 1995; 2000.

Rendleman, C. Matthew, Professor, Ph.D., Purdue University, 1989; 1994.

Sanders, Dwight R., Professor, Ph.D., University of Illinois, 1999; 2000.

Emeriti Faculty

Beaulieu, Jeffrey R., Associate Professor, Emeritus, Ph.D., Iowa State University, 1984; 1983.

Beck, Roger J., Professor, Emeritus, Ph.D., Pennsylvania State University, 1977; 1984.

Eberle, Phillip R., Associate Professor, Emeritus, Ph.D., Iowa State University, 1983; 1983.

Harris, Kim S., Associate Professor, Emeritus, Ph.D., University of Illinois, 1985; 1984.

Herr, William M., Professor, Emeritus, Ph.D., Cornell University, 1954; 1957.

Kraft, Steven E., Professor, Emeritus, Ph.D., Cornell University, 1976; 1980.

Agricultural Sciences

The School of Agricultural Sciences offers a graduate program leading to the Doctor of Philosophy (Ph.D.) degree. This degree is designed to provide students with an interdisciplinary doctoral education in the physical, biological and social sciences that enhances, regulates and sustains agriculture, food and forestry producers, industries and agencies. This degree will prepare Ph.D. in Agricultural Sciences graduates to teach and conduct research and outreach at universities and community colleges, and for careers in the corporate, private and government sectors.

Doctor of Philosophy (Ph.D.) in Agricultural Sciences

Admission

All applications to the program must include a Graduate School on-line Application available at gradschool.siu.edu, a statement of interest, college transcripts, three letters of recommendation, GRE scores including verbal and quantitative, and may include a financial assistance form. In addition, this Program requires a non-refundable $65 application fee. Criteria for admission include: an official transcript, letters of recommendation, grade point average (must meet the SIUC Graduate School minimum 3.25 GPA in graduate work), and GRE scores. The Graduate Committee of the School of Agricultural Sciences must approve admission to the Ph.D. in Agricultural Sciences program. Ph.D. students will be selected on a national and international competitive basis.

Students may be admitted to the doctoral program with a Bachelor's, a Master of Science or a Master of Arts degree in Agriculture, a discipline within the SIUC School of Agricultural Sciences, or a closely related field (such as Biology, Botany, Natural Science, Rural Sociology, Economics, or Environmental

Science). Upon nomination of the master's committee and upon approval by the School of Agricultural Sciences doctoral program committee, exceptional M.S. students may be allowed accelerated entry to the Ph.D in Agricultural Sciences program.

Students admitted under direct or accelerated entry to the Ph.D. in Agricultural Sciences program are subject to all existing requirements for the doctoral degree; the admission/advisory committee for the student may add extra requirements based on the student's background.

Requirements

Each doctoral student in the School of Agricultural Sciences must successfully complete a common core of research methodology courses, including a two-semester sequence of graduate level statistics courses for four to five credit hours each, followed by a three to four credit hour graduate level experimental design course. Students also will be required to take a three-credit hour course in Research and Teaching Communications, two semesters of graduate seminar, and 24 credit hours of dissertation credits. There will be an additional minimum of 20 credit hours of structured courses appropriate for each student's area of emphasis. The student's graduate advisory committee must approve these courses. Emphasis areas include: Agricultural Economics, Agricultural Systems Technology, Agricultural Education, Animal Science, Biotechnology, Crop Science and Environmental Management, Forestry, Horticulture, Plant Pathology, and Renewable Energy.

All Ph.D. in Agricultural Sciences students in the program will be required to teach or assist in teaching at least two courses within the School of Agricultural Sciences while in the program. This requirement is regardless of the form of stipend of the student, i.e. if a student is on a research assistantship throughout their tenure in the program, they will still be required to teach or assist in teaching courses.

There is no minimal credit-hour requirement beyond the core, the area of emphasis, and the Graduate School's residency and dissertation requirements. A student in consultation with their major professor will prepare a program of study, including courses in the student's area of emphasis, by the end of the second semester of residency. This plan of study, when approved by the student's advisory committee, will be filed with the Director of Graduate Studies for the School.

Ph.D. in Agricultural Sciences Candidacy

By the end of the second semester in residence, students must have chosen an area of emphasis and formed a graduate advisory committee to approve their coursework and oversee their dissertation research. The graduate advisory committee will consist of at least five graduate faculty members, with the majority from within the School of Agricultural Sciences and no more than three members from one program. The committee chair will be the student's major professor and must be a member of the School of Agricultural Sciences faculty.

To be admitted to candidacy, the student must have completed the Graduate School's 24-credit hour residency requirement within four calendar years, plus the core and emphasis area coursework that was approved by their graduate advisory committee. This should take the student three to four semesters, depending on whether they had any graduate-level research methodology courses during their Master's degree. At this time, they will take both written and oral preliminary examinations designed and administered by the student's graduate advisory committee. These exams will each have two parts. One will focus on the student's knowledge of the research methodology core and the second part will focus on the student's chosen area of emphasis. If the preliminary examinations are not passed, a student must wait a minimum of three months for the second and final attempt to pass the exam.

After passing the written and oral preliminary exams and with an approved dissertation proposal, the student will be admitted to candidacy. The Graduate School requires that Ph.D. in Agricultural Sciences students fulfill all degree requirements within five years of admission to candidacy or they may have to retake their preliminary exams.

Dissertation and Dissertation Examination

By the beginning of the fifth semester of residence, the students will present to their graduate committee a dissertation research proposal. The student's committee must approve the proposal by the end of their fifth semester of residence. At this time, students must present their dissertation proposal verbally in the form of a graduate seminar. All faculty members in the School of Agricultural Sciences, the student's

graduate advisory committee, all other graduate students in the School, and appropriate individuals from industry groups in southern Illinois will be invited to these seminars. Following the seminar, the student will meet with their graduate advisory committee and will be asked to defend the substance and methods of the proposed research.

The student's graduate advisory committee will monitor the student's progress on the dissertation. When the dissertation is completed to the satisfaction of the graduate advisory committee, the committee will administer a final oral exam that will focus on defense of the dissertation. When the dissertation and final oral exam are successfully completed, the student will be recommended to the Graduate School for the doctoral degree.

Agricultural Sciences Courses

AGSC550 - Research and Teaching Communications This course is designed to teach graduate students how to communicate successfully their proposed and completed research and to teach college-level courses in the Agricultural Sciences. Credit Hours: 3

AGSC581 - Seminar Oral presentations by individual graduate students. Each Ph.D. student in Agricultural Sciences is required to present their proposed dissertation research project as a seminar and the findings of their dissertation as a seminar. All Agricultural Science Ph.D. students must register for at least two credits of seminar. Credit Hours: 1

AGSC582A - Colloquium in Agricultural Science-Biological Sciences Recent developments in Agricultural Sciences will be discussed in a classroom setting. Credit Hours: 1-3

AGSC582B - Colloquium in Agricultural Science-Social Sciences Recent developments in Agricultural Sciences will be discussed in a classroom setting. Credit Hours: 1-3

AGSC582C - Colloquium in Agricultural Science-Physical Sciences Recent developments in Agricultural Sciences will be discussed in a classroom setting. Credit Hours: 1-3

AGSC590 - Graduate Readings in Agricultural Science Journal articles, chapters and books relevant to a Ph.D. student's research will be read and discussed with their major professor. Credit Hours: 1-4

AGSC591 - Individual Research in Agricultural Science Directed research in approved specialized topic areas in Agricultural Sciences. Credit Hours: 1-4

AGSC592 - Special Problems in Agricultural Science Directed study of specialized areas of Agricultural Science, depending on the program of the student. Credit Hours: 1-4

AGSC595 - Instruction in Agricultural Sciences Acquaints the student with different teaching environments and styles. Students will be expected to participate in instruction of agricultural sciences courses. Special approved needed by the instructor. Credit Hours: 1-6

AGSC600 - Dissertation This course is to be taken during the research and writing of the dissertation. A minimum of 24 hours must be earned for the Doctor of Philosophy degree. Credit Hours: 1-12

AGSC601 - Continuing Enrollment For those Doctoral students who have not finished their degree programs and who are in the process of working on their dissertation. The student must have completed a minimum of 24 hours of dissertation research before being eligible to register for this course. Concurrent enrollment in any course is not permitted. Credit Hours: 1

Agricultural Sciences Faculty

AbuGhazaleh, Amer A., Professor, Ph.D., South Dakota State University, 2002; 2004.

Akamani, Kofi, Assistant Professor, Ph.D., University of Idaho, 2011; 2015.

Altman, Ira J., Associate Professor and Interim Director, Ph.D., University of Missouri, 2005; 2006.

Apgar, Gary A., Associate Professor, Ph.D., Virginia Polytechnic Institute and State University, 1994; 1998.

Asirvatham, Jebaraj, Assistant Professor, Ph.D., University of Illinois, 2011; 2015.

Banz, William J., Professor, Ph.D., University of Tennessee, 1995; 1995.

Bond, Jason P., Professor, Ph.D., Louisiana State University, 1999; 2000.

Carver, Andrew, Professor, Ph.D., Purdue University, 1998; 1998.

Choudhary, Ruplal, Associate Professor, Ph.D., Oklahoma State University, 2009; 2009.

Fakhoury, Ahmad M., Professor, Ph.D., Purdue University, 2001; 2003.

Gastal, Eduardo L., Professor, Ph.D., University of Wisconsin-Madison, 1999; 2009.

Groninger, John W., Professor, Ph.D., Virginia Polytechnic Institute and State University, 1995; 1997.

Henry, Paul H., Associate Professor, Ph.D., North Carolina State University, 1991; 1992.

Holzmueller, Eric J., Associate Professor, Ph.D., University of Florida, 2006; 2007.

Jones, Karen L., Professor, Ph.D., Texas A&M, 1999; 1999. Animal biotechnology.

Kantartzi, Stella, Professor, Ph.D., Aristotle University of Thessaloniki, 2006; 2008.

Meksem, Khalid, Professor, Ph.D., University of Cologne, Germany, 1995; 2000.

Moon, Wanki, Professor, Ph.D., University of Florida, 1995; 2000.

Nielsen, Clayton, Professor, Ph.D., Southern Illinois University Carbondale, 2001; 2009.

Park, Logan, Associate Professor, Ph.D., Virginia Polytechnic Institute and State University, 2009; 2009.

Pense, Seburn L., Associate Professor, Ph.D., Oklahoma State University, 2002; 2003.

Perry, Erin R., Assistant Professor, Ph.D., University of Missouri-Colombia, 2010.

Rendleman, C. Matthew, Associate Professor, Ph.D., Purdue University, 1989; 1994.

Ruffner, Charles M., Professor, Ph.D., Pennsylvania State University, 1999; 1999.

Sanders, Dwight R., Professor, Ph.D., University of Illinois, 1999; 2000.

Schoonover, Jon E., Associate Professor, Ph.D., Auburn University, 2005; 2006.

Smith, Sylvia F., Associate Professor, Ph.D., University of Tennessee, 2007; 2007.

Taylor, Bradley H., Associate Professor, Ph.D., Ohio State University, 1982; 1982.

Walters, S. Alan, Professor, Ph.D., North Carolina State University, 1997; 1998.

Watson, Dennis, Associate Professor, Ph.D., Michigan State University, 1987; 2002.

Williard, Karl W. J., Professor, Ph.D., Pennsylvania State University, 1999; 1999.

Zaczek, James J., Professor, Ph.D., Pennsylvania State University, 1994; 1997.

Emeriti Faculty

Arthur, Robert, Professor, Emeritus, Ph.D., University of Missouri, 1970; 1977.

Ashraf, Hea-Ran L., Professor, Emerita, Ph.D., Iowa State University, 1979; 1980.

Beaulieu, Jeffrey R., Associate Professor, Emeritus, Ph.D., Iowa State University, 1984; 1983.

Beck, Roger J., Associate Professor, Emeritus, Ph.D., Pennsylvania State University, 1977; 1984.

Chong, She-Kong, Professor, Emeritus, Ph.D., University of Hawaii, 1979; 1979.

Diesburg, Kenneth L., Assistant Professor, Emeritus, Ph.D., Iowa State University, 1987; 1989.

Eberle, Phillip R., Associate Professor, Emeritus, Ph.D., Iowa State University, 1983; 1983.

Endres, Jeannette M., Professor, Emerita, Ph.D., St. Louis University, 1972; 1980.

Harris, Kim S., Associate Professor, Emeritus, Ph.D., University of Illinois, 1985; 1984.

Hausler, Carl L., Associate Professor, Emeritus, Ph.D., Purdue University, 1970; 1970.

Kammlade, W. G., Jr., Associate Professor, Emeritus, Ph.D., University of Illinois, 1951; 1954.

King, Sheryl S., Professor, Emerita, Ph.D., University of California, Davis, 1983; 1983.

Klubek, Brian P., Professor, Emeritus, Utah State University, 1977; 1978.

Kraft, Steven E., Professor, Emeritus, Ph.D., Cornell University, 1976; 1980.

Kroening, Gilbert H., Professor, Emeritus, Ph.D., Cornell University, 1965; 1969.

Legacy, James, Professor, Emeritus, Ph.D., Cornell University, 1976; 1977.

Long, Sara, Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1991; 1991.

McGuire, James M., Professor, Emeritus, Ph.D., North Carolina State University, 1961; 1993.

Midden, Karen L., Professor and Dean, Emerita, M.L.A., University of Georgia, 1983; 1988. Landscape design.

Minish, Gary L., Professor, Emeritus, Ph.D., Michigan State University, 1966; 2004.

Olsen, Farrel J., Professor, Emeritus, Ph.D., Rutgers University, 1961; 1971.

Preece, John E., Professor, Emeritus, Ph.D., University of Minnesota, 1980; 1980.

Schmidt, Michael, Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1994; 1979.

Shoup, W. David, Professor, Emeritus, Ph.D., Purdue University, 1980; 1999.

Stucky, Donald J., Professor, Emeritus, Ph.D., Purdue University, 1963; 1970.

Tweedy, James A., Professor, Emeritus, Ph.D., Michigan State University, 1966; 1966.

Welch, Patricia, Professor, Emerita, Ph.D., Southern Illinois University, 1982; 1982.

Wolff, Robert L., Professor, Emeritus, Ph.D., Louisiana State University, 1971; 1972.

Young, Anthony W., Professor, Emeritus, Ph.D., University of Kentucky, 1969; 1980.

Animal Science

The School of Agricultural Sciences offers programs of study leading to the Master of Science degree in Animal Science. Programs may be designed either as thesis or non-thesis in the various disciplines of nutrition, reproductive physiology, biotechnology and/or growth and development with emphasis on beef cattle, dairy cattle, horses, swine, companion animals, fish or humans. Other animal or cell culture systems are sometimes used as research models.

Master of Science (M.S.) in Animal Science

Admission

Admission to programs administered by the School of Agricultural Sciences must be approved by the Graduate Programs Committee. Application forms are available online at gradschool.siu.edu/applygrad. Applicants must have the registrar of each college previously attended send official transcripts directly to the Animal Science program. This program requires a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in Animal Science. Applicants pay this fee by credit card.

Requirements

Minimum requirements for students entering the M.S. in Animal Science program are:

1. A bachelor’s degree in Animal Science, Dairy Science, Biological Sciences, or related field
2. A 3.0 cumulative undergraduate G.P.A. or better (A = 4.0) on the entire last undergraduate GPA earned at the time of application
3. 300 cumulative score; 3.0 analytical writing score on the Graduate Record Exam (GRE)
4. Statement of Research Interests
5. Three letters of recommendation (at least two from undergraduate professors)
6. TOEFL exam for international students. Students can be admitted with a G.P.A. between 2.7 and 3.0 on a conditional basis and must enroll in a minimum of seven credit hours of structured courses

during their first semester and achieve a B or better in each course or be dropped from the program. Undergraduate courses cannot be given graduate credit

Minimum requirements for the M.S. in Animal Science degree may be fulfilled by satisfactory completion of 32 hours of graduate credit, with a minimum of 20 credit hours inside animal science, at least eight credit hours outside the School of Agriculture Sciences, and coursework must be 500-level graduate courses. Additional University requirements are stated in the SIUC Graduate Catalog. Specific required course work includes:

1. Two semesters of ANS 581 (Seminar)
2. Two semesters of graduate-level statistics
3. A minimum of one semester of upper-level biochemistry
4. One to three credit hours of ANS 595

Each student, whether in the thesis or non-thesis option, will be mentored by a member of the Animal Science Faculty designated as the major professor. The major professor will serve as the research mentor and academic advisor. A graduate advisory committee will be selected with consultation of the major professor. The committee will consist of no fewer than three graduate faculty members. Two members of the committee must be from the Animal Science Faculty, and one of the members of the committee must be from outside the program. The major professor will chair the student's graduate committee.

All candidates in the thesis option are required to conduct original research. All candidates in the non-thesis option cannot take ANS 599 (Thesis) for graduate credit. All students are encouraged to participate in research within the program to provide a broader experience. Each M.S. in Animal Science degree candidate must pass a comprehensive oral examination covering all graduate work including the thesis or research paper.

Information concerning admission policies, requisites for graduation, and availability of financial assistance for graduate study in animal science may be obtained from the School of AgriculturalSciences, Southern Illinois University Carbondale, MC 4417, Carbondale, IL 62901 or 618-453-2329.

Research and teaching efforts for students consistently occur at the 2,000-acre SIUC Agricultural Research and Education Laboratories, which include a beef facility, a sow farrow-to-finish facility, an equine facility, and a unit focused on canine performance and management utilizing student and community provided dogs. The farm facilities serve the instructional and research focus by enabling and utilizing active, hands-on experiences for undergraduate and graduate students. Stakeholder feedback supports the critical thinking and experiential learning opportunities afforded by the use of the livestock facilities associated with the program.

Accelerated Master's Degree

For outstanding students, the Animal Science (ANS) program offers a 4 year + 1 year accelerated Bachelor of Sciences (B.S.) and Master of Science (M.S.) degree option. The eligible student could take up to 9 hours of graduate level courses from approved undergraduate electives and have them count toward both the B.S. and M.S. degrees. As early as 2nd Year (3rd Year for transfer students), a student working with a faculty advisor would develop a program of study consistent with the student's interest and goals. To complete this five-year plan, up to 9 credit hours would double count toward an undergraduate and a master's degree. Students could take as few as 23 credit hours (32 total credit hours) after undergraduate graduation. Because the M.S. program requires that a student work on research, efforts related to developing and starting a research project in consultation with graduate mentor-advisor will be required prior to conditional acceptance into the program. The credit hours in the accelerated program must be declared prior to the conferral of the undergraduate degree.

Animal Science Courses

ANS409 - Equine Science Designed for students interested in the more scientific aspects of equine physiology and management. The class will take a more advanced look at anatomy and physiology of

the systems of the equine and consider how they relate to selection, use and management. Lecture and laboratory. Prerequisite: ANS 219 and 331. Fee: $50. Credit Hours: 4

ANS415 - Advanced Animal Nutrition Advanced principles and practices associated with digestion, absorption, and metabolism of nutrients as related to domestic monogastrics, ruminants and horses. Prerequisite: ANS 215 and 315. Credit Hours: 4

ANS419 - Stable Management Designed for the advanced equine student planning a career in the horse field. Mastery of in-depth management techniques on an applied basis is emphasized. Farm, animal and personnel management are practiced. Extensive out-of-class practice time is expected. Prerequisite: ANS 409 with a grade of C or better. Lab fee: $90. Credit Hours: 4

ANS420 - Companion Animal Behavior-Animals at Work This course focuses on the behavior of dogs and horses and will incorporate hands-on training techniques as well as pack/herd observation. Students will understand the difference between classical and operant conditioning, negative and positive reinforcement and will have the opportunity to observe social behavior, reproductive behavior, eating behaviors as well as dominant and submissive behaviors. Key features of the course include a study of the work that dogs and horses perform for man as well as a history of how those working relationships developed. All students with a passion for animals are encouraged to enroll. Lab fee: $50. Credit Hours: 3

ANS421 - International Animal Production A study of world animal production practices with emphasis on the developing countries. Adaptability of animals to environmental extremes and management practices employed to improve productivity. Prerequisite: ANS 121. Restricted to junior standing. Credit Hours: 2

ANS422 - Nutritional Management of Zoo Animals The class will provide students with the most recent information on nutrients requirements and feeding of zoo animals. Students will also learn about zoo animals digestive system and physiology, feeding behavior, nutrition disorders and diseases. Field trips to local zoos. Prerequisite: ANS 215 and ANS 315 with grades of C or better. Credit Hours: 4

ANS425 - Biochemical Aspects in Nutrition (Same as HND 425) The interrelationship of cell physiology, metabolism and nutrition as related to energy and nutrient utilization, including host needs and biochemical disorders and diseases requiring specific nutritional considerations. Prerequisite: ANS 215 or HND 320, CHEM 140B, PHSL 201 and 208. Credit Hours: 3

ANS426 - Comparative Endocrinology (Same as PHSL 426, ZOOL 426) Comparison of mechanisms influencing hormone release, hormone biosynthesis, and the effects of hormones on target tissues, including mechanisms of transport, receptor kinetics, and signal transduction. Prerequisites: ANS 331 or ZOOL 220 or PHSL 310 with a minimum grade of C. Laboratory/Field Trip fee: $15. Credit Hours: 3

ANS428 - Nutritional Management of Zoo Animals The class will provide students with the most recent information on nutrient requirements and feeding of zoo animals. Students will also learn about zoo animals' digestive system, feeding behavior, physiology, nutrition disorders, and diseases. Prerequisites: ANS 215 and ANS 315 with grades of C or better. Credit Hours: 4

ANS429 - Equine Enterprise Management Study of the diverse horse industry and business management practices involved with the operation of a successful horse enterprise. Analysis of a commercial horse operation will be explored through an in-depth, self-directed farm project. Field trips and guest speakers will inform students for the farm project. An on-campus horse event will be planned and executed as a class project. Prerequisites: ANS 409, ABE 350 or 351. Field trip fee: $40. Credit Hours: 2

ANS430 - Dairy Cattle Management Application of the principles of breeding, physiology, and economics to management of a profitable dairy herd. Breeds of dairy cattle, housing, milking practices, and quality milk production. Prerequisite: ANS 315. Lab/Field trip fee: $50. Credit Hours: 4

ANS431 - Reproductive Physiology Comparative anatomy and physiology of the male and female reproductive system of domestic animals; hormones; reproductive cycles; mating behavior; gestation and parturition; sperm physiology; collection and processing of semen; artificial insemination, pregnancy tests; diseases. Course includes a weekly lab. Prerequisite: ANS 121, ANS 331. Laboratory fee: $50. Credit Hours: 4

ANS433 - Introduction to Agricultural Biotechnology (Same as AGSE 433, CSEM 433, HORT 433, PLB 433, PSAS 433) This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene mapping, cloning, transfer, and expression will be derived. Restricted to senior standing. Credit Hours: 3-7

ANS434 - Physiology of Lactation Anatomy and physiology of milk secretion; endocrine control; milk precursors and synthesis; milk composition; physiology and mechanics of milking; lactation-related disorders and diseases; transgenic milk. Prerequisite: ANS 331. Credit Hours: 2

ANS435 - Agricultural Molecular Biotechnology Seminar (Same as CSEM 435) Molecular biology is rapidly making important contributions to agricultural science through biotechnology. An appreciation of the techniques of molecular biology and their application to plant improvement is important to all in agriculture and biology. The relationships between plant molecular biology and the biotechnology industry will be discussed. Presentations on particular research problems will be made. Graded P/F only. Credit Hours: 1-4

ANS445 - Companion Animal Clinical Nutrition Nutrition and feeding management of canine and feline during obesity, cancer, diabetes, urolithiasis, dental disease, dermatological disease, hepatic and gastrointestinal disorders, mobility and muscular disorders, heart diseases, and critical care. Prerequisite: ANS 215 with a grade of C or better. Credit Hours: 4

ANS455 - Animal Nutrient Management Scope and problems associated with animal nutrient management; current regulations and laws on environmental protection. Principles covering waste management technology and current livestock nutrient management systems are presented. Field trips will be scheduled. Restricted to junior standing. Credit Hours: 2

ANS465 - Swine Management Swine production systems and management techniques including breeding and selection, reproduction, nutrition, herd health and disease prevention, housing and waste management, marketing, production costs, and enterprise analysis. Field trip. Prerequisite: ANS 315 or consent of instructor. Lab fee: $50. Credit Hours: 4

ANS477 - Aquaculture (Same as ZOOL 477) Production of food, game and bait fishes. Design of facilities, chemical and biological variables, spawning techniques, diseases and nutrition. Two lectures per week and one four-hour laboratory on alternate weeks. Prerequisites: BIOL 200A or BIOL 211 or ZOOL 118 or ANS 121 with grade of C or better. Credit Hours: 3

ANS485 - Beef Cattle Management Beef cattle production systems and management, breeding and selection, reproduction, nutrition, and herd health with emphasis on the most economical and efficient systems. Prerequisite: ANS 315, ANS 332 or concurrent enrollment. Lab/Field trip fee: $50. Credit Hours: 4

ANS495 - Instruction in the Animal Sciences Acquaints the students with different teaching environments and styles. Students will be expected to participate in instructing animal science courses. Restricted to junior standing. Special approval needed from the instructor. Not for graduate thesis option credit. Credit Hours: 1-6

ANS500 - Research Methods in Agricultural Science Experimental design and biometry as applied to biological and allied fields. Restricted to graduate students. Credit Hours: 3

ANS506 - Instrumentation Methods in Agricultural Science Basic methods and techniques of analytical instrumentation used in human and animal nutrition are taught in the lectures with applications of instruments carried out in the laboratories. Special approval needed from the instructor. Lab fee: $100. Credit Hours: 3

ANS515 - Energy and Protein Utilization (Same as FN 515) Energy and protein utilization including digestion, absorption and metabolism as related to mammalian physiology. Prerequisite: CHEM 339 or 340. Credit Hours: 3

ANS516 - Minerals and Vitamins (Same as FN 516) Basic and applied principles of mineral and vitamin metabolism. Emphasis on metabolic functions, reaction mechanisms and interrelationships Prerequisite: CHEM 339 or 340. Credit Hours: 3

ANS525 - Ruminant Nutrition Physiology of rumen, action and microbiology of rumen digestion and utilization of carbohydrates, lipids and nitrogenous substances in ruminant animals. Absorption and assimilation of nutrients by the ruminant animals. Feeding standards for maintenance, growth, reproduction and lactation. Two lectures per week. Prerequisite: ANS 415 or consent of instructor. Credit Hours: 3

ANS531A - Advanced Animal Physiology Advanced Physiological concepts as they relate to mammalian systems-subjects covered are: advanced reproductive physiology. Prerequisite: ANS 331 or PHSL 201. Credit Hours: 2

ANS531B - Advanced Animal Physiology Advanced Physiological concepts as they relate to mammalian systems-subjects covered are: developmental physiology. Prerequisite: ANS 331 or PHSL 201. Credit Hours: 2

ANS531C - Advanced Animal Physiology Advanced Physiological concepts as they relate to mammalian systems-subjects covered are: endocrine physiology. Prerequisite: ANS 331 or PHSL 201. Credit Hours: 2

ANS563 - Fundamentals of Poultry Fundamental principles of poultry production (broiler, turkey and egg production) including poultry physiology, breeding, incubation, housing, nutrition, disease control, management and marketing. Credit Hours: 1

ANS564 - Aquaculture Techniques (Same as ZOOL 564) Practical experience in aquaculture techniques. Course consists of modules which require student participation in hands-on experience, (e.g., spawning, induction of spawning, production of fry, operation and grading, diagnosis and treatment of parasites and diseases, and transporting of fish). One credit for completion of two modules. Register any semester, one year to complete elected number of modules. Written report and examination required for each module. Cost incurred by student varies with modules selected. Prerequisite: ANS 477 or ZOOL 477 or consent of instructor. Credit Hours: 1-2

ANS565 - Advanced Ruminant Nutrition Principles of nutrients metabolism and utilization by ruminant animals in relation to maintenance, growth, reproduction and lactation. Prerequisite: ANS 415 or consent of instructor. Credit Hours: 3

ANS570 - Advanced Aquaculture (Same as ZOOL 570) Special topics in aquaculture and practical methods for the production of coldwater, coolwater, warmwater, and tropical aquatic species. Prerequisite: ANS 477 or ZOOL 477 or equivalent with a grade of C or better. Credit Hours: 3

ANS571 - Fish Reproduction and Breeding (Same as ZOOL 571) Principles of finfish reproductive strategies, reproductive physiology and captive breeding. The role of genetics and the use of biotechnology and various techniques in breeding programs will also be emphasized. The purpose of this course is to develop an understanding of fish reproduction and breeding techniques and to gain an appreciation of the complexity involved in managing a hatchery breeding program. Two lectures a week and one four-hour lab alternate weeks. Prerequisite: ANS 477 or ZOOL 477 or equivalent with a grade of C. Credit Hours: 3

ANS581 - Seminar Problems relating to various phases of animal industries. Maximum of one hour per semester. Credit Hours: 1

ANS588 - International Graduate Studies University residential graduate study program abroad. Prior approval by the program is required both for the nature of the program and the number of credit hours. Credit Hours: 1-8

ANS590 - Readings in Animal Science Reading in specialized fields under direction of approved graduate specialists. Credit Hours: 1-3

ANS592 - Global Research in Agriculture Research interest in animals unique to certain regions of the world is a growing field to graduate students interested in world sustainable agricultural practices.

This class is designed for students interested in taking research based information and skills from Southern Illinois University and applying it to projects with animals native to certain regions of the world to improve productivity and sustainability. This course provides graduate students interested in global and sustainable research the opportunity to conduct their research and training on regional animals not traditionally found in North America (eg. camels, water buffalo, kangaroo,... etc). Course fee up to $5,000 per credit hour. Credit Hours: 1-3

ANS593 - Individual Research Investigation of a problem in animal science under the supervision of an approved graduate specialist. Credit Hours: 1-3

ANS595 - Instruction in Animal Sciences Acquaints the students with different teaching environments and styles. Students will be expected to aid faculty in the instruction of animal science courses. Credit Hours: 1-4

ANS599 - Thesis Credit is given for a Master's thesis when it is accepted and approved by the thesis committee. Not for non-thesis option credit. Credit Hours: 1-6

ANS601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Animal Science Faculty

AbuGhazaleh, Amer A., Professor, Ph.D., South Dakota State University, 2002; 2004. Dairy nutrition.

Apgar, Gary A., Professor, Ph.D., Virginia Polytechnic Institute, 1994; 1998. Monogastric nutrition, swine production.

Banz, William J., Professor, Ph.D., University of Tennessee, 1995; 1995. Nutritional physiology.

Gastal, Eduardo L., Professor, DVM, Federal University of Pelotas, Brazil; Ph.D., University of Wisconsin-Madison, 1985; 1999; 2009. Reproductive physiology.

Jones, Karen L., Professor, Ph.D., Texas A&M, 1999; 1999. Animal biotechnology, genetics reproductive physiology.

Nair, Jayakrishnan, Assistant Professor, Ph.D., University of Saskatchewan, 2017; 2021.

Perry, Erin, Associate Professor, Ph.D., University of Missouri, 2010.

Emeriti Faculty

Goodman, Bill L., Professor, Emeritus, Ph.D., Ohio State University, 1959; 1958.

Hausler, Carl L., Associate Professor, Emeritus, Ph.D., Purdue University, 1970; 1970.

King, Sheryl S., Professor, Emeritus, Ph.D., University of California, Davis, 1983; 1983.

Kroening, Gilbert H., Professor, Emeritus, Ph.D., Cornell University, 1965; 1969.

Minish, Gary, Professor, Emeritus, Ph.D., Michigan State University, 1996;2004.

Olson, Howard H., Professor, Emeritus, Ph.D., University of Minnesota, 1952; 1954.

Young, Anthony W., Professor, Emeritus, Ph.D., University of Kentucky, 1969; 1980.

Anthropology

The School of Anthropology, Political Science, and Sociology offers graduate programs leading to the Master of Arts in Anthropology and Doctor of Philosophy in Anthropology. Provided the student has been admitted to the Graduate School and meets its requirements, acceptance and continuation in the

graduate program are at the discretion of the Anthropology Faculty. The philosophy of the Anthropology program is to produce students with broad backgrounds in the major subfields of anthropology and expertise in particular specialty areas. Within this philosophy, and subject to the requirements discussed below, Anthropology Faculty offers a flexible program which will serve students with diverse needs and goals.

Admission

The applicant to the M.A. in Anthropology program must send a completed application for admission to graduate study and official copies of all transcripts directly to the school, and must meet all Graduate School requirements for entry. Applicants whose native language is not English must achieve a TOEFL of 600 paper score, 250 computer score, 100 on the Internet-based test, or higher in order to gain admittance in the program. The Graduate Record Exam (GRE) is required for all U.S. applicants. Preference will be given to applicants who score in percentiles above 40. Although not required to take the GRE prior to admittance, all foreign students are strongly encouraged to take the exam prior to entering the graduate program and are required to take the exam before the end of their first year in the program.

Applicants who wish to be considered for University Graduate School fellowships must have all application materials completed by December 1. Applicants who wish to be considered for admission into the graduate program in the fall semester of the next academic year and who wish to be considered for graduate assistantships in the program or school must have all application materials completed by March 1. Applications not received or completed prior to March 1 will be considered only in exceptional cases, as determined by the Director of Graduate Studies in consultation with other members of the Graduate Studies Committee.

In addition, the applicant must send a completed program application for admission and financial aid form, personal data sheet, statement of academic and professional goals, and arrange for three letters of recommendation to be sent to the Director of Graduate Studies of Anthropology. All necessary forms will be provided to applicants through the school. No special program of previous work is required. Applicants with academic degrees in fields other than anthropology are encouraged to apply.

This program requires a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in Anthropology. Applicants must pay this fee by credit card.

Master of Arts (M.A.) in Anthropology

Requirements

In addition to the master's degree requirements specified in the Graduate Catalog, the following program requirements apply to all M.A. in Anthropology degree candidates:

1. Each student must complete three core courses: One core course must be in their subfield, and two courses are determined in consultation with the chair of the M.A. in Anthropology committee. It is preferred that these courses be completed during the first two years in the program. At the end of the student's first year of study, the faculty will evaluate each student's performance in the completed core courses along with the rest of the student's record and arrive at a decision on the student's continuation in the program. This decision will take into account the overall evidence of the student's abilities, potentials, and interests.
2. Each student must complete one or more regular graduate-level courses or seminars in each of two subfields of Anthropology of the student's choice (from among archaeological, linguistic, biocultural, or sociocultural anthropology) beyond the core courses.
3. A further nine credit hours of coursework will be assigned by the student's committee after consultation with the student. These nine hours may include up to four hours of graduate credit but may not include more than three credit hours of independent study or thesis. No more than three hours of credit in ANTH 501, ANTH 590, ANTH 597, and ANTH 599 (thesis) may be applied toward the Graduate School requirements of 30 hours of graduate course credit and 15 hours of 500-level credit. The program requires one additional 500-level seminar beyond the core courses

in the Anthropology program or in a related program with the agreement of the chair of the M.A in Anthropology committee, and the thesis hours.
4. Students entering the program may petition to have previously taken courses accepted for credit as equivalent to core courses in cases where the equivalence can be documented.

M.A. in Anthropology Degree Committee, Thesis, Research Paper

Each student in the M.A. in Anthropology degree program will consult with the Director of Graduate Studies and relevant faculty members to select a three-person faculty committee, which will assume major responsibility for the student's advisement. At least two members of this committee, including the chair, must be from Anthropology, and the third member may be selected from outside the program. At least the chair should be chosen by the end of the first year, and the entire committee by the end of the third term.

Under the direction of the M.A. in Anthropology degree committee, the student will complete a thesis and register for at least three credit hours of ANTH 599 while doing so. A student may submit a published paper, or one accepted for publication in an approved professional journal, instead of a thesis, or may be authorized by the program to substitute a research paper for the thesis. Passing of a comprehensive examination on the student's entire program is a Graduate School requirement. One paper copy of the thesis, research paper, or article must be deposited with the school before the degree is granted.

An option is available, at the discretion of the program Faculty, to allow exceptional M.A. in Anthropology students accelerated entry in the doctoral program at the end of their first year of study. For these students, the following are sufficient for the M.A. in Anthropology:

1. completion of 30 credit hours of coursework, including 21 credit hours at the 500 level (which can include up to nine credit hours of ANTH 598 - Research); and
2. a research paper (normally one prepared for a class in the student's subdiscipline) approved by the student's advisor and the Director of Graduate Studies, and submitted to the Graduate School.

No additional stipulations on the nature of the coursework (beyond the core courses) nor a language requirement are imposed.

The Anthropology program may offer direct post-baccalaureate degree entry to the doctoral program under exceptional circumstances, when a student's past work is determined to be of sufficient scope and excellence as to merit equivalence to an M.A. in Anthropology research degree. Students admitted under this option are subject to all existing requirements for the doctoral degree; the admissions/advisory committee for the student may add extra requirements based on the student's background.

Doctor of Philosophy (Ph.D.) in Anthropology

Admission

Applicants to the Ph.D. in Anthropology degree program must complete the equivalent of the master's degree and apply directly to the Graduate School for admission as a doctoral student. Three letters in support of the application must be forwarded to the Director of Graduate Studies of Anthropology. Students must also supply a statement of goals for their programs and subsequent professional careers. The program will offer an accelerated entry option to students who have been admitted at the M.A. level and who are judged by the faculty of the program to be prepared to begin research at the doctoral level. Such students must complete at least one term in the M.A. in Anthropology degree program before being admitted at the Ph.D. level, and must then meet all retention and exit requirements for the regular doctoral option. The students need not submit the application materials required of regular applicants to the Ph.D. in Anthropology degree program outlined above.

Requirements

Students are required to demonstrate breadth of competence in the four sub-disciplines of Anthropology. Retention beyond the first year will be determined by an evaluation of course work for the first year and the maintenance of a minimum GPA of 3.2. Students will then form a faculty committee in consultation with the Director of Graduate Studies and relevant members of the faculty. The committee must include

at least five members of the graduate faculty, at least three of whom (including the chair) must be from within the Anthropology program, and at least one from outside: the normal case will be four from within and one additional.

The requirements for the Ph.D. in Anthropology degree include the following:

1. Additional coursework in anthropology and other fields, including in related programs, within the student's interests. Of the 24 hours of credit required to establish residency, nine credit hours must be in 500-level anthropology courses other than ANTH 500A, ANTH 500C, ANTH 500D, ANTH 501, ANTH 585, and ANTH 597. The Ph.D. committee is expected to help formulate a study program that will usually involve at least one additional academic year of full-time course work beyond the M.A. in Anthropology degree.
2. Research tool requirements. These vary and will be determined between the students and the committee. Students must complete two tools. Possible tools include, for example, computer science, statistics, one or more foreign language(s), still photography, drawing, GIS, or a combination of these or others.
3. Administration by the committee of a special examination with both written and oral components covering topical and geographical specialties (the preliminary or candidacy exam). The student may not take the examination until two years of full-time post-baccalaureate study have been completed and SIUC residency attained. The student should take this examination by the end of three years of full-time Ph.D. level work. In evaluating the examination, the committee may pass the student, pass with conditions, fail the student but allow retaking of part or all of the examination at a later time or fail the student and recommend dismissal from the program. If a student fails the examination and the committee allows reexamination, it must occur within one year of the first examination and only one retake is allowed.
4. Dissertation prospectus approved by student's committee and formally presented to the school.
5. Formal experience in teaching.

Ph.D. in Anthropology Candidacy, Dissertation, and Defense

After completion of the above requirements, the school will recommend a student to the Graduate School for candidacy. The candidate will design dissertation research in consultation with the committee and will undertake the research necessary to acquire the materials for the dissertation. Candidates must register for 24 hours of credit under ANTH 600.

When a final draft of the dissertation has been accepted by the Ph.D. committee, an oral defense of the dissertation and all supporting work will be held in accordance with Graduate School requirements. After a successful dissertation defense and completion of final revisions of the text, the student must submit the dissertation to the Graduate School in accordance with its guidelines, and a paper copy to the School of Anthropology, Political Science, and Sociology.

Anthropology Courses

ANTH410B - Anthropology and Science Fiction Basic concepts of anthropology are used to interpret the imaginary worlds of science fiction. Fictional alien cultures are examined to see how features of human biology, language, social organization, technology, etc. are patterned after or are different from known human cultures. How do science fiction and anthropology both call on the imagination of otherness to critique the present? These themes will be explored through a selection of short stories, novels and films. Credit Hours: 3

ANTH410D - Ethnomusicology: Theory and Method This seminar examines the social, cultural, experiential, evolutionary, and historical dimensions of music. It is designed for students for whom music is a topical interest, who need to gain foundational knowledge about the theory and methods of ethnomusicology. We will review the history of ethnomusicology, major theoretical debates, and current issues. Credit Hours: 3

ANTH410H - African Expressive Culture (Same as AFR 410H) This course examines aspects of African expressive culture including the visual arts, music, dance, orature, cinema, drama and ceremony from an anthropological perspective. Particular attention is given to analysis of African expressive culture

in social context and the role of the arts in the practice of politics, religion, medicine and other aspects of African life. Many of the expressive genres examined deal with historical representation and political resistance. Therefore, this course provides insights into African history and politics through the creative representations of African artists. Credit Hours: 3

ANTH410I - Identities: Global Studies in Culture and Power This course surveys recent studies of sociocultural identities based on ethnicity, class, race, gender, nationality, age, language, and other criteria, as aspects of broader struggles over power and meaning. Topics to be addressed are critical analyses of identity politics in the Americas, Europe, Middle East, Asia, and other regions; historical approaches to studying identities; and ethnographic studies of transnational and diasporic communities. Credit Hours: 3

ANTH410K - Ecological Anthropology An examination of the relationship of past and present human populations in the context of their natural and social environments. Credit Hours: 3

ANTH410L - Transcending Gender (Same as WGSS 410) How do humans become male and female in different societies? Can men become women and women become men? What other gender possibilities exist? Is male dominance universal? What are the sources of male and female power and resistance? Do women have a separate culture? What are the relationships between gender, militarism and war? These and other questions will be examined in cross-cultural perspective. Credit Hours: 3

ANTH410N - Anthropology of Popular Culture An examination of recent approaches to popular culture, material culture and consumption in anthropology. Special topical focus will include sports, television and movies, food and shopping. The course will be organized around several fieldwork projects in the Carbondale community. Prerequisite: ANTH 240D recommended for undergraduates. Credit Hours: 3

ANTH410O - Colonialism and Post-Colonialism This course is designed to familiarize students with the experience of colonialism and the political, social, cultural implications of it. The analysis will not be limited to the study of the colonial period, but it will examine the complexities of contemporary post-colonial societies and cultures. Credit Hours: 3

ANTH410P - Ethics and Research This course examines the risks that any anthropological research poses, both in fieldwork and writing, as well as questions and dilemmas that any social scientist should be aware of before getting involved in any research practice. Prerequisite: ANTH 240D recommended for undergraduates. Credit Hours: 3

ANTH410Q - Food, Symbol and Society In this course we will explore all aspects of the social uses and symbolic meanings we attach to food and eating. How do we use food to make friends, to make enemies, and to make ourselves? What is changing in our food consumption patterns? What are some of the politics and the ethics involved in producing and marketing food? What is the significance of eating out? How do we analyze the smell and taste of food cross-culturally? Credit Hours: 3

ANTH410R - Anthropology of Science and Technology Technologies and scientific knowledge are commonly thought of as being universally applicable and as representations of truths about the operations of the world that are independent of culture. Anthropological studies, however, suggest that the efficacy of scientific knowledge and technologies is specific to the localities in which they are produced. This course introduces students to the primary concerns of the anthropology of science. Credit Hours: 3

ANTH410S - Ethnographic Research Methods This course familiarizes students with the methods used by socio-cultural anthropologists to conduct ethnographies. Ethnographies are rich and detailed studies of people, communities, and practices that help us understand the varying ways human beings engage their environments, structure the societies and spaces they live in, communicate with one another, make meaning, shape themselves in culturally distinct ways, and make technologies and material culture. To create ethnographic knowledge, ethnographers use a diverse tool kit including participant observation, ethnographic interviews, spatial analysis, archival research, and life histories, to name just a few. This class introduces students to these methods and also exposes them to the ethical, logistical, and theoretical complications of conducting ethnographic research. Credit Hours: 3

ANTH410T - Anarchy, Power and Egalitarianism: Anthropological Perspectives This class considers anthropological evidence for and approaches to issues of power and rulership in relation to egalitarian or

anarchist societies, that is, societies without arches (Greek for leaders/laws). We will look at how much societies function, what kinds of history and mythology they produce, how their exchange systems are elaborated, and why they have remained "under the radar" of the modern system of state societies. What can egalitarian/anarchist societies tell us about dominant assumptions about the nature of power and governance? How have ideas about "direct democracy" shaped new social and cultural practices? What is the relationship between these projects and movements and the larger societies in which they exist? Credit Hours: 3

ANTH410V - Visual Anthropology This seminar introduces students to the theories and methods of visual anthropology. Topics will vary semester-to-semester, ranging from methodologies used for ethnographic research of visual cultures, to critical analysis of photography and film/video as methodologies for ethnographic exposition. Credit Hours: 3

ANTH412 - Visual Anthropology as a Research Methodology The new digital technologies provide exciting new ways to conduct anthropological research and present research findings. They also raise technical, methodological, and ethical questions for researchers. This course examines these issues through readings and analysis of examples of use of these media - digital video, still photography, and web authoring - in the field and in presentation to a scholarly and larger public. Credit Hours: 3

ANTH413 - African Film (Same as AFR 413) This course examines the history and social significance of African film from cultural, aesthetic, political, and economic perspectives. Credit Hours: 3

ANTH415 - Sociolinguistics (Same as LING 415) This course studies the relationship between language and society. The focus in an individual semester may include but is not limited to regional dialectology, language variation, linguistic geography, multilingualism, languages in contact, and/or language planning. Credit Hours: 3

ANTH416 - Spanish in the U.S.A. (Same as LING 416) This course offers a survey of the historical, social, political, linguistic and educational issues surrounding the Spanish language in the United States. Topics to be addressed include Spanish language use and bilingualism, language maintenance and shift, education of Latino populations, Hispanic diversity, and Latino literature. Credit Hours: 3

ANTH417 - Language Contact (Same as LING 417) Introduction to the study of the social conditions under which language contact occurs and the cultural and linguistic consequences of such contact using data from a variety of languages and cultures. Potential topics include: language maintenance and shift, ideologies and attitudes regarding bilingualism, and language development and change. Credit Hours: 3

ANTH426 - Gender, Culture and Language (Same as WGSS 426 and LING 426) This course is designed for students who have had some exposure to gender studies. It will focus on readings in language and gender in the fields of anthropological- and socio-linguistics. Issues to be addressed are the differences between language use by men/boys and women/girls, how these differences are embedded in other cultural practices, and the various methodologies and theories that have been used to study gendered language use. Credit Hours: 3

ANTH430A - Archaeology of North America Detailed study of the early cultures of North America. Emphasis on the evolutionary cultural development of North America. Credit Hours: 3

ANTH430E - Archaeology of Ancient Egypt Detailed study of the early culture of ancient Egypt with emphasis on the evolutionary cultural development of Egypt. No prerequisites. ANTH 430E cannot be used to meet requirements of both UCC and Grad School. Credit Hours: 3

ANTH434 - Advanced Origins of Civilization A survey of the major developments of the human past, culminating in the rise of cities and states. Areal coverage varies, but generally includes the ancient Near East, Mesoamerica, Andean South America, South Asia (India and Pakistan), and China. Graduate standing required. Credit Hours: 3

ANTH440A - The Fossil Evidence for Human Evolution An advanced consideration of the fossil evidence for human evolution and evaluation of the various theories regarding the course of human evolution. Credit Hours: 3

ANTH440C - Context of Human Evolution This course will provide an ecological, behavioral, geological, geographic, and theoretical context from which to understand the evolutionary history of modern humans. The course is designed to complement ANTH 440A. Credit Hours: 3

ANTH441A - Laboratory Analysis in Archaeology: Ceramics Being durable, abundant, and full of information about food, social customs, styles, and even ideology, pottery provides a wealth of information about past societies. This course covers the major aspects of pottery analysis, including studies of raw materials, production techniques, function, and exchange. The course is partly lecture, partly lab-based. Credit Hours: 3

ANTH441C - Laboratory Analysis in Archaeology: Lithics This course provides an introduction to lithic analysis in archaeology. Students will be introduced to technological and functional analyses, typological studies, use-wear analysis, debitage analysis, and related subjects. The focus will be on chipped stone, but ground stone will also be considered. The overall goal is to show how lithic analysis can address broader anthropological questions. Credit Hours: 3

ANTH442 - Working with Anthropological Collections This course gives students hands-on experience in the management, curation, and basic analysis of anthropological collections. Students will work with archaeological or museum artifacts and may gain experience in archival methods, collections rehabilitation, curation databases, and working with the public among other topics. May be taken independently or as a follow-up to ANTH 450, 495, 496, 497, 596, or 597. $30 lab fee covers cost of expendable laboratory supplies necessary to complete course work and projects. Credit Hours: 1-12

ANTH455B - Special Topics in Biological Anthropology (May be repeated once for a maximum of 6 hours.) This course will cover special topics in Biological (Physical) Anthropology. Topics will vary between offerings and may include special or current issues in forensic research, human variation, genetics and evolution, primate behavior, ecology, conservation, or human evolution. Credit Hours: 3

ANTH455C - Primate Behavior and Ecology Advanced study of the behavior and ecology of living nonhuman primates. The course will cover the geographic distribution and basic ecological features of nonhuman primates and the relationships between resource distribution, social organization, mating system and behavior which will help to reconstruct the evolution of nonhuman and human primate sociality. Credit Hours: 3

ANTH455D - Quantitative Methods Classic inferential statistics as well as resampling approaches and pattern recognition philosophy: chi square, t test, ANOVA, correlation and regression, nonparametric versus parametric methods, multiple regression, all involving diverse anthropological data examples. This course in combination with Ed Psych 506 or other approved substitute satisfies a doctoral tool requirement. Does not count as a bioanthropology elective toward the M.A. degree. Credit Hours: 3

ANTH455H - Osteology This lab-based course is for the advanced student interested in the analysis of the human skeleton. An intensive study of human skeletal anatomy, the methods used in the identification and analysis of skeletal remains in archaeological contexts, and osteological evidence for disease, diet, and trauma in past populations. Credit Hours: 3

ANTH456 - Forensic Taphonomy Critical to the successful forensic anthropological analysis of human remains is an understanding of the events and processes that affect decomposition of biological tissues. This course is designed to teach students about a variety of process affecting decomposition of human tissues, including (but, not limited to) animal scavenging, insect activity, environmental conditions, personal characteristics of the deceased and human vectors (dismemberment, burning, burial, etc.). Prerequisite: ANTH 231 OR ANTH 455H. Credit Hours: 3

ANTH460 - Individual Study in Anthropology Guided research on anthropological problems. The academic work may be done on campus or in conjunction with approved off-campus (normally field research) activities. Special approval needed from the instructor. Credit Hours: 1-12

ANTH470A - People and Cultures-Africa A survey of the prehistory, cultural history, and modern cultures of peoples in Africa. Credit Hours: 3

ANTH470D - Peoples and Cultures of Europe Intensive examination of the prehistory, cultural history, and modern cultures of peoples in Europe. Credit Hours: 3

ANTH484 - Internship: Curation of Archaeological Collections This internship is intended to introduce students to the management of archaeological collections through hands-on work with materials, typically those housed at the Center for Archaeological Investigations' curation facility. Students will be exposed to a variety of issues that affect local, state, and national curation facilities such as conservation, preservation, accessibility, accountability, and ethical concerns. Internship projects range from collections documentation and research to object digitalization and other special curation projects. Special approval needed from the instructor to register. Credit Hours: 1-9

ANTH485 - Special Topics in Anthropology Selected advanced topics in anthropology. Topics vary and are announced in advance. May be repeated as the topic varies. Special approval needed from the instructor. Credit Hours: 3-9

ANTH495 - Ethnographic Field School Apprentice training in the field in ethnographic theory and method. Students will be expected to devote full time to the field school. Special approval needed from the instructor. Credit Hours: 3-8

ANTH496 - Field School in Archaeology Apprentice training in the field in archaeological method and theory. Students will be expected to be in full-time residence at the field school headquarters off campus. Special approval needed from the instructor. Students will be charged a $50 fee for supplies. Credit Hours: 1-12

ANTH497 - Field School in Bioarchaeology This course offers training in archaeological field techniques related to the excavation and analysis of human skeletal remains. Students are expected to be in full-time residence at the field school site, which may involve international travel. Offered during the summer. Special approval needed from the instructor. Credit Hours: 3

ANTH500A - Theory and Method in Biological Anthropology Current topics in biological evolution and variation, including the theoretical and methodological background to each. Topics will be drawn from the four major areas of physical anthropology: genetics and evolutionary theory, primate studies, human fossil record and human variation. Special approval needed from the instructor. Credit Hours: 3

ANTH500B - Theory and Method in Linguistic Anthropology Overview to enable students to identify, describe and understand the theories, methods and goals of linguistic anthropology. Emphasis is placed on the relationships of language to culture and cognition from an anthropological perspective. Topics include language origins, descriptive linguistics, language and cognition, synchronic and diachronic variation, language use in cultural context, discourse and pragmatics, writing systems and literacy. Special approval needed from the instructor. Credit Hours: 3

ANTH500C - Theory and Method in Archaeology Overview of the currents and controversies in anthropological archaeology in their historical and theoretical context. Topics include history of archaeological theory, explanation in archaeology, limitations of the archaeological record and archaeological approaches to the study of cultural variation. Special approval needed from the instructor. Credit Hours: 3

ANTH500D - Theory and Methods in Sociocultural Anthropology This course is designed to enable students to identify, define and critically understand the major theories and methods of contemporary sociocultural anthropology. The course is organized into three general parts, reflecting broad areas of theoretical inquiry which have expanded most rapidly in anthropology since 1960: (1) ecological, economic and other materialist approaches; (2) cognitive, symbolic and other interpretive approaches; and (3) recent and ongoing research strategies, including critical and historical approaches. Special approval needed from the instructor. Credit Hours: 3

ANTH500E - History of Anthropological Theory Covers history of pre-20th century social theory and a survey of 20th century theories in socio-cultural anthropology. Topics include: Enlightenment social theory, social evolutionism, racial formalism and the Boasian critique, relativism and functionalism; cultural materialism, cultural ecology, neo-evolutionism, ecological anthropology, structuralism, ethnoscience, interpretive anthropology, practice theory, post-modernism, and gender theory. Special approval needed from the instructor. Credit Hours: 3

ANTH501 - Practicum in Educational Anthropology This practicum provides anthropology PhD students actual classroom experience in a lower division anthropology course. Students will be involved in

the teaching of designated courses. Faculty will meet with practicum members on a regular basis, critique their lectures, and together with them work out problems and plan future directions of the course. Graded S/U only. Restricted to anthropology doctoral students only. Credit Hours: 3

ANTH510 - Seminar Archaeology of North America Seminar studying issues concerning the prehistoric and historic inhabitants of North America north of Mexico. From year to year, the precise areal and topical coverage will vary, as will the instructors. Students should consult department about subjects to be offered. Credit Hours: 3

ANTH511 - Seminar in Meso-American Archaeology From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered. Credit Hours: 2-3

ANTH513 - Seminar in Archaeology Seminars in varying topics in archaeology. Students should consult department about subjects to be covered. Credit Hours: 3

ANTH515A - Seminar in Sociocultural Anthropology Advanced seminar on theoretical perspectives in the social sciences and humanities. Topical focus will vary from year-to-year. Course may be taken again as topics vary. Extensive readings are drawn from a wide range of sources. Credit Hours: 3

ANTH515B - Seminar in Sociocultural Anthropology Intensive analysis of a limited set of monographs organized around a theoretical problem or set of problems. Credit Hours: 3-9

ANTH523 - Seminar in Anthropology of Africa From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered. Credit Hours: 2-3

ANTH525 - Theorizing the Body (Same as WGSS 525) This seminar explores a broad range of theoretical readings centering on the human body. Once the province of medical science and certain schools of philosophy, recent research in the social sciences and the humanities position "the body" as a primary site of socialization, gendering, social control. Credit Hours: 3

ANTH527 - Seminar in Gender An advanced seminar in anthropological approaches to gender. Theoretical and topical approaches will vary from semester to semester. In any given semester topics may include: power, agency, ethnographies of gender, the construction of masculinity/femininity, gender diversity, gender and the state, gender and everyday. Prerequisite: ANTH 500D or consent of instructor. Credit Hours: 3

ANTH528 - Seminar in Culture and Materiality An advanced seminar in anthropological approaches to culture and materiality. Theoretical and topical approaches will vary depending on the instructor and semester. In any given semester topics may include: Human and non-human agency, the social and the technological, science studies, production and consumption, human-environment relations, the role of the senses in culture, and knowledge, skill and practice. Prerequisite: ANTH 500D or consent of the instructor. Credit Hours: 3

ANTH530 - Seminar in Paleoanthropology Topics will be drawn from any dealing with the fossil and/or contextual evidence for human evolution (e.g., The Place of Neandertals in Human Evolution; Taphonomy and Paleoecology; Origins of Bipedalism). From semester to semester, the topical coverage will vary, as will the instructor. Students should consult the department about subjects to be covered. Credit Hours: 3-9

ANTH531 - Seminar in Bioarchaeology Seminars will focus on theoretical and methodological issues relating to the excavation and analysis of human skeletal remains. From semester to semester, The topical coverage will vary, as will the instructor. Students should consult the department about subjects to be covered. Credit Hours: 3

ANTH532 - Seminar in Human Biological Variation Topics will be drawn from any of the areas of biological variation among humans (e.g., Comparative Epidemiology, Human Sociobiology, Demography and Paleodemography, or Multivariate Pattern Recognition). From semester to semester, the topical coverage will vary, as will the instructor. Students should consult the department about subjects to be covered. Credit Hours: 3-9

ANTH534 - Seminar in Evolutionary Theory Seminars will be constructed around various theoretical and/or substantive issues in current biological evolutionary theory (e.g., Issues in Paleobiology, Evolution At and Above the Species Level or Phylogenetic Systematics). From semester to semester, the topical coverage will vary, as will the instructor. Students should consult the department about subjects to be covered. Credit Hours: 3-9

ANTH536 - Seminar in Primate Behavior and Ecology Topics will vary among theoretical and substantive issues in primate behavior and ecology (e.g., Primate Social Structure, Socioecology, Diet, Locomotion and Foraging Strategies, or Reproductive Strategies in Primates). From semester to semester, the topical coverage will vary, as will the instructor. Students should consult the department about subjects to be covered. Credit Hours: 3-9

ANTH538 - Seminar in Primate Evolution Topics will vary among substantive (taxonomic), theoretical, and contextual issues in primate evolution (e.g., Catarrhine Evolution, Anthropoid Origins, Molecular vs. Fossil Evidence for Hominoid Phylogeny or The Role of Body Size and Allometry in Primate Evolution). From semester to semester, the topical coverage will vary, as will instructor. Credit Hours: 3-9

ANTH544 - Discourse Analysis (Same as LING 544) Survey of major approaches to the analysis of spoken or written discourse including speech act theory, pragmatics, interactional sociolinguistics, ethnography of communication, conversation analysis, variation analysis and critical discourse analysis. Credit Hours: 3

ANTH545 - Seminar in Anthropological Linguistics From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered. Credit Hours: 2-3

ANTH546 - Language, Gender and Sexuality: Anthropological Approaches (Same as LING 545,WGSS 546) This course examines the study of language in society with a particular focus on how linguistic practices are part of the construction of gender and sexual identities, ideologies, social categories and discourses. Anthropological theories applied to the study of language, gender and sexuality will be covered along with a variety of methodological approaches. Credit Hours: 3

ANTH548 - The Linguistic Anthropology of Education (Same as LING 548) This course examines the role of language in education through a critical anthropological lens, examining educational institutions across cultures and times. Topics to be covered include the teaching of literacy, language policies and ideologies in education, the linguistic construction of identities in school settings (including national, ethnic, gender, sexuality, age, religious and social class identities) and modes of intervention to improve educational endeavors. Ethnographic studies of education in a variety of national, cultural and linguistic contexts will be covered, as well as other discourse analysis approaches to the study of educational processes and institutions. The course is designed to bring together a wide range of material of interest to graduate students in anthropology, linguistics, education and other related fields. Credit Hours: 3

ANTH551 - Pragmatics (Same as LING 551) An investigation of language use in context; this incorporates both social and psychological aspects of language use. Topics to be covered in this course include speech acts; implicature; conversation analysis; and the acquisition of communicative competence by both first and second language learners. Prerequisite: ANTH 500B or LING 505. Credit Hours: 3

ANTH554 - Evolution Seminar (Same as PLB 554) Advanced topics in evolutionary biology including genetics & development, evolutionary ecology, phylogeny, paleontology, biogeography, population genetics, molecular ecology, speciation, molecular evolution, and macroevolution. Topics will vary each semester. Seminar format with group discussions and student presentations. Graded S/U. Special approval needed from the instructor. Credit Hours: 1

ANTH555 - Curation of Biological Collections (Same as ZOOL 555) An overview of the organization and operation of modern collections involving animal, plant, and microbial specimens. Topics include specimen preparation and curation, collection databases, specimen-collection laws, and field-collection techniques. Special approval needed from the instructor. Credit Hours: 3

ANTH556 - Phylogenetics (Same as MBBS 556, PLB 556, and ZOOL 556) An advanced introduction to modern methods of phylogenetic inference, emphasizing both theoretical background concepts

and numerical approaches to data analysis. Topics include properties of morphological and molecular characters, models of character evolution, tree estimation procedures, and tree-based testing of evolutionary hypotheses. Special approval needed from the instructor. Credit Hours: 3

ANTH560 - Seminar in Comparative Social Organization From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered. Credit Hours: 2-3

ANTH567 - Seminar in Anthropological Theory and Method From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered. Credit Hours: 2-3

ANTH568 - Seminar in Analytical Methods in Archaeology Seminar in definition, measurement and description of data in relation to archaeological research problems. From year to year, the topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be offered. Special approval needed from the instructor. Credit Hours: 3-12

ANTH576 - Seminar in Anthropological Research Design Supervised training in the preparation of anthropological research designs. Requirements will include completed research proposals involving the relation of data to theory and results in the general sub-areas of archaeological, physical, social and linguistic anthropology. Coverage will vary. Students should consult the department. Credit Hours: 2-3

ANTH580 - Current Topics in Evolution (Same as ZOOL 580) The Evolution Discussion Group meets weekly throughout the year to discuss current evolutionary literature and the research of participants. All students and faculty with an interest in evolutionary biology are welcomed to participate. Credit Hours: 1

ANTH581 - Seminar in Anthropology From year to year, the areal and topical coverage of this course will vary, as will the instructor. Students should consult the department about subjects to be covered. Credit Hours: 2-3

ANTH585 - Readings in Anthropology Guided readings to cover special topics and fill gaps in the student's specialized anthropological background in preparation for PH.D. candidacy examination, to be arranged with department. Graded S/U. Restricted to doctoral students only. Special approval needed from the instructor. Credit Hours: 1-3

ANTH590 - Internship This provides a supervised experience in a professional setting, generally entailing supervisory, editorial, and/or administrative duties. Special approval needed from the instructor. Credit Hours: 3

ANTH595 - Field Methods in Ethnology Anthropological methods of inquiry and documentation of cultures and habitat together with appropriate instruction in the technique of field work such as photography and sound recording. Special approval needed from the instructor. Credit Hours: 3-6

ANTH596 - Advanced Field Methods in Archaeology Advanced, hands-on training in the field of archaeological method and theory. Graduate students will have extended training in supervisory and documentation tasks and roles, in addition to other field training. Students will be expected to be in residence at the field school headquarters off campus for the entire field season. Prerequisite: ANTH 496 or consent of instructor. Credit Hours: 6

ANTH597 - Fieldwork in Anthropology To be arranged with department. Graded S/U only. Credit Hours: 1-12

ANTH598 - Accelerated Thesis This course is restricted to students to be accelerated from the M.A. to the Ph.D. program (at the discretion of the faculty). Its purpose is to allow the student, under the guidance of his/her major advisor, to complete the research paper and other requirements of an M.A. degree. Graded S/U only. Special approval needed from the department and departmental offer of accelerated entry to Ph.D. program in Anthropology. Credit Hours: 1-9

ANTH599 - Thesis Special approval needed from the instructor. Credit Hours: 1-9

ANTH600 - Dissertation Special approval needed from the instructor. Credit Hours: 1-12

ANTH601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

ANTH699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Anthropology Faculty

Ciubrinskas, Vytis, Adjunct Assistant Professor, Ph.D., Vilnius University, 1993.

Dabbs, Gretchen, Professor, Ph.D., University of Arkansas, 2009; 2010. Bioarchaeology, forensic anthropology, taphonomy; Middle East and North America.

Reichard, Ulrich, Associate Professor, Ph.D., Goettingen University, 1995; 2006. Primate evolution, behavior, socioecology and cognition; human origins and human evolution; Asian primates.

Sutton, David, Professor, Ph.D., University of Chicago, 1995; 1999. Anthropological theory/ethnographic inquiry, social anthropology, cultural analysis.

Wagner, Mark, Professor, Ph.D., Southern Illinois University, Carbondale, 2010; 2011. Staff archaeologist.

Emeriti Faculty

Adams, Jane H., Professor, Emerita, Ph.D., University of Illinois-Urbana, 1987; 1987.

Balkansky, Andrew K., Professor, Emeritus, Ph.D., University of Wisconsin, 1997; 2003.

Butler, Brian M., Adjunct Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1977; 1977.

Corruccini, Robert S., Professor, Distinguished Scholar, Emeritus, Ph.D., University of California, Berkeley, 1975; 1978.

Ford, Susan M., Professor, Emerita, Ph.D., University of Pittsburgh, 1980; 1979.

Fuller, Janet M., Professor, Emerita, Ph.D., University of South Carolina, 1997.

Gumerman, George J., Professor, Distinguished Scholar, Emeritus, Ph.D., University of Arizona, 1968; 1973.

Handler, Jerome S., Professor, Distinguished Scholar, Emeritus, Ph.D., Brandeis University, 1965; 1962.

Hill, Jonathan D., Professor, Emeritus, Ph.D., Indiana University, 1983; 1986.

Hofling, C. Andrew, Professor, Emeritus, Ph.D., Washington University, 1982; 1996.

Maring, Ester G., Assistant Professor, Emerita, Ph.D., Indiana University, 1969; 1965.

McCall, John, Associate Professor, Emeritus, Ph.D., Indiana University, 1992; 1995.

Muller, Jon D., Professor, Emeritus, Ph.D., Harvard University, 1967; 1966.

Rice, Don, Professor, Emeritus, Ph.D., Pennsylvania State University, 1976; 1991.

Rice, Prudence M., Professor, Distinguished Scholar, Emerita, Ph.D., Pennsylvania State University, 1976; 1991.

Shimada, Izumi, Professor, Emeritus, Distinguished Scholar, Ph.D., University of Arizona, 1976; 1994.

Welch, Paul D., Associate Professor, Emeritus, Ph.D., University of Michigan, 1986; 2001.

Architecture

The Master of Architecture degree is a first professional degree intended for individuals who have completed a pre-professional undergraduate degree in architecture or architectural studies and requires a minimum of 42 credit hours that can be completed over a 15 month period including a summer, fall, spring and summer semester sequence.

Master of Architecture (M.Arch.)

The core of the architecture program is the design studio. In the Graduate program students are exposed to community and regional design, technology, theory, and building design. Students are required to take advanced courses in research methods, programming and professional practice. Students receive a rigorous and demanding education that will prepare them for a variety of architectural intern positions.

The focus of the program will develop through the:

- Traditional program strength in technological innovation and practice connected to architectural theory.
- Service and discovery related to the regional and global culture and environment as a unique model and framework for the study of architecture.
- Practice of Architectural design with full awareness of user needs, utilizing energy efficiency principles, using appropriate materials and technologies, and analyzing appropriate precedents.

Accreditation

The entire undergraduate and graduate curriculum is designed to fulfill National Architectural Accrediting Board (NAAB) requirements and conditions for a professional degree in architecture. The Master of Architecture degree is fully accredited by the National Architectural Accrediting Board (NAAB) and meets educational requirements for licensure in Illinois and other states as well as National Council of Architectural Registration Boards (NCARB) certification requirements.

- *In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a 6-year, 3-year, or 2-year term of accreditation, depending on the extent of its conformance with established educational standards.*
- *Master's degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.*
- *The NAAB grants candidacy status to new programs that have developed viable plans for achieving initial accreditation. Candidacy status indicates that a program should be accredited within 6 years of achieving candidacy, if its plan is properly implemented.*

Vision and Mission

The SIUC architecture graduate program invites students to unleash their potential and join in the exploration, development, and creation of architecture in the heartland of America. It is our vision to be an architectural program of excellence built upon the cultural and environmental heritage of the Southern Illinois region that provides a superior education and produces the highest quality architectural scholarship and research to serve our global communities.

Through our cultural heritage, environmental context and the tradition of integrating emerging technology and innovative practice, the mission of the architecture faculty and students is to explore, create, and develop architecture as a synthesis of design excellence, artistic expression, technology and community involvement.

Goals

- Our graduates are lifelong learners, leading citizens and professionals in communities throughout the world.
- We provide for the development of individual creativity through the expression of human, social and environmental values.
- We serve our communities through problem solving and creative efforts in the addressing of regional issues.
- We seek to fulfill the vision expressed by Ernest Boyer and Lee Mitgang in *Building Community* to:
    - Produce architecture that enhances the quality of life of our communities, serves the needs of clients, uplifts the human spirit, preserves the environment, provides social justice and expands aesthetic frontiers.
    - Pursue the scholarship of discovery, integration, application and teaching.
    - Provide a curriculum that is liberal, flexible and integrated both within the discipline of architecture and in connections with other disciplines in the design-build process.

Admission

A complete application consists of:

1. The Master of Architecture application form
2. Graduate School application
3. Application fee of $65
4. Portfolio
    - Examples of work should include design studio work, professional presentation drawings, and any related expressions that demonstrate the applicant's design and communication abilities. Professional work should include a statement from the employer stating the role of the applicant in the process and product of the work.
    - Preferred sizes: (8 ½" x 11") or (11" x 17"). Use a PDF file.
    - Maximum number of pages: 25
    - Covers and binding: simple and easy to read
    - Portfolios cannot be returned to the applicant.
5. Three letters of recommendation
6. Official transcripts from all institutions attended
7. Statement of purpose expressing academic and professional career goals and plans

International applicants also need to supply TOEFL (Test of English as a Foreign Language) scores that satisfy the Graduate School requirements and Certification of Finances for Admission to the Graduate College.

Graduate Record Examination (GRE) is not required for the Master of Architecture Program. However, many scholarship and fellowship opportunities do require the GRE. Applicants are encouraged to submit test scores.

Application materials are reviewed by the faculty of the School of Architecture. Each submission is evaluated individually and the decisions are based upon the quality of the portfolio, the strength of the academic record, the letters of recommendation, professional experience and the commitment and clarity expressed in the letter of intent.

Requirements

The SIUC School of Architecture Master's of Architecture program curriculum has been created to provide a superior architectural education and satisfy the National Architectural Accrediting Board (NAAB) "Student Performance Requirements". The program offers multiple tracks (on-campus and online/ hybrid delivery options) toward degree completion, depending on entry qualifications and degree needs (outlined below). All applications will be reviewed to ascertain fulfillment of the educational criteria of the SIUC undergraduate program and accreditation standards. Based on student undergraduate credentials, multiple curricular paths are defined to address these requirements.

Candidates who have already earned a four-year pre-professional Bachelor of Science in Architectural Studies degree, or its equivalent, may be able to complete the program in as little as 15 months of

study. For these students, the graduate program consists of 42 total credit hours, completed over the course of four continuous, intensive study semesters (whether online or on-campus). Students from other majors are required to complete additional coursework (see the 27- and 39-month curriculum guides), or variation, depending on an evaluation of their previous coursework. Any deficiencies will be defined upon acceptance into the program as well as the necessary course requirements to eliminate those deficiencies. Those requirements must be fulfilled prior to completion of the Master of Architecture degree.

Path A - 15-Month Curriculum
(For candidates with a 4-year pre-professional degree in architecture)

Summer I Semester

ARC 550: Regional Architecture Studio (6 CH)
TOTAL 6 Credit Hours

Fall I Semester

ARC 500: Research Methods and Programming (3 CH)
ARC 541: Architectural Systems and the Environment (3 CH)
ARC 551: Comprehensive Architecture Design Studio (6 CH)
ARC 591: Architectural Professional Practice I (3 CH)
TOTAL 15 Credit Hours

Spring I Semester

ARC 532: Global Traditions in Architecture (3 CH)
ARC 552: Graduate Architectural Design Thesis I (6 CH)
ARC 592: Architectural Professional Practice II (3 CH)
Elective: (3 CH)
TOTAL 15 Credit Hours

Summer II Semester

ARC 554: Graduate Architectural Design/Thesis II (6 CH) –OR-
ARC 593: Architectural Research Paper (6 CH) –OR-
ARC 599: Thesis (6 CH)
TOTAL 6 Credit Hours

Path B - 27-Month Curriculum
(For candidates with a 4-year degree in interior design or an allied area of practice)

Fall I Semester

ARC 341: Building Technology II (4 CH)
ARC 361: Architectural Structures I (3 CH)
ARC 381: Environmental Design I (2 CH)
ARC 451: Design V - Urban Design (6 CH)
TOTAL 15 Credit Hours

Spring I Semester

ARC 342: Building Technology III (4 CH)
ARC 362: Structures II: Wood and Concrete (3 CH)
ARC 452: Design VI - Integration (6 CH)
ARC 462: Architectural Structures III (3 CH)
TOTAL 16 Credit Hours

Summer I Semester

ARC 550: Regional Architecture Studio (6 CH)

TOTAL 6 Credit Hours

Fall II Semester

ARC 500: Research Methods and Programming (3 CH)
ARC 541: Architectural Systems and the Environment (3 CH)
ARC 551: Comprehensive Architectural Design Studio (6 CH)
ARC 591: Architectural Professional Practice I (3 CH)
TOTAL 15 Credit Hours

Spring II Semester

ARC 532: Global Traditions in Architecture (3 CH)
ARC 552: Graduate Architectural Design Thesis I (6 CH)
ARC 592: Architectural Professional Practice II (3 CH)
Graduate Elective (3 CH)
TOTAL 15 Credit Hours

Summer II Semester

ARC 554: Graduate Architectural Design/Thesis II (6 CH) –OR-
ARC 593: Architectural Research Paper (6 CH) –OR-
ARC 599: Thesis (6 CH)
TOTAL 6 Credit Hours

Path C - 39-Month Curriculum
(For candidates with a 4-year degree in other fields of study)

Summer I Semester

ARC 121: Arch. Communication I (4 CH)
ARC 122: Arch. Communication II (4 CH)
TOTAL 8 Credit Hours

Fall I Semester

ARC 231: Architectural History I (3 CH)
ARC 251: Design I: Concept (4 CH)
ARC 271: Computers in Architecture (3 CH)
ARC 361: Architectural Structures I (3 CH)
ARC 381: Environmental Design I (2 CH)
TOTAL 15 Credit Hours

Spring I Semester

ARC 532: Global Traditions in Architecture (3 CH)
ARC 552: Graduate Architectural Design Thesis I (6 CH)
ARC 592: Architectural Professional Practice II (3 CH)
ARC 362: Structures II: Wood and Concrete (3 CH)
TOTAL 15 Credit Hours

Summer II Semester

No Courses Required

Fall II Semester

ARC 341: Building Technology II (4 CH)
ARC 451: Design V - Urban Design (6 CH)
ARC 481: Environmental Design II (3 CH)
ARC 591: Architectural Professional Practice I (3 CH)

TOTAL 16 Credit Hours

Spring II Semester

ARC 342: Building Technology III (4 CH)
ARC 452: Design VI - Integration (6 CH)
ARC 462: Architectural Structures III (3 CH)
ARC 482: Environmental Design III (3 CH)
TOTAL 16 Credit Hours

Summer III Semester

ARC 550: Regional Architectural Studio (6 CH)
TOTAL 6 Credit Hours

Fall III Semester

ARC 500: Research Methods and Programming (3 CH)
ARC 541: Architectural Systems and the Environment (3 CH)
ARC 551: Comprehensive Architecture Design Studio (6 CH)
ARC 591: Architectural Professional Practice I (3 CH)
TOTAL 15 Credit Hours

Spring III Semester

ARC 532: Global Traditions in Architecture (3 CH)
ARC 552: Graduate Architectural Design Thesis I (6 CH)
ARC 592: Architectural Professional Practice II (3 CH)
Elective: (3)
TOTAL 15 Credit Hours

Summer III Semester

ARC 554: Design/Thesis II (6 CH) -OR-
ARC 593: Architectural Research Paper (6 CH) -OR-
ARC 599: Thesis (6 CH)
TOTAL 6 Credit Hours

Contact

Director of Graduate Studies
875 South Normal
413 Quigley Hall, MC 4337
Southern Illinois University Carbondale
Carbondale, IL 62901
Email: architecture@siu.edu
Phone: 618-453-3734
Fax: 618-453-1129

Architecture Courses

ARC500 - Research Methods and Programming The foundational study of research methods and programming that serve architectural studies. This course investigates the co-application of multiple methodologies for the development of research topics and architectural programs. The conclusion of the course is the definition of an individual thesis project to be completed in the Graduate Program. Restricted to enrollment in M. Arch. program. Credit Hours: 3

ARC502 - Architecture Seminar Study of current trends and topics in architecture. Assigned readings and investigations are completed on approved topics chosen by the student. Students have the option of completing in situ study during the course. Credit Hours: 3-6

ARC508 - Sustainable Construction Management and Green Building This course provides an in-depth exploration of advanced methods, processes, and strategies necessary for achieving sustainability in design and construction. The curriculum covers green building practices and examines how sustainability is being implemented within the construction industry at both national and international levels. The U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) rating system categories and criteria are discussed. Students who have completed ARC 412 are not eligible to enroll. Credit Hours: 3

ARC510 - Construction Management and Operations: Construction Safety Management Introduce principles of safety and health in the construction industry and their relationship to Construction Management and Operations (COMO). Include identification of safety and health hazards, risk reduction measures, personal protection, and safety attitudes and training. Explore Occupational Safety and Health Regulations for Construction. Credit Hours: 3

ARC511 - Construction Management and Operations: Time, Value and Risk Management Overview of management issues and scheduling for a project. Explain importance of time and risk management in construction and construction business. Study how fundamentals of scheduling, liability, and value are interrelated and explore impacts on project, scope, and budget. Apply constructability, sustainability, return on investment strategies, quality management terms and definitions throughout project phases. Credit Hours: 3

ARC514 - Budget & Cost Management Provide overview of various estimating tools and methods for managing budgets, project estimates, and costs during program, construction and facilities management phases. Identify roles and responsibilities for controlling and monitoring project cost. Identify and develop methods for creating valid project estimates and budgets. Explore Integrated Project Delivery (IPD) for budget and cost management. Credit Hours: 3

ARC531 - Seminar: Architectural History A seminar devoted to the teaching, investigation and discussion of the history of architecture. Students have the opportunity to investigate historical precedents and the context within which these ideas have developed. The connection to the contemporary architectural setting and current concepts will be developed and discussed. Credit Hours: 3

ARC532 - Global Traditions in Architecture Seminar to discuss architecture beyond the tradition of Western civilization. Focus is upon the architecture of Asia, the Middle East and North America. Primitive, pre-industrial vernacular as well as cultural specific high style architecture is included. The course format is: lectures, assigned reading, class discussion and individual research reports. Credit Hours: 3

ARC541 - Architectural Systems and the Environment Provides an overview of building technology and systems and the role of building systems performance in providing architectural and human environments and their subsequent impact upon the natural environment. The course builds upon the philosophical ideas of sustainable design and resource consumption tools. Prerequisite: ARC 550. Concurrent Enrollment: ARC 551 allowed. Credit Hours: 3

ARC550 - Regional Architecture Studio Architectural design studio focused upon regional architecture and planning. The studio addresses regional architectural issues building upon the local culture and design traditions. Restricted to enrollment in the M.Arch. program. Studio fee: $72. Credit Hours: 6

ARC551 - Comprehensive Architecture Design Studio Architectural design studio focused upon comprehensive design of a large-scale urban building as fulfillment of the total integration of architectural systems and design criteria. This course serves as the culmination of the fulfillment of student performance criteria through the integration of all major building and urban systems while addressing the current human, social, and environmental issues. Prerequisite: ARC 550. Co-requisite: ARC 541 allowed. Restricted to enrollment in M.Arch. program. Studio fee: $72. Credit Hours: 6

ARC552 - Graduate Architectural Design Thesis I Initial development of individual design thesis project in a studio setting. The studio will consist of design project or an individual student thesis project as

developed in ARC 500-3. Approval of thesis project by graduate faculty is required. Prerequisite: ARC 500 and 551. Restricted to enrollment in M.Arch. program. Studio fee: $72. Credit Hours: 6

ARC554 - Graduate Architectural Design/Thesis II A continuation of ARC 552 in the conclusion, presentation and final approval of the individual design/thesis project in a studio setting. This course is taken by students who wish to graduate through the school. Prerequisite: ARC 552. Studio fee: $72. Credit Hours: 6

ARC557 - Graduate Vertical Architectural Design This course is designed as a fast-paced, flexible leveling design studio for individual candidates from architectural related degree programs who need to meet additional student performance criteria for graduate school entry. As an integrative studio, it further builds on individual capacities, progresses communication and design skills, while addressing complexities of modern architectural programs and design methodologies required to prepare students for advanced architectural expectations. The course engages rigorous research, analysis and synthesis within an urban building context, while emphasizing the integration of environmental and architectural systems into a comprehensive design. Documentation in appropriate technologies, emphasizing advanced critical thinking, communication skills, and multi-dimensional problem-solving capacities, are required and will be formally presented for review. $12 Studio fee. Credit Hours: 6-12

ARC570 - Architectural Visualization This course is designed to give the student a fundamental understanding of the practices of 3D architectural modeling and visualization. Themes emphasized are: 3D modeling; still frame rendering; animation production; image editing and post production. Restricted to enrollment in M.Arch. program. Credit Hours: 3

ARC581 - Special Projects Investigation of individual problems in architecture under the supervision of a faculty member. Restricted to M.Arch. majors. Special approval needed from the instructor. Credit Hours: 1-12

ARC582 - Special Readings in Architecture Assigned readings in an area of architecture under the supervision of a faculty member. Restricted to M.Arch. majors. Special approval needed from the instructor. Credit Hours: 1-6

ARC583 - Environmental Design II: Energy and Systems The study of the influence of energy, human comfort, climate, context, heating, cooling and water on the design of buildings and sites. The design of passive and active environmental systems and strategies for sustainability. Restricted to major. Credit Hours: 3

ARC584 - Environmental Design III: Lighting and Acoustics This course provides a comprehensive overview of the study of the influences of energy, human comfort, climate, and context, luminous and sonic environment with emphasis on energy-conscious design. Restricted to major. Credit Hours: 3

ARC591 - Architectural Professional Practice I Introduction to the organization, management, and practice of architecture as a business and profession. Emphasis is placed on the range of services provided, professional ethics, business management, marketing, contracts and negotiations, design cost analysis/controls, and other aspects of professional practice. Students who have completed ID 471 are ineligible to enroll. Restricted to enrollment in M.Arch. program. Credit Hours: 3

ARC592 - Architectural Professional Practice II The development of the study and discussion of architectural professional practice issues including leadership, legal responsibilities, ethics and professional judgment. Restricted to enrollment in M.Arch. program. Credit Hours: 3

ARC593 - Architectural Research Paper This course is for students who wish to perform individual research in architecture on an approved topic. Prerequisite: ARC 552. Restricted to enrollment in M.Arch. program. Credit Hours: 6

ARC594 - Programming & Analysis The purpose of this course is to discuss the programming and analysis of a new architectural project. Included in the review of these topics will be related discussions with regard to project type, client needs, site and context. As part of the learning process, students will be expected to participate in class discussion as well as complete projects which are designed to develop critical thinking, speaking, and writing skills. Prerequisite: ARC 592 with a grade of B- or better. Credit Hours: 1

ARC595 - Project Planning + Design The course discusses the preliminary design of a building & the site of a new architectural project. Included in the review of these topics will be related discussions with regard to project type, client needs, site and context. As part of the learning process, students will be expected to participate in class discussion as well as complete projects which are designed to develop critical thinking, speaking, writing skills, and architectural design skills. Prerequisite: ARC 594 with a minimum grade of B-. Credit Hours: 1

ARC596 - Project Development + Documentation The purpose of this course is to review the integration & detailing of a new architectural project. Included in the review of these topics will be related discussions with regard to building systems, assemblies, code, and cost. As part of the learning process, students will be expected to participate in class discussion as well as complete projects which are designed to develop critical thinking, speaking, writing, and architectural design skills. Credit Hours: 1

ARC597 - Construction + Evaluation The purpose of this course is to review the construction and evaluation of a new architectural project. Included in the review of these topics will be related discussions with regard to construction and post-occupancy evaluation. As part of the learning process, students will be expected to participate in class discussion as well as complete projects which are designed to develop critical thinking, speaking, and writing skills. Prerequisite: ARC 596 with a minimum grade of B-. Credit Hours: 1

ARC599 - Thesis Graded S/U or DEF only. Prerequisite: ARC 552. Restricted to enrollment in M.Arch. program. Credit Hours: 6

ARC601 - Continuing Enrollment For graduate students who have not finished their degree program and who are in the process of working on their thesis, research paper, or capstone project course (ARC 554). Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Architecture Faculty

Anderson, Robert, Lecturer, M.Arch., Southern Illinois University, 2014; 2000.

Ashayeri, Mehdi., Assistant Professor, Ph.D., Illinois Institute of Technology, 2020, M.Arch., Tehran Azad University, 2012.

Baysinger-Hensley, Sheila, Associate Professor of Practice, J.D., Southern Illinois University Carbondale, B.Arch., University of Illinois, 1989.

Cho, Siwon, Associate Professor, Ph.D., Virginia Tech, 2008; 2009.

Farr, Eric, Assistant Professor of Practice, Ph.D., Technische Universitat of Berlin, Germany, 2012, Master of Architecture

González-Torres, Rolando E., Associate Professor and School Director, Ph.D., Universitat Politecnica de Catalunya, Spain, 2008, M.Ed., Western Kentucky University at Bowling Green, 2001, MLA, Texas A&M, 1996.

Hoffman, Eric, Lecturer, M.Arch., Washington University, 2005, B.Arch., Oklahoma State University, 1999.

Huang, Qian., Associate Professor, Ph.D., Purdue University, 2013.

Irwin, Kirk J., Assistant Professor of Practice, Ph.D., University of Edimburgh, 2024, M.Arch.Hist. University of Virginia, 1990, B.Arch., University of Cincinnati, 1986.

Kalua, Amos, Assistant Professor, Ph.D., Virginia Polytechnic Institute and State University, 2021, M.S. Arch., Virginia Polytechnic Institute and State University, 2018, Master of Engineering in Architecture, Harbin Institute of Technology, China, 2015.

Kheiri, Farshad, Assistant Professor, Ph.D., Texas A&M, 2020, March, Iran University of Science and Technology, 2011.

Kidd, Laura K., Associate Professor and Fashion Studies Program Director, Ph.D., Iowa State University, 1994; 1996.

Lee, Seung-Hee, Professor, Ph.D., The Ohio State University, 1998; 2012.

Lugo, Jose, Lecturer, M.Arch., Southern Illinois University, 2006.

Morthland, Laura, Associate Professor and Interior Design Program Director, M.I.Arc., University of Oregon, 2003.

Roy, Sanjit, Assistant Professor of Practice, M.S.Arch., University of Cincinnati, 2004, B.Arch., New Delhi, India, 2001.

Smith, Peter B., Associate Professor and Design Foundations Coordinator, M.Arch., University of Illinois, 1980, 1975.

Turnipseed, Steven, Senior Lecturer, M.S.Arch., Columbia University, 1976. B.Arch., Ball State, 1975.

Emeriti Faculty

Anz, Craig K., Professor, Emeritus, Ph.D., Texas A&M, M.S. ArchSt., University of Texas, M.Arch., University of Texas at Arlington, 1991.

Dobbins, John K., Associate Professor, Emeritus, M.Arch., M.B.A., University of Illinois, 1986.

LaGarce, Melinda, Associate Professor, Emerita, M.F.A., Texas Technology University, 1972; 1989.

Swenson, Robert, Associate Professor, Emeritus, B.S., M.Arch., Yale University, 1965; 1969.

Wendler, Walter V., Professor, Emeritus, Ph.D., University of Texas, 1991, M.Arch., University of California, Berkeley, 1975.

Workman, Jane, Professor, Emerita, Ph.D., Purdue University, 1982; 1989.

Art

The accredited three-year Master of Fine Arts degree program is structured to provide exposure to a broad range of creative approaches in nine areas of study. A diverse approach to making is promoted, with courses designed to address contemporary issues while maintaining an atmosphere balanced between conceptual development and material exploration. Students are well supported in cross-discipline exploration as they strive to develop their best work. The creative development of graduate students is enhanced through access to excellent resources, including an engaged faculty of professional artists, designers, and scholars, extensively equipped facilities, tuition waivers, and dedicated studio and exhibition spaces. The graduate program is a dynamic environment where emerging artists and designers develop through access to the opportunities inherent at a Carnegie Research University.

Master of Fine Arts (M.F.A.) in Art

The School of Art and Design offers graduate studies leading to the Master of Fine Arts degree in Art. The student is expected to select an area of emphasis among the following: 2D (Drawing, Painting and Printmaking), Ceramics, Design, Glass, Metals (Blacksmithing and Small Metals), or Sculpture. A program will be planned in consultation with the major professor in that area. Graduates are qualified to enter professional practice as artists or the field of higher education.

Admission

An undergraduate degree in art or art education, or the equivalent in coursework or experience if the undergraduate degree is in another discipline, is required for admission into the Master of Fine Arts degree program. The student must also submit transcripts of all previous undergraduate work, present a portfolio of digital images and submit letters of recommendation.

Any exception to these requirements must be approved by the faculty in the studio arts and by the Director of the School of Art and Design.

This program requires a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in Art and Design. Applicants must pay this fee by credit card.

Requirements

A minimum of 60 credit hours is required for the Master of Fine Arts degree in Art. All hours that are to count toward graduation must have the approval of the student's major adviser in the studio area of emphasis. Students may emphasize the following areas in studio: drawing, painting, printmaking, sculpture, ceramics, glass, and metalsmithing/blacksmithing. The length of time required to complete a 60 credit-hour program is usually five–six semesters or three academic years. Most graduate students are in residence for at least four-six semesters. Programs of residency must have the approval of the student's major adviser. Required credit hours are distributed as follows: 27 credit hours in the primary studio emphasis, 9 credit hours in art history or related subjects, six credit hours in thesis or terminal project work, and 18 credit hours of elective study of which twelve credit hours must be in studio disciplines. The remaining credit hours may be elected from any area within the School of Art and Design or in the University at large.

In addition to the completion of coursework, all candidates for the M.F.A. in Art degree must, during the last semester of academic work, present a graduate exhibition, present a terminal project or a written thesis, and pass an oral examination. The terminal project is a creative activity presented in lieu of the written thesis, and in practice, the graduate exhibition is considered to satisfy the terminal project requirement.

Graduate education in the studio areas of emphasis is expensive, and because of the individual nature of creative work, it is virtually impossible to predict the exact cost for each student. The School of Art and Design provides the faculty and the studio and shop facilities that are necessary to the programs offered, but all other costs, especially materials, that are considered necessary to the successful completion of a graduate program are borne by the student.

Instructional Support Equipment Fee

The School of Art and Design assesses all graduate art majors an instructional support equipment fee of $10 per credit hour; a maximum of 12 credit hours will be charged each for fall and spring semesters and 6 credit hours for summer.

Design Concentration

The Master of Fine Arts with a concentration in Design prepares students in the fundamentals of design research, project management, and client-based interdisciplinary design collaborations. This program will afford M.F.A. candidates with opportunities to work collaboratively with undergraduate art and design students, design faculty, and corporate sponsors in applying two- and three-dimensional design process theory, methods, tools, and skills in a team setting aimed at using design as an innovation change agent. This partnering will contribute to the candidates' ability to cross boundaries of disciplines to be smarter and more creative thinkers that can result in entrepreneurial opportunities and a range of creative positions within industry. The thesis experience will include an interdisciplinary component, industry collaborator, plus development of a business plan.

Successful M.F.A. in Art candidates will have a range of career path options including, but not limited to: entrepreneurial brand/product development; product/graphic/brand design consulting; teaching at the higher education level; product-service brand management; consulting design team/project management; company design team management; design innovation management; plus hybrids of these roles. Employment opportunities may also be linked to companies sponsoring thesis projects.

A minimum of 60 credit hours is required for this Master of Fine Arts in Art degree concentration. Required credit hours are distributed as follows: 21 credit hours in primary studio emphasis, nine credit hours in art history or related subjects, nine credit hours in studio electives, nine credit hours in interdisciplinary electives, six credit hours as other electives, plus six credit hours in thesis, apportioned over two semesters.

Instructional Support Equipment Fee

The School of Art and Design assesses all graduate art majors an instructional support equipment fee of $10 per credit hour; a maximum of 12 credit hours will be charged each for fall and spring semesters and 6 credit hours for summer.

Certificate in Art History

The graduate certificate program in Art History will enable students to develop a broad knowledge of the history of art, become familiar with the discipline's methodology, and acquire training in teaching art history. Graduate students will be able to pursue the certificate program either independently or concurrently with an M.F.A. in Art.

Students enrolled in the certificate program must maintain a GPA of no less than 3.0 in all coursework counting towards the certificate. Maximum time allowed to complete all requirements for the certificate is six years from the date of admission to the program.

Admission

Any student who has completed a bachelor's degree is eligible to apply for admission to the certificate program. Students enrolled in the M.F.A. in Art program may enroll concurrently in the certificate program. They must apply for admission to the program before completing the "major part" of certificate work (50 percent of credit hours, or nine credit hours of art history coursework). Students seeking admission to the certificate program will be required to complete an application form and submit transcripts verifying completion of the bachelor's degree. An application fee of $20 will be assessed to cover administrative costs.

Program Requirements

Students enrolled in the certificate program will be required to complete 15 credit hours of graduate level art history coursework. No independent study (AD 507 Readings in Art History) courses will count towards the certificate coursework requirements. Of the 15 art history credit hours required by the certificate program, nine credit hours can count towards requirements of another graduate degree.

Eligible elective courses:

- AD 517: Methods and Theory of the History of Art and Visual Culture
- AD 597A, AD 597B, AD 597C, -OR- AD 597D: Graduate Seminar in Art History

At any time during their enrollment in the certificate program, students will be able to petition the art history faculty to take a comprehensive qualifying exam. The exam will be administered at the end of the Fall and Spring semesters on an "as needed" basis. The test will assess the students' knowledge of art history (pre-history to present), pertinent terms and concepts, and general historical context. It will consist of three parts: slide identification, slide comparison, and a short essay section. A student will have to obtain a passing score on the exam in order to qualify for the Art History Certificate.

Instructional Support Equipment Fee

The School of Art and Design assesses all graduate art majors an instructional support equipment fee of $10 per credit hour; a maximum of 12 credit hours will be charged each for fall and spring semesters and 6 credit hours for summer.

Art Courses

AD423 - Industrial Design Research and Professional Practice This studio course develops the student's ability to conduct in-depth design research and to explore new needs and trends relating design

to society. Additionally, students explore professional practice issues of designer/client, specific design business practices, and ethics. Graduate students will contextualize and execute multifaceted, research-driven problems, requirements include: creation/incorporation of design briefs and professional proposals with outcome solutions to include written research documentation. Undergraduates are restricted to senior standing or consent of instructor, with prerequisite: C or better in AD 363, 383. Studio Fee: $50. Credit Hours: 6

AD424 - Ceramic Design Ceramic Design focuses on three-dimensional design principles concerning form, surface, and function. The objective of this course is to serve as an introduction to the basic fundamentals of design through working with the ceramic medium. A series of demonstrations will provide basic exposure to technical aspects related to prototyping, plaster mold-making, slip-casting, glazing, and firing. The ideas and activities presented here are meant to develop facility in visualization, organization, and creative problem solving; to gain a greater appreciation for the broad visual culture we call art. Material fee: $65. Credit Hours: 3

AD452 - Graphic Design II Multifaceted problems with emphasis on continuity of design in more than one medium or format. Client-based projects, environmental graphics and identity issues in design. Professional proposals and portfolio preparation. Graduate student requirements include multifaceted problems incorporating design briefs/professional proposals with outcome solutions to include written research documentation; no text requirements. Undergraduate prerequisites: C or better in AD 322, 337, and 352. Studio fee: $30. Credit Hours: 3-6

AD460D - Contemporary Photographic Criticism and Practice Through screenings, readings, writings, field trips, and practical exercises, students will gain a broad-based knowledge of critical approaches to contemporary photography. Prerequisite: AD 360D with a grade of C or better. Screening fee: $30. Credit Hours: 3

AD472 - Graphic Design III Special study in current communication design topics. Selected topics will vary with emphasis on studio problems and concept development. Applied problems in advanced digital technologies may include interaction/motion and/or web design. Portfolio preparation. Graduate student requirements: Prepare and present a paper on a specific digital technology, interaction, motion, or web design topic of their choosing. Prerequisites: C or better in AD 322, 337, and 352. Studio fee: $30. Credit Hours: 3-6

AD497A - Research Seminar in Art History-Ancient or Medieval Art A close examination of the history of art and visual culture from Ancient or Medieval periods and regions. In addition to reading and discussion on a specific topic, this class also focuses on the methods and process of conducting a research project. May be repeated for credit as topics will vary. Prerequisites: AD 207A; graduate status; or permission of instructor. Classroom fee for syllabi and assignment prompts: $5. Credit Hours: 3-6

AD497B - Research Seminar in Art History-Early Modern Art (1400-1800) A close examination of the history of art and visual culture from Early Modern (1400-1800) periods and regions. In addition to reading and discussion on a specific topic, this class also focuses on the methods and process of conducting a research project. May be repeated for credit as topics will vary. Prerequisites: AD 207B and AD 207C; graduate status; or permission of instructor. Classroom fee for syllabi and assignment prompts: $5. Credit Hours: 3-6

AD497C - Research Seminar in Art History-Modern and Contemporary Art A close examination of the history of art and visual culture from Modern and Contemporary periods and regions. In addition to reading and discussion on a specific topic, this class also focuses on the methods and process of conducting a research project. May be repeated for credit as topics will vary. Prerequisites: AD 207C and either one of AD 207A or AD 207B; graduate status; or permission of instructor. Classroom fee for syllabi and assignment prompts: $5. Credit Hours: 3-6

AD497D - Research Seminar in Art History-Selected Topics A close examination of the history of art and visual culture from selected periods and regions. In addition to reading and discussion on a specific topic, this class also focuses on the methods and process of conducting a research project. May be repeated for credit as topics will vary. Prerequisites: Two from either AD 207A, AD 207B, or AD 207C; graduate status; or permission of instructor. Classroom fee for syllabi and assignment prompts: $5. Credit Hours: 3-6

AD499 - Individual Problems Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major field. Designed to adapt to students' individual needs in problem research. Restricted to senior standing in the School of Art and Design. Prerequisite: an overall 3.0 GPA. Special approval needed from the instructor. Credit Hours: 1-21

AD500 - Advanced Drawing II A studio directed toward individual research in the student's major field. Emphasis is placed upon the historical materials, processes and ideas that form the content and experience of the student's major field. Special approval needed from the advisor. Studio fee: $25. Credit Hours: 3-21

AD501 - Advanced Painting II Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes and ideas that form the content and experience of the student's major field. Special approval needed from the advisor. Studio fee: $35. Credit Hours: 3-21

AD502 - Advanced Printmaking II Advanced studio course in printmaking directed toward individual research in the student's choice of print media. Emphasis is on the processes, which lead to the formation of personal content. Special approval needed from the advisor. Studio fee: $20 per credit hour enrolled. Credit Hours: 3-21

AD503 - Advanced Sculpture II Advanced studio course based upon focused individual research in the student's chosen media. Students develop a personal aesthetic in relation to the field of sculpture through technical accomplishment, intensive output, and engagement in rigorous critique. Special approval needed from the advisor. Incidental expenses may exceed $100. Studio fee: $30 per credit hour. Credit Hours: 3-21

AD504 - Advanced Ceramics II Art studio course directed toward individual research in the student's major field. Coursework is designed to assist the student's discovery of ceramic form and content as applied to personal artistic expression. Emphasis upon the development of creative studio research techniques and seminar-type experiences exploring historical and contemporary issues as they relate to ceramic art. Special approval needed from the advisor. Studio fee: $55 per credit hour enrolled. Incidental expenses may exceed $50. Credit Hours: 3-21

AD505 - Advanced Metalsmithing II Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes and ideas that form the content and experience of the student's major field. Special approval needed from the advisor. Studio fee: $40 per credit hour enrolled. Incidental expenses not to exceed $75 for each section. Credit Hours: 3-21

AD507 - Readings in Art History and Visual Culture Independent study on topics in the history of art and visual culture developed in consultation with art history faculty. Typical projects include directed readings and research projects. Requires permission of the instructor. Credit Hours: 3

AD510 - Integrated Design Practice This course prepares students with design research theory and methodology to tackle critical social issues of our times. It will introduce basic methods in design research and methodology, both in qualitative and quantitative methods. It also serves as a platform for scholarly inquiry into design in the disciplines of graphic design, industrial/product design, advertising/ art direction, fashion design, and interior architecture and in other aesthetic, spatial and technological practices. Students develop conceptual skills, aesthetic awareness, and technical mastery in individual and collaborative studio projects. Credit Hours: 3

AD514 - Advanced Glass II An advanced glass course intended to increase the student's knowledge of the potential of glass as a medium of creative expression and to refine studio skills associated with the material. Coursework will include the investigation of historical and contemporary solutions to aesthetic problems related to the medium. Special approval needed from the advisor. Studio fee: $80 per credit hour enrolled. Credit Hours: 3-21

AD517 - Methods and Theory of the History of Art and Visual Culture This course introduces graduate students to the history of the disciplines of art history and visual culture, examining the

assumptions and methods that have guided definitions, analyses, and critiques of art and visual culture. This course is required of students in the MA program in art history and visual culture. Credit Hours: 3

AD520 - Digital Craft Digital Craft focuses on three-dimensional design principles concerning form, surface, and function. This course serves as an introduction to the basic fundamentals of digital design for prototyping objects in craft media. Students will become familiar with several digital software programs used in basic prototyping and will be taught basic technical skills related to prototyping, plaster mold-making, 3-D modeling, 3-D printing, slip-casting, glazing, and firing kilns. The ideas and activities presented in this class are meant to develop facility in visualization, organization, and creative problem solving; to gain an understanding of how digital and design approaches can be used with craft materials. Studio fee: $95. Credit Hours: 3

AD521 - Advanced Design II Multifaceted problems with emphasis on continuity of design in more than one medium or format. Advanced multifaceted problems incorporating design briefs and/or professional proposals intended to increase a student's knowledge of the theory and practice of branding, identity systems and design process and methodologies. Coursework will include the development of a body of work including research with outcome solutions based on individual or client-based requirements. Fee: $30. Credit Hours: 3

AD522 - Advanced Printmaking I Independent inquiry into Printmaking topics, emphasizing technique and conceptual synthesis under the guidance of faculty. Prerequisite: none. Special approval is needed from faculty for enrollment. Studio fee: $20 per credit hour enrolled. Incidental expenses may exceed $50 for each section. Credit Hours: 3-6

AD523 - Advanced Sculpture I Independent inquiry into sculpture topics, emphasizing technique and conceptual synthesis under the guidance of faculty. Prerequisite: none. Special approval is needed from faculty for enrollment. Studio fee: $25 per credit hour. Incidental expenses will be incurred. Credit Hours: 3-6

AD524 - Advanced Ceramic Inquiry Independent inquiry into ceramic topics, emphasizing technique and conceptual synthesis under the guidance of faculty. Prerequisite: none. Special approval is needed from faculty for enrollment. Studio fee: $40 per credit hour enrolled. Credit Hours: 3-6

AD525A - Advanced Metalsmithing Independent inquiry into Small Metals topics, emphasizing technique and conceptual synthesis under the guidance of faculty. Prerequisite: none. Special approval is needed from faculty for enrollment. Studio fee: $30 per credit hour. Incidental expenses not to exceed $75 for each section. Credit Hours: 3-6

AD525B - Advanced Metalsmithing Independent inquiry into Blacksmithing topics, emphasizing technique and conceptual synthesis under the guidance of faculty. Prerequisite: none. Special approval is needed from faculty for enrollment. Studio fee: $30 per credit hour. Incidental expenses not to exceed $75 for each section. Credit Hours: 3-6

AD526 - Advanced 2D Studio-Drawing Independent inquiry into Drawing topics, emphasizing technique and conceptual synthesis under the guidance of faculty. Prerequisite: none. Special approval is needed from faculty for enrollment. Studio fee: $8 per credit hour. Expenses may exceed $100 per course. Credit Hours: 3-6

AD529 - Advanced 2D Studio-Painting Independent inquiry into Painting topics, emphasizing technique and conceptual synthesis under the guidance of faculty. Prerequisite: none. Special approval is needed from faculty for enrollment. Studio fee: $4 per credit hour. Expenses may exceed $100 per course. Credit Hours: 3-6

AD530 - Advanced Digital Design I Advanced design course intended to increase a student's knowledge of the theory and practical knowledge of digital design technologies and digital design problems. Coursework will include documentation of design process, user research, and exploration of concepts and topics related to interaction design, interactive design, and time-based graphic design. Credit Hours: 3

AD531 - Advanced Digital Design II A computer laboratory course focused on advanced utilization of two- and three-dimensional design processes, drawing and modeling software, and the application

of such in the design profession. Course content covers advanced modeling techniques, surface modeling, power surface subdivision surface modeling, NURBS modeling, generative design, design for manufacturing assembly, disassembly and rapid prototyping, product planning, simulation, graphics and renderings, creation of tables used with assembly drawings and bill of materials. Credit Hours: 3-6

AD532 - 3D Modeling & Visualization Studio art course focusing on 3D software for modeling, rendering, and visualizing objects and environments. Projects include various 3D modeling methods and rendering techniques for 2D and 3D output for print, screen, and rapid prototyping equipment. Students who have completed AD 432 will not receive credit for this course. Studio fee: $85. Additional expenses could be incurred. Credit Hours: 3

AD533 - Understanding and Working with Wood An exploration of wood as material through the use of traditional and digital technologies using hand tools, woodworking machines, and 3D software. Applications include functional as well as art objects. Repeatable for a maximum of 6 hours toward degree. Students who have completed AD 433 will not receive credit for this course. Studio fee: $75. Incidental expenses will be incurred. Credit Hours: 3

AD534 - Advanced Glass Independent inquiry into sculpture topics, emphasizing technique and conceptual synthesis under the guidance of faculty. Prerequisite: none. Special approval is needed from faculty for enrollment. Studio fee: $80 per credit hour enrolled. Credit Hours: 3-6

AD537 - Teaching Practicum in Art History Introduces students to pedagogical methods relevant to teaching art history. Students enrolled in the practicum will serve under the close supervision of the art history faculty as discussion leaders for one section of AD 101 or the AD 207 sequence. Practicum students will attend the AD 207 lectures and participate in a weekly teaching workshop, which will address topics such as the development of course syllabi and assignments, grading criteria, classroom policies, and teaching strategies. Prerequisite: Art History Certificate program and/or special approval from the instructor required. Credit Hours: 3

AD542 - Moving Image Art Time-based media art course covering topics and skills in 2D animation, motion graphics, video editing, composting, and visual effects. Students who have completed AD 442 will not receive credit for this course. Studio fee: $85. Additional expenses may be incurred. Credit Hours: 3

AD551 - CAD and SAM Lab This course instructs participants how to use software and hardware required for rapid prototyping and the fabrication equipment currently available in the S.A.M. Lab (Subtractive Additive Maker Lab). Students will learn 2D and 3D modeling, with the objective to create physical outcomes. Students who have completed AD 451 will not receive credit for this course. Studio fee: $100. Additional expenses will be incurred. Credit Hours: 3

AD559 - Design Internship Supervised work experience related to student's academic program and career objectives. Not repeatable for credit. Special approval needed from design area head. Students who have completed AD 459 will not receive credit for this course. Mandatory Pass/Fail. Credit Hours: 1-6

AD560 - Contemporary Photo Criticism Through screenings, readings, writings, field trips, and practical exercises, students will gain a broad-based knowledge of critical approaches to contemporary photography. Prerequisite: AD 360D with a grade of C or better. Studio fee: $30. Additional expenses will be incurred. Credit Hours: 3

AD572A - Advanced Design I Problems in promotional design applications including campaigns, packaging and advertising graphics. Emphasis is placed on professional realities, problem solving, and further development of creative design abilities. Multifaceted problems that incorporate design briefs and professional proposals with outcome solutions to include written research documentation and finished concept creation. Fee: $60. Credit Hours: 3

AD572B - Advanced Design I Problems in physical game applications including game ideation methods, game construction, playtesting, packaging, sales and promotional campaigns, and advertising graphics. Emphasis is on professional realities, problem solving, and further development of creative design abilities. Multifaceted problems that incorporate design briefs and professional proposals with outcome solutions to include written research documentation and finished concept creation. Fee: $75. Credit Hours: 3

AD583 - Practicum in Industrial Design Advanced and comprehensive product design projects focusing on innovation and user needs. Projects may include corporate sponsors and/or interdisciplinary teams. Students will integrate research and 2D and 3D process documentation with additional focus on human factors and product interface. Undergraduates: Course parallels work in AD 363 and must be taken concurrently. Prerequisites: C or better in AD 313 and AD 323. Concurrent enrollment in AD 363. Graduates: Prepare and present a paper on a specific innovation, user needs, interdisciplinary teams, or collaboration topic of their choosing. Graduate students will serve as design directors for the client-based projects conducted by the undergraduate students in the class. Studio Fee: $60. Credit Hours: 3

AD590 - Individual Research Art studio course directed toward individual research. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's creative and academic research. Designed to adapt to students' individual research needs. Special approval needed from the instructor. Credit Hours: 1-21

AD596 - Exam in Art History and Visual Culture A comprehensive exam on the history, methods, and theory of the history of art and visual culture. Special written approval needed from the primary and secondary advisors. Credit Hours: 3

AD597A - Graduate Seminar in Art History-Medieval Art A close examination of the history of art and visual culture from various periods and regions. Topics will vary, and include (A) Medieval Art. Each section may be repeated for credit as topics vary. Credit Hours: 3

AD597B - Graduate Seminar in Art History-Early Modern Art A close examination of the history of art and visual culture from various periods and regions. Topics will vary, and include (B) Early Modern Art. Each section may be repeated for credit as topics vary. Credit Hours: 3

AD597C - Graduate Seminar in Art History-Modern and Contemporary Art A close examination of the history of art and visual culture from various periods and regions. Topics will vary, and include (C) Modern and Contemporary Art. Each section may be repeated for credit as topics vary. Credit Hours: 3

AD597D - Graduate Seminar in Art History-Selected Topics A close examination of the history of art and visual culture from various periods and regions. Topics will vary, and include (D) Selected Topics. Each section may be repeated for credit as topics vary. Credit Hours: 3

AD599 - Thesis A thesis course that is directed toward individual research in the student's major field. Emphasis is placed upon the development of each student's approach to his/her professional practice within the context of the appropriate studio, art history/visual culture, or design field requirement set. Credit Hours: 3-6

AD601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Art Faculty

Abdul-Musawwir, Najjar, Professor, Art, M.F.A., Southern Illinois University Carbondale, 1997; 2001. Drawing and painting, art history; cross-appointed with Africana Studies

Allen, Mont, Assistant Professor, Ph.D., University of California, Berkeley, 2014; 2014. Art history.

Chalmers, Pattie, Professor, M.F.A., University of Minnesota, 2001; 2006. Ceramics.

Fredrickson, Laurel, Associate Professor, Ph.D., Duke, 2007; 2014. Contemporary and modern art with a global emphasis; Cross-appointed with Women, Gender and Sexuality Studies.

Janssen,Travis, Associate Professor, M.F.A., Arizona State University, Tempe, 2007; 2014. Printmaking.

Kim, Sun Kyoung, Associate Professor, M.F.A., University of Illinois, 2007; 2008. Metalsmithing.

Lee, Jiyong, Professor, M.F.A., Rochester Institute of Technology, 2001; 2005. Glass.

Lopez, Alex, Associate Professor, M.F.A., Alfred University, 1998; 2006. 3-D foundations/sculpture.

Lopez, Robert Anthony, Associate Professor and Interim Director, M.F.A., University of Illinois, Urbana-Champaign, 2000; 2009. Industrial design and communication design.

Monteith, Jerry, Professor, M.F.A., Cranbrook Academy of Art, 1978; 1990. Sculpture.

Palmer, Erin L., Associate Professor, M.F.A., Yale University, 1993; 1993. Drawing and painting.

Pease, Mark, Associate Professor, M.F.A., University of Pennsylvania, 2003; 2009. Digital art.

Scott, Aaron, Associate Professor, M.F.A., Purdue University, 2008; 2009. Industrial design and communication design.

Shang, Xuhong, Professor, M.F.A., Tyler School of Art, Temple University, 1992; 2008. Painting.

Smith, Richard E., Professor, M.F.A., Southern Illinois University Carbondale, 1992; 1998. Blacksmithing.

Emeriti Faculty

Abrahamson, Roy E., Associate Professor, Emeritus, Ed.D., Columbia University, 1965; 1965.

Addington, Aldon M., Associate Professor, Emeritus, M.F.A., Cranbrook Academy of Art, 1966; 1967.

Archer, Richard, Assistant Professor, Emeritus, M.S., Governor's State University, 1979; 1986.

Belletire, Steven P., Professor, Emeritus, B.F.A., University of Illinois, Champaign, 1971; 1997.

Bernstein, Lawrence A., Associate Professor, Emeritus, M.F.A., Cranbrook Academy of Art, 1953; 1962.

Bickel, Barbara, Associate Professor, Emerita, Ph.D., The University of British Columbia, 2008.

Boysen, Bill H., Professor, Emeritus, M.F.A., University of Wisconsin, 1966; 1966.

Briggs, Larry S., Associate Professor, Emeritus, B.F.A., University of Oklahoma, 1956; 1985.

Busch, Larry, Associate Professor, Emeritus, M.S., Southern Illinois University Carbondale, 1970; 1970.

Deller, Harris, Professor, Emeritus, M.F.A., Cranbrook Academy of Art, 1973; 1975.

Feldman, Joel B., Professor, Emeritus, M.F.A., Indiana University, 1967; 1973.

Gradle, Sally A., Associate Professor, Emerita, Ed.D., University of Illinois, Urbana-Champaign, 2004; 2005.

Greenfield, Sylvia R., Professor, Emerita, M.F.A., University of Colorado, 1967; 1968.

Lintault, M. Joan, Professor, Emerita, M.F.A., Southern Illinois University Carbondale, 1962; 1973.

Mavigliano, George J., Associate Professor, Emeritus, M.A., Northern Illinois University, 1967; 1970.

Mawdsley, Richard W., Professor, Emeritus, M.F.A., University of Kansas, 1969; 1978.

Onken, Michael O., Associate Professor, Emeritus, M.A., Northern Illinois University, 1966; 1968.

Paulson, Robert L., Professor, Emeritus, M.F.A., University of Wisconsin, 1967; 1967.

Shay, Edward H., Professor, Emeritus, M.F.A., University of Illinois, 1971.

Sullivan, James E., Associate Professor, Emeritus, M.A., University of California, Los Angeles, 1965; 1969.

Walsh, Thomas J., Professor, Emeritus, M.F.A., University of Michigan, 1962; 1967.

Youngblood, Michael, Associate Professor, Emeritus, Ph.D., University of Oregon, 1975; 1979.

Zivkovich, Kay M. Pick, Professor, Emerita, M.F.A., Southern Illinois University Carbondale, 1973; 1989.

Aviation Management

Graduate work leading to a Master of Science in Aviation Management is offered by the School of Aviation. The program is designed to prepare working-professionals and full-time students for advancement in the aviation industry. The online delivery affords working professionals the ability to maintain their professional and personal lives while completing a degree that builds on previous experience and education. The objectives of the program are to produce graduates who are prepared to

acquire management positions within the aviation industry and are able to pursue continued education or demonstrate a commitment to lifelong learning.

The M.S. in Aviation Management prepares graduates to begin or advance their careers in the aviation industry with organizations such as: airlines, aerospace manufacturers, aviation consulting firms, government agencies, and more. Graduates of the program are qualified for management positions throughout the aviation industry such as: safety coordinator, security manager, project manager, flight operations manager, maintenance control, quality assurance manager, among many others.

Admission Requirements

The MSAVM program accepts students on rolling admission for each academic term (Fall, Spring, Summer). The course sequence affords this flexibility by offering the capstone course AVM 580 each fall and spring semester. In order to be eligible for admission to the MSAVM program, prospective students must hold a bachelor's degree prior to application, or seek the 4+1 completion option, where up to 9 credit hours hours of undergraduate 500-level courses will count towards the master degree. Students seeking 4+1 completion may complete 400-level MSAVM coursework as “senior with degree,” or during the completion of their bachelor degree.

Applications completed after the stated deadlines will be reviewed if space becomes available:

- July 15 - Fall Admission
- April 15 - Summer Admission
- December 1 - Spring Admission

Preference is given to students with a bachelor's degree in a related field and/or active employment in an aviation profession.

The minimum admission requirements for this program are provided below:

- Candidates will possess a bachelor degree.[1]
- Overall GPA of 2.7 or better (4.0 scale) on the entire last undergraduate GPA earned at the time of application. A minimum GPA of 3.00 (A = 4.0) in all undergraduate and graduate work is needed for serious consideration.
- Complete MSAVM application
- Resume

[1]except for students seeking 4+1 bachelor/master completion.

Program Requirements

The graduation requirements for the MSAVM program are as follows:

- The student must complete all required coursework with a cumulative GPA of 3.0 or better, with no single grade lower than a “C”.
- Satisfactory and timely completion of the research project assigned in AVM 580.

Master of Science (M.S.) in Aviation Management

The MSAVM master program is designed using an online model to afford working professionals the ability to maintain their professional and personal lives while completing the degree in as quickly as 12 months.

The 30-credit-hour program consists of a program core curriculum (21-credit hours) building managerial skills and extensive aviation knowledge. Foundational courses in statistics and information systems provide a framework for analytical skills; an academic core in aviation law, safety, and international aviation provide a breadth of knowledge; and a capstone data analysis course demonstrates the graduate’s readiness for real-world business project management.

In addition to the program core, students will complete 9 credit hours of elective coursework selected by the student and the Program Advisor to give students additional specialized training related to their own specific interests and career goals.

Program Core Courses - 21 credit hours

- AVM 540: Organizational Theory and Leadership (3 CH)
- AVM 550: Statistical Concepts and Managerial Information Systems in Aviation (3 CH)
- AVM 551: Aviation Policy, Law, and Regulation (3 CH)
- AVM 553: Advanced Safety Administration (3 CH)
- AVM 554: Aviation Planning (3 CH)
- AVM 555: International Aviation (3 CH)
- AVM 580: Independent Research Capstone (3 CH)

Elective Courses - 9 credit hours

(Advisor approved 500 level coursework), may include:

- AVM 510: Aviation Legal Aspects (3 CH)
- AVM 520: Aviation Safety (3 CH)
- AVM 530: Labor Relations in Aviation (3 CH)
- AVM 539: Aviation Fiscal Aspects (3 CH)
- AVM 552: Advanced Airport Administration (3 CH)
- AVT 570: Fault Prediction and Analysis (3 CH)
- AVT 578: Aviation Business Practices (3 CH)
- AVT 588: Aerospace Safety (3 CH)

Aviation Management Courses

AVM510 - Aviation Legal Aspects The course will emphasize basic law as it relates to contracts, personnel, liabilities, and legal authority of governmental units and agencies as it relates to the aviation industry. Student who have completed AVM 410 are not eligible to enroll. Credit Hours: 3

AVM520 - Aviation Safety This course will survey the various aspects of aviation flight and ground safety management. Weather, air traffic control, mechanical and human factors in aviation safety management will be reviewed. Case studies of individual aviation accidents and incidents will be analyzed. Students who have completed AVM 420 are not eligible to enroll. Credit Hours: 3

AVM530 - Labor Relations in Aviation The legislation governing labor relations in the U.S. consists of two pieces of legislation, the Railway Labor Act for labor relations in the railroad/airline industries; and the National Labor Relations Act for all other industrial sectors. This course focuses on the examination of air transport labor relations in the context of these key laws. Students will understand the Constitutional basis for labor law, how labor law affects the creation of regulations under 14 CFR particularly flight crew workload, required number of flight crew, flight deck operation, flight safety, and operations in the National Airspace System. Students who have completed AVM 430 are not eligible to enroll. Credit Hours: 3

AVM539 - Aviation Fiscal Aspects An introduction to the fiscal problems encountered in the administration of aviation facilities. Topics include economics principles, accounting principles, finance principles, equity and debt markets. Credit Hours: 3

AVM540 - Organizational Theory and Leadership An examination of individual, group and organizational issues affecting behavior and management of organizations, including aviation organizations. Topics include individual differences, organizational culture, organizational structure, leadership, general management, ethical decision making, and change management. Credit Hours: 3

AVM550 - Statistical Concepts and Management Information Systems in Aviation This course is an introduction to quantitative analysis used in aviation. Students will gain skills necessary to employ the techniques of data analysis and reporting through the use of descriptive and inferential statistics. Topics include: discrete and continuous probability distributions; construction and interpretation of confidence intervals; applications of mathematical models; hypothesis testing and linear regression. Students will

demonstrate their understanding and application of various computer applications currently used in aerospace support and will employ these tools to organize, analyze and report data. Credit Hours: 3

AVM551 - Aviation Policy, Law, and Regulation (Same as PADM 551) Examination of the history of American aviation policy, law and regulation. The course focuses primarily on the development, implementation and enforcement of aviation policies and regulations at the federal level. Special attention is paid to the interaction of various government agencies and constituency groups, such as the aircraft industry, airport authorities, airlines, private pilots and passengers. In addition to the historical survey, students will analyze current policy and regulatory trends and identify future problems and opportunities for American aviation policy. Restricted to enrollment in MPAA graduate program or consent of instructor. Credit Hours: 3

AVM552 - Advanced Airport Administration (Same as PADM 552) This course will address the role and function of the airport administrator, especially related to the tasks of developing, operating and maintaining various airport services to meet the needs of key airport users. This course will study key airport administration cases at primary, commercial service, reliever and general aviation airports. Meeting key airport regulations concerning operations and security will be a focus of the course. Restricted to enrollment in MPAA graduate program or consent of instructor. Credit Hours: 3

AVM553 - Advanced Safety Administration (Same as PADM 553) The Aviation Safety Administrator's job function and responsibility for safety and accident prevention within an aviation organization is examined using the case study method. The relevant theory, concepts, procedures and techniques of resource allocation, organizational design, decision modeling, task assignment, delegation of authority and responsibility, establishment of organizational goals and priorities and risk management as they relate to Aviation Safety are included. The job functions of an Aircraft Accident Investigation Team and of an Aviation Safety Inspector will be studied. Aviation safety administration literature will be reviewed. Credit Hours: 3

AVM554 - Aviation Planning (Same as PADM 554) Examination of aviation planning at the international, federal, state and local levels. The course focuses primarily on federal aviation planning, but considerable attention is paid to the interdependent relationship between the various levels of planning. Special attention is paid to the planning process and the role of various agencies and client groups within the aviation community. Restricted to enrollment in MPAA graduate program or consent of instructor. Credit Hours: 3

AVM555 - International Aviation An examination of the regulatory, political, economic impact and structural organization of international aviation. Contemporary issues in the national and international environment will be discussed. The history and evolution of international aviation will be discussed. Aircraft accidents that occurred on a global stage will be examined and resulting regulatory and social changes will be explored. Global issues surrounding advances in Air Traffic Management will be discussed. The International Civil Aviation Organization (ICAO) and its practices will also be examined. Credit Hours: 3

AVM580 - Independent Research Capstone The selection and investigation of a research topic in a student's area of interest that culminates in a paper satisfying the research requirement for a Master of Science in Aviation Management. This paper should showcase the application of a student's skill and knowledge gained from the program's courses to a current issue in the aviation industry. Research papers should include all appropriate quantitative or qualitative components including the analysis of any data found or generated. Research topics should be approved by the course instructor and by the University's Human Subjects Committee prior to beginning any research activities. Prerequisite: AVM 550 with a C or better or concurrent enrollment. Credit Hours: 3

AVM601 - Continuing Enrollment This course is required to satisfy the Graduate School's requirement of continuous enrollment and is intended for those students who are enrolled in the program but cannot take a core academic course during a given semester. Credit Hours: 1

Aviation Management Faculty

Harrison, Bryan T., Associate Professor and MSAVM Program Coordinator, M.S., M.B.A., Southern Illinois University Carbondale, 2007; 2011.

Johnson, Karen J., Associate Professor, Ph.D., Southern Illinois University Carbondale, 2020.

Miller, Irene, Assistant Professor, Ed.D., Oklahoma State University, 2022.

Robertson, Michael F., Professor, Safety Officer, Ph.D., Southern Illinois University Carbondale, 2017.

Emeriti Faculty

Burgener, Michael A., Associate Professor, M.B.A., The Citadel, Charleston, SC. 2001.

NewMyer, David A., Professor, Emeritus, Aviation Management and Flight, Ph.D., Southern Illinois University Carbondale, 1987.

Rodriguez, Charles L., Assistant Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1997.

Ruiz, Jose R., Professor, Ph.D., Southern Illinois University Carbondale, 2003.

Behavior Analysis and Therapy

The M.S. degree in Behavior Analysis and Therapy is a 45-credit hour program. Candidates will complete a research paper or a thesis. Because of the requirements of our accrediting body, the Association for Behavior Analysis International (ABAI), an empirical thesis is required. Only by approval of the program can a research paper be completed. The thesis option typically requires a thesis of an experimental nature, a survey, or other form of research in which empirical data are collected and analyzed. Candidates must demonstrate their skills in formulating researchable questions or hypotheses, in identifying and/or manipulating relevant variables, and in the analysis and reporting of the results.

Master of Science (M.S.) in Behavior Analysis and Therapy

The behavior analysis and therapy program is devoted to the empirically-based development and application of learning principles to a wide variety of human needs. Training is offered in behavioral practice, research and theory as it applies to problems such as child abuse and neglect, developmental disabilities, chronic medical conditions, and traumatic head injury.

Degree Requirements

In fulfilling the 45-credit hour requirement, the student must complete the required courses or their equivalent, at least one 3-credit hour practicum, an internship, and either a research paper or thesis. Not passing a course on two occasions can result in removal from the program.

Required Courses

- BAT 503: Basic Behavior Analysis
- BAT 507: Behavior Consultation and Management
- BAT 508: Complex Behavior Analysis
- BAT 509A: Behavior Analysis Research Designs: Single-Subject Experimental Designs
- BAT 512: Legal and Ethical Issues in Behavior Analysis
- BAT 526: Applications of Behavior Analysis
- BAT 527: Analysis of Verbal Behavior
- BAT 529: Radical Behaviorism I
- BAT 535: Behavioral Observation Methods
- BAT 594: Practicum in Behavior Analysis and Therapy
- BAT 595: Internship in Behavior Analysis and Therapy

Internship

The student must complete satisfactorily nine credit hours of BAT 595 (Internship in Behavior Analysis and Therapy) under the supervision of a behavior analysis and therapy faculty member. The internship is typically begun following two semesters of course work.

Research Paper or Thesis

The student must complete satisfactorily six credit hours of BAT 593 (Research in Behavior Analysis and Therapy) or BAT 599 (Thesis) under the direction of a chairperson. Not completing the thesis or research project within three semesters can result in removal from the program. The chairperson is a member of the behavior analysis and therapy faculty selected by program consensus.

For the research paper, an additional graduate faculty member may be selected by mutual agreement between the student and the chairperson to serve as a reader. This is not required.

For the thesis, a second and third faculty member of the behavior analysis and therapy program will be selected by program consensus to serve as thesis committee members. The committee will review the thesis before its initiation, as a prospectus, and after its completion, in an oral defense.

Accreditation

The M.S. in Behavioral Analysis and Therapy program is accredited by The Association for Behavior Analysis International (ABAI).

Behavior Analysis and Therapy Courses

BAT406 - Applied Behavior Analysis II This course is an advanced survey of basic and applied research related to the principles and procedures in behavior analysis. As the second part of the ABA courses, this course serves to extend student's understanding of the principles of respondent and operant conditioning through exposure to basic research and demonstrations of interventions across diverse populations and settings. Prerequisite: REHB 312 with a minimum grade of C. Credit Hours: 3

BAT430 - Behavior Therapy This course will trace the history of behavior therapy from early days where aversive and punishment procedures were instated to modern day positive-based interventions. Various therapeutic approaches will be covered including behavioral relaxation training, functional analytic psychotherapy, acceptance therapy and positive/mindful therapies. Prerequisite: BAT 312, BAT 406 with minimum grades of C. Credit Hours: 3

BAT433 - Applied Behavior Analysis with Pediatric Populations This course provides students with knowledge related to the application of behavior analytic approaches to assessment and treatment of many childhood behavior problems. Topics covered will include assessment and treatment of problem behavior exhibited in school and home settings displayed by typically-functioning individuals, as well as individuals with a variety of developmental disorders. Prerequisite: BAT 312, BAT 406. Credit Hours: 3

BAT440 - Ethics in Behavior Analysis & Therapy This course focuses on ethical conduct within the field of behavior analysis, and emphasizes problem-solving strategies to assist practitioners in resolving ethical dilemmas that may come about in the delivery of behavioral services. The course will provide an interpretation of the Behavior Analyst Certification Board guidelines for ethical conduct. Credit Hours: 3

BAT441 - Assessment & Measurement This course will provide an overview of behavioral observation methods, including approaches for monitoring and recording behavior over the course of behavior analytic services. Issues of reliability and validity will also be examined. Prerequisite: BAT 312. Credit Hours: 3

BAT445H - Autism and Intellectual Disabilities This class introduces students to the variety of intellectual disabilities found within our society. Topics will range from how genetic mutations can result in life long disabilities, as well as how unknown factors produce disorders such as autism. Students will

learn about diagnoses, assessment and treatment for a variety of disorders and how to manage such disabilities throughout the lifespan. Credit Hours: 3

BAT452 - Behavior Analytic Approaches to Individualized Service Planning This course provides students with the skills to develop and evaluate service plans for individuals receiving community education, rehabilitation, and other services from a behavior analytic perspective. Topics covered include person-centered assessment, functional community based training, individualized assessment, and written treatment plans. Prerequisite: BAT 312; BAT 406 with minimum grades of C. Credit Hours: 3

BAT474 - Performance Management This course focuses on the application of behavior analysis within organizations. Using the principles of behavioral science, students will learn how to manage employee behavior, develop organizational goals and objectives, track performance of work teams, and provide objective measures of compensation. Topics will include program evaluation, motivation, performance reviews, and emerging trends in organizational design. Prerequisite: BAT 312; BAT 406 with minimum grades of C. Credit Hours: 3

BAT493 - Single-Case Research Methodology This course will provide students with the skills necessary to act as critical consumers of intervention research. It will also provide students with the analytical skills necessary to apply the logic of single-case research methodology to their work with the consumer. Emphasized will be the critique and interpretation of published research, as well as the writing competencies required for a student to successfully prepare a research paper. Prerequisite: BAT 312 and simultaneous enrollment in or prior completion of BAT 406. Credit Hours: 3

BAT495 - Practicum Application of behavioral analytic principles to clinical settings, cooperatively guided by Behavior Analysis and Therapy program faculty and human service agency staff. Prerequisite: BAT 312, BAT 406, BAT 440 with minimum grades of C. Credit Hours: 3

BAT503 - Basic Behavior Analysis Philosophy, terminology, and basic methodology of experimental and applied behavior analysis. Focuses on a variety of operant and respondent conditioning procedures for shaping new behaviors and modifying established behaviors. Special approval needed from the instructor. Credit Hours: 3

BAT507 - Behavior Consultation and Management Focus on the behavior analysis techniques needed for use in organizational and consultation settings. The fundamentals for developing effective consulting relationships are presented. Skills for becoming a behavior analytic consultant in clinical settings such as schools, developmental disability facilities, and managed care environments are presented. Additional behavior analytic consultant skills will be taught for effective practice of organizational behavior management in business and industry settings. Prerequisite: BAT 503. Credit Hours: 3

BAT508 - Complex Behavior Analysis Experimental analysis of procedures that result in acquisition, maintenance, and attenuation of complex individual and social behavior. Special approval needed from the instructor. Laboratory fee not to exceed $80 will be assessed to residential students. Online students will be expected to pay for virtual software out-of-pocket. Credit Hours: 3

BAT509A - Behavior Analysis Research Designs-Single Subject Experimental Designs Focuses on behavior analysis research design and methodology. Three semester hours will be granted for each unit. Special approval needed from the instructor. Credit Hours: 3

BAT509B - Behavior Analysis Research Designs-Group Experimental Designs Focuses on behavior analysis research design and methodology. Three semester hours will be granted for each unit. Special approval needed from the instructor. Credit Hours: 3

BAT512 - Legal and Ethical Issues in Behavior Analysis Focuses on federal and state legislation, litigation, policies, guidelines, and other forms of legal and ethical control of the professional practice of behavior analysis and therapy. Implications for research and service will be discussed. Special approval needed from the instructor. Credit Hours: 3

BAT526 - Applications of Behavior Analysis This course teaches students to identify, employ, and evaluate behavior analytic procedures in applied settings. Additional skills emphasized are those which enable students to communicate effectively with others involved in treatment planning and implementation. Lecture/workshop format. Credit Hours: 3

BAT527 - Analysis of Verbal Behavior This course is an advanced graduate seminar in verbal behavior. The course will examine Skinner's (1957) original analysis of verbal behavior as well as draw from other relevant literature in basic, applied, and conceptual analyses of behavior. In addition, course content will include critiques of, and responses to, Skinner's analysis of verbal behavior as well as literature on Relational Frame Theory and applied topics. BDS Learning Modules Course fee: $400. Credit Hours: 3

BAT528 - Experimental Analysis of Behavior This course is designed to provide practical mastery over the basic principles of behavior. The complexities of principles such as reinforcement, discriminative stimuli, motivating operations, extinction, and basic schedules of reinforcement will be discussed and applied in laboratory work conducted with non-humans. Credit Hours: 3

BAT529 - Radical Behaviorism I This course will explore the primary tenets of the system of psychology known as radical behaviorism. Canonical papers of B. F. Skinner and other scholars involved in the theory and philosophy of radical behaviorism will be read and discussed as well as critiques and interpretations thereof. Prerequisites: BAT 535, BAT 503, BAT 509A, and BAT 508 (concurrent enrollment allowed in BAT 508). Credit Hours: 3

BAT530 - Radical Behaviorism II This course will continue the exploration of the system of psychology known as radical behaviorism. Foci will include philosophical foundations, contrasts/comparisons with other systems of psychology, and the movement toward a synthesis of psychological approaches. Prerequisite: BAT 529. Credit Hours: 3

BAT535 - Behavioral Observation Methods Behavioral targeting, observational recording techniques, and issues of validity and reliability of measurement relevant to rehabilitation will be examined. Prerequisite: previous or concurrent enrollment in either BAT 452 or BAT 503 or consent of instructor. Credit Hours: 3

BAT584 - Seminar in Behavior Analysis and Therapy Special topics and new developments in modifying human behavior. Special approval needed from the instructor. Credit Hours: 1-3

BAT591 - Independent Projects in Behavior Analysis and Therapy Systematic readings and development of individual projects in pertinent behavior analysis areas. No more than six hours may be counted toward the Master's degree. Special approval needed from the instructor. Credit Hours: 1-18

BAT593 - Research in Behavior Analysis and Therapy Systematic investigation of factors and procedures relevant to behavior analysis. No more than six hours may be counted toward the Master's degree. Special approval needed from the instructor. Credit Hours: 1-18

BAT594 - Practicum in Behavior Analysis and Therapy Supervised experiences in behavior analysis and therapy. Application of behavioral analysis/methods in human treatment and in management. Restricted to admission to the specific degree program. Prerequisites: BAT 535, BAT 503, BAT 509A with grades of B or better. Credit Hours: 3

BAT595 - Internship in Behavior Analysis and Therapy Extended practice in Behavior Analysis settings cooperatively guided and supervised by agency staff and university faculty. Graded S/U only. Prerequisite: BAT 594 with a grade of B or better. Special approval needed from the department. Credit Hours: 1-9

BAT599 - Thesis Prerequisites: BAT 535, BAT 503, BAT 509A, and BAT 594 with grades of B or better. Special approval needed from the instructor. Credit Hours: 1-6

BAT601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Behavior Analysis and Therapy Faculty

Baires, Natalia, Clinical Assistant Professor, Online Program Director, BAT, Ph.D., Southern Illinois University Carbondale, 2020; 2020. Relational frame theory, acceptance and commitment training, cultural responsiveness for linguistically diverse individuals.

Boydston, Paige, Clinical Assistant Professor, BAT, Ph.D., Southern Illinois University Carbondale, 2020; 2021. Early intensive behavioral intervention, parent training, discrete trial teaching and rural and remote services for families impacted by autism and telehealth.

Hurtado-Parrado, Camilo, Assistant Professor, BAT, Ph.D., University of Manitoba, 2014; 2021. Human and nonhuman learning and behavioral processes.

McLean, Deija, Clinical Assistant Professor, BAT, Ph.D., University of Missouri, 2020; 2020. Ethics in BAT, Treatment of challenging behaviors, diagnostic assessment of Autism Spectrum Disorder, caregiver training of behavior reduction programs.

Redner, Ryan N., Associate Professor & Program Director, BAT, Ph.D., Western Michigan University, 2012; 2015. Tobacco regulatory science, cell phone use in the classroom, healthy eating and exercise, behavioral economics.

Sadler, Kate, Clinical Assistant Professor, BAT, Ph.D., University of Missouri, 2018; 2021. Practical and ethical application of behavior analysis practices.

Shawler, Lesley, Assistant Professor, BAT, Ph.D., Institute of Applied Behavior Endicott College, 2019; 2021. Assessment and treatment of challenging behavior and teaching verbal behavior to individuals with Autism and other neurodevelopmental disabilities.

Williams Awodeh, Natalie F., Clinical Assistant Professor, BAT, Ph.D., Ohio University, 2013; 2021. Cultural and linguistic inclusion in applied behavior analysis, employment disparities for African Americans with cognitive disabilities, and peer support for women of color with mental health concerns.

Emeriti Faculty

Austin, Gary F., Professor, Emeritus, Ph.D., Northwestern University, 1973; 1984.

Beck, Richard J., Associate Professor, Emeritus, Ph.D., University of Wisconsin, 1987; 1990.

Benshoff, John J., Professor, Emeritus, Ph.D., University of Northern Colorado, 1987; 1988.

Blache, Stephen E., Professor, Emeritus, Ph.D., The Ohio University - Athens, 1970; 1971.

Bordieri, James E., Professor, Emeritus, Ph.D., Illinois Institute of Technology, 1980; 1986.

Bryson, Seymour L., Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1972; 1969.

Cuvo, Anthony J., Professor, Emeritus, Ph.D., University of Connecticut, 1973; 1973.

Davis, Paula K., Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1989; 1995.

Falvo, Donna, Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1978; 1974.

Greene, Brandon, Professor, Emeritus, Ph.D., Florida State University, 1979; 1979.

Lehr, Robert P., Jr., Professor, Emeritus, Ph.D., Baylor University, 1971; 1973.

Poppen, Roger L., Professor, Emeritus, Ph.D., Stanford University, 1968; 1970.

Rubin, Stanford E., Professor, Emeritus, Ed.D., University of Illinois, 1968; 1980.

Schultz, Martin C., Professor, Emeritus, Ph.D., University of Iowa, 1955; 1986.

Biological Sciences

The biological sciences program provides broad interdisciplinary graduate training in biology leading to the Master of Science degree. This interdisciplinary program utilizes the faculty, facilities, and courses of Microbiology, Physiology, Plant Biology, and Zoology. The program is designed for those students who desire a broad-based curriculum rather than an in-depth program of study in only one of the biological sciences.

Master of Science (M.S.) in Biological Sciences

Requirements for Admission

All applicants must submit an application to the biological sciences program. Applicants must meet the minimal requirements of the Graduate School before being considered for admission to Biological Sciences. A completed application includes the program application form, three letters of recommendation, and transcripts of all previous college credit.

This program requires a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in Biological Sciences. Applicants must pay this fee by credit card.

In addition to Graduate School admission requirements, applicants must hold a bachelor's degree in a life science discipline. Specific options and concentrations may have additional prerequisites, as noted below.

Application forms are available online at gradschool.siu.edu/applygrad.

Thesis Option

Admission Requirements

Thirty-seven credit hours of undergraduate courses distributed among any four of the biological science areas (plant biology, microbiology, physiology and zoology): organic chemistry with zoology; laboratory; physics; statistics. Applicants deficient in these background areas may be admitted, but any deficiency must be successfully completed before the third semester of the registration program.

Advisement

No later than the end of the first semester of registration in the program, the student must arrange with a faculty member in one of the four biological science programs to serve as the research adviser. Following selection and approval of the adviser, an advisory committee is to be recommended to the director of the Biological Sciences Program for approval by the Dean of the Graduate School. This committee shall consist of at least three members, each from a different biological science program, with the research advisor serving as chair. A program of course work must be approved by the advisory committee and filed with the director no later than the eighth week of the second semester of registration in the program. Any deviation from the course work program during the student's tenure must be approved by the advisory committee and filed with the director. A research proposal for the thesis must be approved by the advisory committee and filed with the director no later than the end of the second semester of registration.

Graduation Requirements

A total of 30 credit hours of 500-level courses are required, with the following provisions:

1. A minimum of 21 credit hours of formal graded courses in the biological science programs is required with no less than six credit hours coming from each of four of the biological science program.
2. At least one semester of seminar in two of the four biological science programs must be attended for credit.
3. An overall 3.0 grade point average *(A = 4.0)* must be maintained with no course in which the grade is less than a *C* counting toward the degree requirements.
4. A thesis embodying original research is required and may be counted for not less than three nor more than six hours of credit.
5. A final oral examination is required consisting of a public presentation of the thesis research and a closed session of inquiry by the student's research and advisory committee.

Non-Thesis Option

Admission Requirements

Thirty-seven credit hours of undergraduate courses distributed among any four of the biological science areas (plant biology, microbiology, physiology, and zoology); organic chemistry with laboratory; physics; statistics. Applicants deficient in these background areas may be admitted, but any deficiency must be successfully completed before the third semester of registration in the program.

Advisement

No later than the end of the first semester of registration in the program, the student must arrange with a faculty member in one of the four biological science programs to serve as the research adviser. Following selection and approval of the adviser, an advisory committee is to be recommended to the director of the Biological Sciences Program for approval by the Dean of the Graduate School. This committee shall consist of at least three members, each from a different biological science program, with the research advisor serving as chair. A program of course work must be approved by the advisory committee and filed with the director no later than the eighth week of the second semester of registration in the program. Any deviation from the course work program during the student's tenure must be approved by the advisory committee and filed with the director. A proposal for the research paper must be approved by the advisory committee and filed with the director no later than the end of the second semester of registration.

Graduation Requirements

A total of 40 credit hours of 500-level courses are required, with the following provisions:

1. A minimum of 26 credit hours of formal graded courses in the biological sciences required with no less than eight credit hours including one 500-level laboratory course in each of the biological sciences programs.
2. At least one semester of seminar in each of three of the biological science programs must be attended for credit.
3. An overall 3.0 grade point average *(A = 4.0)* must be maintained with no course in which the grade is less than a *C* counting toward the degree requirements.
4. A research paper is required demonstrating the ability to collect and analyze data and to report interpreted results in a scientific manner. A library research problem is acceptable, but must include an original contribution of analysis and interpretation. No less than three nor more than six semester hours of "Research" may be counted for credit in meeting requirements. (Only those courses listed as "Individual Research", Introduction to Research", etc. may be taken for credit. "Thesis Research" may not be used for this requirement.)
5. A final oral examination is required, consisting of two parts:
    - a public presentation of the research paper
    - a closed session of inquiry by the student's Research and Advisory Committee.

Biological Sciences Courses

BIOL409 - Developmental Biology Basic principles and processes of embryonic development including contemporary research on molecular, cellular and genetic mechanisms of differentiation and morphogenesis; selected plants and invertebrate and vertebrate animals will be considered. Prerequisite: BIOL 305 with a grade of C- or better. Credit Hours: 3

BIOL450 - Biomedical Genetics The basic principles of human genetics, from detailed treatment of DNA structure and function to an overview of the human genome and cancer genetics will be covered with emphasis on implications to medical practice. Other major topics include genetic variation, patterns of inheritance, the human genome, genetic screening and risk assessment, and treatment of genetic disorders. Prerequisite: BIOL 305 with a grade of C- or better. Credit Hours: 3

BIOL460 - Study Abroad: Biology, Culture, & History of the Yucatan, MX Course Period: Intersession Study Abroad Course, 9 days (Approx. last two weeks of May). Objective: The objectives of this faculty-led global seminar are to explore the biology, culture, and history of the Yucatan Peninsula of Mexico. Biological exploration will include snorkeling tours of near shore reef diversity, and on land tours of reptile and avian diversity. Exploration of the culture and history of the Yucatan will include tours of Mayan ruins, regional markets, and culinary tours. Credit Hours: 3

BIOL500 - Contemporary Biology for Teachers An introduction to fundamental biological concepts. Emphasis is placed on exploring plant and animal model systems using contemporary methodologies. Examples of biological processes will be covered from genomics to ecosystems. Prepares teachers to introduce biological principles and innovative approaches to understanding biological systems in the classroom. Prerequisite: SCI 210A & B or equivalent. Credit Hours: 3

BIOL501 - Science Communication Advanced course in Science Communication. Learn skills in written, visual, and oral communication with a focus on translating primary scientific research for broad audiences including the public. Learn about writing, developing, and presenting engaging materials for diverse audiences without sacrificing scientific accuracy. Both formal and informal formats will be examined including primary and popular science literature, mass media, blogs, and policy. Gain skills for effective visual and graphical presentations. Learn strategies for talking science with the public, incorporating strategies from improvisational and public speaking methods, as well as speaking to controversies. Credit Hours: 3

BIOL507 - Advanced Principles of Ecology An introduction to the study of interactions between organisms and their environment at the organismal, population, community, and ecosystem levels, presented at the graduate level. Includes discussion of global ecology, biodiversity, and conservation. Prerequisites: BIOL 212 and BIOL 213, or PLB 200, or equivalents. Credit Hours: 3

BIOL509 - Advanced Developmental Biology An advanced investigation of the principles and processes of embryonic development including contemporary research on molecular, cellular and genetic mechanisms of differentiation and morphogenesis; selected plants and invertebrate and vertebrate animals will be considered. Prerequisite: BIOL 305 with a grade of C- or better. Credit Hours: 3. Credit Hours: 3

BIOL550 - Advanced Biomedical Genetics An advanced introduction to the principles of human genetics, from detailed treatment of DNA structure and function to an overview of the human genome and cancer genetics will be covered with emphasis on implications to medical practice. Other major topics include genetic variation, patterns of inheritance, the human genome, genetic screening and risk assessment, and treatment of genetic disorders. Prerequisite: BIOL 305 with a grade of C- or better. Credit Hours: 3. Credit Hours: 3

BIOL601 - Continuing Enrollment For students who have not finished their degree programs and who are in the process of working on their dissertations, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any course is not permissible. Graded S/U. Prerequisite: minimum hours as stated above. Credit Hours: 1

MEDP400A - MEDPREP Seminar-Orientation Seminar on social, professional, and scientific issues of interest to students planning a career in medicine or dentistry. Required of first-year MEDPREP participants. Restricted to MEDPREP students. Credit Hours: 1. Credit Hours: 1

MEDP400B - MEDPREP Seminar-Medical/Dental Seminar Seminar on social, professional, and scientific issues of interest to students planning a career in medicine or dentistry. Required of first-year MEDPREP participants. Restricted to MEDPREP students. Credit Hours: 1. Credit Hours: 1

MEDP400C - MEDPREP Seminar-Medical/Dental Seminar II Seminar on social, professional, and scientific issues of interest to students planning a career in medicine or dentistry. Required of first-year MEDPREP participants. Restricted to MEDPREP students. Must be taken in A,B,C sequence. Mandatory Pass/Fail. Credit Hours: 1

MEDP401A - Academic Enrichment Development of skills critical for academic and clinical success in health professions training. Restricted to MEDPREP students. Credit Hours: 1

MEDP401B - MEDPREP Skills-Prematriculation Focus on skills critical for academic success for students preparing to enter medical, dental or other health profession schools. Restricted to MEDPREP students. Credit Hours: 1-3

MEDP401C - MEDPREP Skills-Quantitative Skills Focus on skills critical for academic success in preprofessional and professional training. Restricted to MEDPREP students. Credit Hours: 1-3

MEDP401D - MEDPREP Skills-Problem Solving Focus on skills critical for academic success in preprofessional and professional training. Restricted to MEDPREP students. Credit Hours: 1-3

MEDP401F - MEDPREP Skills-Critical Reading Skills Focus on skills critical for academic success in preprofessional and professional training. Restricted to MEDPREP students. Credit Hours: 1-3

MEDP401G - MEDPREP Skills-Critical Reading Skills I Focus on critical reading skills critical for academic success in health professional career training. Restricted to MEDPREP students. Credit Hours: 1-3. Credit Hours: 1-3

MEDP401H - MEDPREP Skills-Critical Reading Skills II Focus on critical reading and textual analysis skills critical for academic success in health professional career training. Restricted to MEDPREP students. Credit hours: 1-3. Credit Hours: 1-3

MEDP401I - Career Development Skills Focus on skills critical for academic success in pre-professional and professional training. Restricted to MEDPREP students. Credit Hours: 1. Credit Hours: 1

MEDP402A - Behavioral and Social Sciences Applications Application of topics in psychology, sociology and other social sciences to current societal issues. Research methodologies and critical analysis are emphasized. Includes preparation for MCAT/DAT. Restricted to MEDPREP students. Credit Hours: 1-3

MEDP402B - MEDPREP Special Problems-Research Seminar Seminars, workshops, lectures, and field experiences related to preparing the student for medical/dental school and careers in medicine or dentistry. Restricted to MEDPREP students. Credit Hours: 1-2

MEDP402C - MEDPREP Special Problems-Clinical Experience, mandatory P/F Seminars, workshops, lectures, and field experiences related to preparing the student for school and careers in medicine/dentistry. Restricted to MEDPREP students. Credit Hours: 1-2

MEDP402D - MEDPREP Special Problems-Problem-Based Learning (P/F only) Seminars, workshops, lectures, and field experiences related to preparing the student for medical/dental school and careers in medicine or dentistry. Restricted to MEDPREP students. Credit Hours: 3

MEDP402E - MEDPREP Special Problems-Independent Readings Seminars, workshops, lectures, and field experiences related to preparing the student for medical/dental school and careers in medicine or dentistry. Restricted to MEDPREP students. Credit Hours: 1-2

MEDP402F - MEDPREP Special Problems-Independent Research Seminars, workshops, lectures, and field experiences related to preparing the student for medical/dental school and careers in medicine or dentistry. Restricted to MEDPREP students. Credit Hours: 1-2

MEDP403A - MEDPREP Biology Applications-Medical Genetics Content may be supplemental (to concurrent biological science courses), additional (permitting acceleration), or preparational for the MCAT/DAT. Restricted to MEDPREP students. Credit Hours: 1-3

MEDP403B - MEDPREP Medical Pharmacology Content may be supplemental (to concurrent biological science courses), additional (permitting acceleration), or preparational for the MCAT/DAT. Restricted to MEDPREP students. Credit Hours: 1-3

MEDP403C - MEDPREP Biology Applications-Cardiovascular Physiology Content may be supplemental (to concurrent biological science courses), additional (permitting acceleration) or preparational for the MCAT/DAT. Restricted to MEDPREP students. Credit Hours: 1-3

MEDP403D - MEDPREP Biology Applications-Embryology Content may be supplemental (to concurrent biological science courses), additional (permitting acceleration), or preparational for the MCAT/DAT. Restricted to MEDPREP students. Credit Hours: 1-3

MEDP403E - MEDPREP Biology Applications-Medical Immunology Content may be supplemental (to concurrent biological science courses), additional (permitting acceleration), or preparational for the MCAT/DAT. Restricted to MEDPREP students. Credit Hours: 1-3

MEDP403F - MEDPREP Biology Applications-Hormonal Regulation Content may be supplemental (to concurrent biological science courses), additional (permitting acceleration), or preparational for the MCAT/DAT. Restricted to MEDPREP students. Credit Hours: 1-3

MEDP403G - MEDPREP Biology Applications-Biology Applications Content may be supplemental (to concurrent biological science courses), additional (permitting acceleration), or preparational for the MCAT/DAT. Restricted to MEDPREP students. Credit Hours: 1-6

MEDP403H - MEDPREP Biology Applications-Neural Science Content may be supplemental (to concurrent biological science courses), additional (permitting acceleration), or preparational for the MCAT/DAT. Restricted to MEDPREP students. Credit Hours: 1-6

MEDP403I - MEDPREP Biology Applications-Biology Problem Solving Content may be supplemental (to concurrent biological science courses), additional (permitting acceleration), or preparational for the MCAT/DAT. Restricted to MEDPREP students. Credit Hours: 1-3

MEDP404A - MEDPREP Chemistry Applications-Inorganic Chemistry Applications Content may be supplemental (to concurrent preprofessional chemistry courses), additional (permitting acceleration), or preparational for the MCAT/DAT. Restricted to MEDPREP students. Credit Hours: 1-3

MEDP404B - MEDPREP Chemistry Applications-Inorganic Chemistry (For Dental Students) Content may be supplemental (to concurrent preprofessional chemistry courses), additional (permitting acceleration), or preparational for the MCAT/DAT. Restricted to MEDPREP students. Credit Hours: 1-3

MEDP404C - MEDPREP Chemistry Applications-Organic Chemistry Applications Content may be supplemental (to concurrent preprofessional chemistry courses), additional (permitting acceleration), or preparational for the MCAT/DAT. Restricted to MEDPREP students. Credit Hours: 1-3

MEDP404D - MEDPREP Chemistry Applications-Organic Chemistry for Dental Students Content may be supplemental (to concurrent preprofessional chemistry courses), additional (permitting acceleration), or preparational for the MCAT/DAT. Restricted to MEDPREP students. Credit Hours: 1-3

MEDP404E - Medical Biochemistry Topics in biological chemistry and biochemistry, with an emphasis on impact of cellular-level biochemistry and metabolic processes on physiological systems, human health and human disease. Restricted to MEDPREP students. Credit Hours: 1-3

MEDP404F - MEDPREP Chemistry Applications-Chemistry Problem Solving Content may be supplemental (to concurrent preprofessional chemistry courses), additional (permitting acceleration), or preparational for the MCAT/DAT. Restricted to MEDPREP students. Credit Hours: 1-3

MEDP405A - MEDPREP Physics Applications Content may be supplemental (to concurrent preprofessional physics courses), additional (permitting acceleration), or preparational for the MCAT. Restricted to MEDPREP students. Credit Hours: 1-6

MEDP405B - MEDPREP Physics Applications-Physics Problem Solving Content may be supplemental (to concurrent preprofessional physics courses), additional (permitting acceleration), or preparational for the MCAT. Restricted to MEDPREP students. Credit Hours: 1-3

MEDP501C - Quantitative and Analytical Reasoning This course focuses on quantitative approaches and analytical reasoning needed for graduate and professional school problem solving, and for research

data analysis encountered in graduate and professional education. Topics include mathematical problem solving integrating algebraic, geometric, logarithmic and trigonometric methods; applied calculations for medical practice and research. Emphasis is placed on ensuring students have appropriate quantitative reasoning competencies for professional school. Restricted to students enrolled in MEDPREP. Credit Hours: 1-3

MEDP501D - Problem Based Learning in Medicine Discussion-based course focusing on understanding of human physiology and biochemistry in the context of medical disease. Using a problem-based learning format, student will work in small groups to investigate simulated patient cases, identify and address learning issues associated with both doctoring and biological science, research physiological and biochemical mechanisms of disease, and present findings in oral and written forms. Credit Hours: 3

MEDP501E - Colloquium Seminar course focused on development of career and networking skills critical for success in the health professions. Required for all MEDPREP students enrolled in concurrent master degree programs. Restricted to MEDPREP students. Credit Hours: 1

MEDP503B - Medical Pharmacology Content may be supplemental (to concurrent biological science courses), additional (permitting acceleration), or preparational for the MCAT/DAT. Restricted to MEDPREP students enrolled in Master's level program. Credit Hours: 1-3

MEDP503E - MEDPREP Medical Immunology Content may be supplemental (to concurrent biological science courses), additional (permitting acceleration), or preparational for the MCAT/DAT. Restricted to MEDPREP students enrolled in Master's level program. Credit Hours: 1-3

MEDP503G - Biological Systems and Processes Course covers major biological systems and processes, with a focus on integration of disciplinary approaches and knowledge in preparation for professional study of medicine. Physiological systems covered include nervous, muscular, endocrine, cardiovascular, respiratory, digestion, renal, immune response, reproduction and embryology; as well as cellular metabolism, molecular biology, biochemistry of the cell, genetics, evolution, microbiology and virology. Research methodologies and data analysis are integral to the presentation of topics, which vary by semester. Restricted to students enrolled in MEDPREP. Credit Hours: 1-3

MEDP504A - Chemical Systems and Processes Course covers major chemical systems and processes, with a focus on integration of disciplinary approaches and knowledge in preparation for professional study of medicine. Chemistry topics covered include atomic structure and periodic theory of elements, stoichiometry, chemical bonding, solutions and mixtures, electrochemistry, thermochemistry. Research methodologies and data analysis are integral to the presentation of topics, which vary by semester. Restricted to students enrolled in MEDPREP. Credit Hours: 1-3

MEDP504C - Organic Chemistry Systems and Processes Course covers major organic chemistry systems and processes, with a focus on integration of disciplinary approaches and knowledge in preparation for professional study of medicine. Topics covered include structure, bonding and resonance, organic molecules, functional groups, organic reactions, and spectroscopy. Research methodologies and data analysis are integral to the presentation of topics, which vary by semester. Restricted to students enrolled in MEDPREP. Credit Hours: 1-3

MEDP504E - Medical Biochemistry Topics in biological chemistry and biochemistry, with an emphasis on impact of cellular-level biochemistry and metabolic processes on physiological systems, human health and human disease. Restricted to MEDPREP students. Credit Hours: 1-3

Biological Sciences Faculty

Anderson, Frank E., Professor, Ph.D., University of California, Santa Cruz, 1998; 1999. Invertebrates, molecular systematics, molecular evolution.

Anterola, Aldwin M., Associate Professor, Ph.D., Washington State University, 2001; 2005. Metabolic pathways, medicinal compounds, nutraceuticals, biosynthesis of natural products.

Bastille-Rousseau, Guillaume, Assistant Professor, Ph.D., Trent University, 2014; 2020. Wildlife, spatial, population, and behavioral ecology.

Bender, Kelly S., Associate Professor, Ph.D., Southern Illinois University Carbondale, 2003. Environmental microbiology; microbes and coal mining waste; biomining of rare Earth elements; small RNA analysis.

Brown, Jason L., Assistant Professor, Ph.D., East Carolina University, 2009; 2016. Integrated ecological, evolutionary, genetic, and geospatial analysis.

Da Cunha Leme Filho, Jose F., Assistant Professor, Ph.D., Virginia Polytechnic Institute and State University, 2020. Controlled environment agriculture, vertical farm, cannabis biology, plant physiology, secondary metabolites, plant biostimulants.

Eichholz, Michael W., Professor, Ph.D., University of Alaska, 1998; 2002. Waterfowl, wetland ecology.

Fisher, Derek J., Associate Professor, Ph.D., University of Pittsburgh, 2006. Bacterial Pathogenesis, bacterial physiology and metabolism, molecular biology, protein phosphorylation and degradation.

Gage, Karla L., Associate Professor, Ph.D., Southern Illinois University Carbondale, 2013; 2015. Weed science, weed ecology, agroecology, integrated pest management, herbicide resistance, invasive species.

Garvey, James E., Professor, Ph.D., Ohio State University, 1997; 2000. Fisheries biology.

Garcia-Heras, Marie-Sophie, Assistant Professor, Ph.D., University of Cape Town, 2017; 2025. Conservation biology, ornithology.

Grundler, Michael C., Assistant Professor, Ph.D., University of Michigan, 2020; 2025. Evolutionary biology, herpetology.

Geisler, J.B. Matthew, Associate Professor, Ph.D., The Ohio State University, 1999; 2006. Gene expression and protein interaction patterns, mathematical gene modeling, arabidopsis, yeast and drosophila interactomes.

Hamilton-Brehm, Scott D., Assistant Professor, Ph.D., University of Georgia, 2008. Anaerobic and aerobic cultivation of microorganisms, environmental sampling.

Heist, Edward J., Professor, Ph.D., College of William and Mary, 1994; 1998. Population genetics, conservation genetics, fishery management.

Holmes, Iris. Assistant Professor, Ph.D., University of Michigan, 2020; 2025. Host-pathogen interactions, herpetology.

Ibrahim, Kamal, Associate Professor, Ph.D., Cambridge University, 1989; 2001. Population genetics.

Jayakody, Lahiru N., Assistant Professor, Ph.D., Kagoshima University (Japan), 2014; 2019. Biotechnology, molecular biology, metabolic engineering, synthetic microbiology, systems biology.

Jimenez-Ruiz, F. Agustin, Associate Professor, Ph.D., University of Nebraska-Lincoln, 2004; 2009. Parasitology.

Konjufca, Vjollca, Associate Professor, Ph.D., University of Arkansas Fayetteville, 2002. Immunology and host-pathogen interactions.

Lydy, Michael J., Professor, Ph.D., Ohio State University, 2001. Aquatic toxicology.

Narr, Charlotte, Assistant Professor, Ph.D., Trent University, 2016: 2020. Freshwater ecology, ecological stoichiometry, and host-parasite interactions.

Neubig, Kurt M., Associate Professor, Ph.D., University of Florida, 2012; 2015. Plant systematics, phylogenetics, floristics, DNA barcoding and pollination biology.

Petri, Laís., Assistant Professor, Ph.D., University of Michigan, 2023; 2025. Plant community ecology, invasion biology.

Rader, Bethany, Associate Professor, Ph.D., University of Oregon, 2006. Beneficial host-microbe interactions, innate immunology, microbial ecology and systems biology.

Sipes, Sedonia D., Associate Professor, Ph.D., Utah State University, 2001; 2001. Plant-insect interactions, evolutionary ecology, chemical ecology, and systematics.

Weber, Jennifer., Assistant Professor, Ph.D., University of CA, Irvine, 2012; 2020. Evolutionary ecology, including breeding system evolution, pollination biology, population genetics and climate change biology.

Whitledge, Gregory, Professor, Ph.D., University of Missouri, 2001; 1995. Fish ecology and management.

Wood, Andrew J., Professor, Ph.D., Purdue University, 1994; 1996. Biotechnology, biochemistry, desiccation, drought, genetics, horticulture, plant physiology, stress.

Emeriti Faculty

Anthoney, Terence R., Associate Professor, Emeritus, M.D., Ph.D., University of Chicago, 1968, 1975.

Bozzola, John J., Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1975; 1983.

Brandon, Ronald A., Professor, Emeritus, Ph.D., University of Illinois, 1962.

Brooks, Marjorie, Associate Professor, Emerita, Ph.D., University of Wyoming, 2003; 2009.

Burr, Brooks M., Professor, Emeritus, Ph.D., University of Illinois, 1977.

Clark, David P., Professor, Emeritus, Ph.D., University of Bristol England, 1976.

Crandall-Stotler, Barbara, Professor, Emerita, Ph.D., University of Cincinnati, 1968; 1970.

Englert, DuWayne C., Professor, Emeritus, Ph.D., Purdue University, 1964.

Feldhamer, George A., Professor, Emeritus, Oregon State University, 1977.

Gibson, David J., Distinguished Professor, Emeritus, Ph.D., University of Wales, 1985; 1992.

Halbrook, Richard S., Associate Professor, Emeritus, Ph.D., Virginia Polytechnic Institute and State University, 1990.

Heidinger, Roy C., Professor, Emeritus, Ph.D., Southern Illinois University, 1970.

King, David, Associate Professor, Emeritus, Ph.D., University of California at San Diego, 1975.

Kohler, Christopher C., Professor, Emeritus, Ph.D., Virginia Polytechnic Institute and State University, 1980.

Krajewski, Carey, Professor, Ph.D., University of Wisconsin, 1988.

Lovvorn, James R., Professor, Ph.D., University of Wisconsin-Madison, 1987.

Madigan, Michael T., Professor and Distinguished Scholar, Emeritus, Ph.D., University of Wisconsin, 1976.

Matten, Lawrence C., Professor, Emeritus, Ph.D., Cornell University, 1965; 1965.

McPherson, John E., Jr., Professor, Emeritus, Ph.D., Michigan State University, 1968.

Mohlenbrock, Robert H., Distinguished Professor, Emeritus, Ph.D., Washington University, 1957; 1957.

Muhlach, William L., Associate Professor, Emeritus, Ph.D., University of Illinois at Chicago, 1986.

Nickrent, Daniel L., Distinguished Research Professor, Emeritus, Ph.D., Miami University (Ohio), 1984; 1990.

Nsofor, Margaret N., Associate Professor of Practice, Emerita, Ph.D., Mississippi State University, 1998.

Reeve, John, Associate Professor, Emeritus, Ph.D., University of California Santa Barbara, 1985; 2000.

Renzaglia, Karen, Distinguished Research Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1981; 2005.

Richardson, John A., Associate Professor, Emeritus, M.F.A., Ohio University, 1969; 1969.

Robertson, Philip A., Professor, Emeritus, Ph.D., Colorado State University, 1968; 1970.

Shepherd, Benjamin A., Professor, Emeritus, Ph.D., Kansas State University, 1970.

Thomas, Richard, H., Associate Professor, Emeritus, Ph.D., University of Arizona Tucson, 1985.

Tindall, Donald R., Professor, Emeritus, Ph.D., University of Louisville, 1966; 1966.

Vitt, Dale H., Distinguished Research Professor, Emeritus, Ph.D., University of Michigan, 1970; 2000.

Yopp, John H., Professor, Emeritus, Ph.D., University of Louisville, 1969; 1970.

Biomedical Engineering

The School of Electrical, Computer, and Biomedical Engineering (ECBE) offers a program of study and research leading to the Master of Science (M.S.) degree (thesis/non-thesis) in Biomedical Engineering (BME).

The School provides a rich environment for educational, research, and professional advancement in the following areas:

- **Medical Engineering**: Medical devices, medical instrumentation, biomechanics, medical and optical imaging, medical electronics and sensors, surgical technologies, healthcare software, and biophotonics.
- **Bioengineering**: bio-MEMS, bioinformatics, electrophysiology, molecular and cellular mechanics, neural engineering, and tissue engineering.

The BME program provides a balance between formal classroom instruction and research and is tailored to the individual student's academic and professional goals. Graduates of the program enjoy excellent employment opportunities and are highly recruited worldwide in industry, government, and academia.

Admission, degree requirements, graduation, and time limits are subject to the general guidelines of the Graduate School.

Academic Objectives

The program, consistent with the mission and priorities of the University, is designed to achieve the following academic objectives:

- To provide high quality education in the field of biomedical engineering and to prepare the graduates for successful and rewarding employment as engineers or for continuing their education through the doctoral level.
- To provide the students with the training necessary to successfully apply the fundamental concepts and methods of biomedical engineering to selected areas of employment or research and development.
- To enhance the research environment and productivity of the School for the benefit of the students.

Master of Science (M.S.) in Biomedical Engineering

Objectives

The Master of Science (M.S.) in Biomedical Engineering program has two tracks: i) The non-thesis track is coursework-oriented; ii) The thesis track is research-oriented. The applicants must indicate whether they are pursuing the thesis or the non-thesis track degree option.

Admission

Individuals holding a Bachelor's degree or equivalent in engineering, science, or related field may apply. Qualified applicants with Bachelor's degree in other areas may be able to enroll in the program with additional preparation (approved by the School on a case-by-case basis). The applicants must indicate whether they are pursuing the thesis or the non-thesis track degree option.

Admission to the M.S. in Biomedical Engineering program is based on the following factors: grade point average of 3.0 or higher on a scale of 4.0 on the entire last undergraduate GPA earned at the time of application, class ranking, and faculty recommendation letters. Exceptions can be made on a case-by-case basis.

GRE scores are not required for admission. However, they are important to qualify for the High Achievers Tuition Rate. See https://tuition.siuc.edu/highachievers2.html. Also, GRE scores, especially Quantitative, may be considered for fellowships, assistantships, or scholarships. The English proficiency requirement and any applicable exemptions will be determined according to Graduate School guidelines.

Curriculum

The Master of Science (M.S.) in Biomedical Engineering program requires a total of 30 hours of graduate-level credit. For the non-thesis track, at least 6 credit hours must be in BME 500-level courses that do not have significant overlap/similarity with BME 300/400-level courses, as stated in their catalog description. At least 18 credit hours must be selected from the BME courses. BME 592 and ECE 580 (seminar) will not count towards the degree. The remaining courses can be selected from the BME or ECE 500-level courses. With the approval of the School, a maximum of three credit hours from academic units outside the School may be applied toward the degree.

For the thesis track, six credit hours of thesis (BME 599) are required. At least 18 credit hours must be selected from the BME courses. The remaining courses can be selected from the BME or ECE 500-level courses. A maximum of three credit hours of BME 592 could be counted towards the degree requirements. ECE 580 (seminar) will not count towards the degree. With the approval of the School, a maximum of three credit hours from academic units outside the School may be applied toward the degree. Students in this track will develop a program of study in consultation with their thesis advisor. The M.S. thesis shall be supervised by a committee of three members of the graduate faculty (including the advisor) and approved by the School. The student must submit a properly formatted written thesis to the thesis committee. A student will be recommended for the degree according to the guidelines of the Graduate School.

A student pursuing the M.S. in Biomedical Engineering degree could switch (non-thesis to thesis or vice versa) upon recommendation of ECBE faculty and with the approval of the School.

Retention

Any student whose cumulative grade point average falls below 3.0 on courses that count towards the degree will be placed on academic probation. Any graduate student on academic probation whose grade point average remains below 3.0 on courses that count towards the degree for two consecutive semesters in which they are enrolled, excluding summer sessions, will be permanently suspended from the program, unless the School grants an exception.

Accelerated Master's Program in Biomedical Engineering

Objectives

The Accelerated Master's Program is designed for high-achieving students who are currently enrolled in an undergraduate program in the School of Electrical, Computer, and Biomedical Engineering at SIUC. The program will allow students to earn both Bachelor's degree and a Master's degree within 5 years by completing 147 credit hours (instead of 156 credit hours if pursuing Bachelor's and Master's studies separately).

Admission

Apply as early as the beginning of the first semester of junior year for acceptance into the program. Work with the undergraduate Academic Advisor (and a potential graduate faculty advisor, if needed) to develop a program of study identifying 9 credit hours that may be counted towards both the Bachelor's degree and the Master's degree.

Students are considered undergraduates until all requirements for the Bachelor's degree have been fulfilled. For the Master's degree, they can select either the M.S. in Biomedical Engineering (thesis/non-thesis) or the M.E. in Biomedical Engineering degree.

Curriculum

Junior/Senior Year - Complete up to 9 graduate-level ECE credit hours during the junior/senior year taken from the School of Electrical, Computer, and Biomedical Engineering (excluding ECE 492, ECE 592, and BME 592). At most 9 graduate-level ECE credit hours will be counted towards both the Bachelor's and the

Master’s degree requirements. Graduate Year - Complete the remaining Master’s coursework within one year of full-time graduate study.

Retention

Any graduate student whose cumulative grade point average falls below 3.0 on courses that count towards the Master’s degree in Biomedical Engineering will be placed on program academic probation.

Biomedical Engineering Courses

BME439 - Diagnostic Ultrasound Diagnostic ultrasound is an ultrasound-based medical imaging technique used to visualize muscles, tissue, and many internal organs, to capture their size, structure and any pathological lesions. This course is an introduction to the principles and applications of biomedical ultrasound. This course will focus on fundamentals of acoustic theory, principles of ultrasonic detection and imaging, design and use of currently available tools for performance evaluation of diagnostic devices, and biological effects of ultrasound. Prerequisite: MATH 305 and ECE 355 with a grade of C or consent of instructor. Restricted to enrollment in BME programs. Project-based fee: $30 to help defray cost of software licenses and equipment. Credit Hours: 3

BME481 - Design and Implementation of Vision System (Same as ME 481) This course provides an introduction to a vision system and instrumentation with engineering applications including optical microscopy. A vision system is an essential tool in most of the application, and optical microscopy is a powerful scientific tool to study microscale worlds. Topics covered in basic geometrical optics, Optoelectronic devices, basic electronics for illumination system, optical microscopy, actuators in the microscope, fundamentals of fluorescence microscopy, and advanced imaging techniques. Prerequisites: ENGR 296 or ME 222 or consent of instructor. Credit Hours: 3

BME485 - Cellular and Molecular Biomechanics (Same as ME 485) Mechanics of living cells at the micron/nanoscale level. Molecular forces, bond dynamics, force-induced protein conformational changes. Structural basis of living cells, contractile forces, mechanics of biomembranes, nucleus, cytoskeletal filaments- actin, microtubule, intermediate filaments. Active and passive rheology, microrheological properties of cytoskeleton. Active cellular processes such as cell adhesion, cell spreading, control of cell shape, and cell migration. Discussion on experimental techniques including single-molecule approaches to understanding key cellular processes. Discussion of theoretical models that predict cellular processes and limitations. Introduction to mechanobiology. Restricted to 4th Year or graduate standing. Credit Hours: 3

BME501 - Statistics for Biomedical Engineers Theoretical introduction to the basic principles of statistical modeling and estimation focusing on biomedical engineering applications such as genetics and genetic-related disorders. Prerequisite: PHSL 410A or consent of instructor. Credit Hours: 3

BME505 - Surgical Technologies Overview of the ordinary physiology of cells and tissues and the abnormal physiology associated with cancer and/or other major diseases. Role of surgeries in the practice of modern medicine with a special focus on cancer treatment and/or other important procedures. Environment of and people inside the operating room. Therapeutic and diagnostic tools and techniques available in the operating room. Open and minimally invasive surgeries. Introduction to image-guided surgeries. Imaging systems and contrast agents for image-guided surgeries. Introduction to robotic surgeries. Preclinical research, clinical research, and FDA-approved process. Prerequisite: ECE 355 (or equivalent). Credit Hours: 3. Credit Hours: 3

BME506 - Biomedical Optics (Same as ECE 506) Fundamental theories of light, including the wave theory of light and the particle theory of light; Fundamental interactions between light and matter, including reflection, refraction, absorption, scattering, fluorescence, and polarization; Biology of cells and tissues; Tissue optical properties; Tissue-targeted contrast agents; Coherence and interference; Light transport in turbid media; Diagnostic applications of light, including microscopy, spectroscopy, fluorescence imaging, fluorescence-lifetime imaging, optical coherence tomography, diffuse optical tomography, and/or biosensors; Therapeutic applications of light, including photodynamic therapy, photothermal therapy, and/or laser ablation. Prerequisites: ECE 355, MATH 251, and PHYS 205B, or

equivalent, with a grade of C or better, or consent of instructor. Students who are taking or have taken BME 431 or ECE 451 are ineligible to enroll. Credit Hours: 3. Credit Hours: 3

BME507 - Image Sensors (Same as ECE 507) Fundamentals of semiconductor physics, including the use of doping and biasing to control electronic potentials in devices; Fundamentals of integrated circuits, including the design and fabrication of diodes, transistors, and interconnects; Fundamental interactions between light and matter, including reflection, refraction, and absorption; Structure and operating modes of photodiodes; Architectures and operating principles for charge coupled device (CCD) image sensors and complementary metal-oxide-semiconductor (CMOS) image sensors; Performance metrics for image sensors, including the noise floor, the full-well capacity, the quantum efficiency, and fixed pattern noise; Construction of color image sensors; Signal processing for image sensors, including color interpolation and color correction. Prerequisite: ECE 355 and PHYS 205B, or equivalent, with a grade of C or better, or consent of instructor. Students who are taking or have taken BME 453 or ECE 453 are ineligible to enroll. Credit Hours: 3. Credit Hours: 3

BME508 - Advanced Biomedical Measurements This graduate-level course covers fundamental biomedical techniques, tools, equipment and the recording of biological signals. Key topics include wet-lab procedures, cell culture methods, microscopy, electrocardiography, electromyography, pulmonary function testing, blood pressure measurement, bioelectrodes, bioelectric circuit design, bio-amplifiers, filters, and ion channel current recording. Lab fee: $50 to help defray cost of software licenses and equipment. Credit Hours: 3

BME509 - Biomedical Microelectromechanical Systems Same as ECE 559A) The course is designed to introduce students with fundamentals of MEMS and its applications. The emphasis will be on physical principle in sensors and corresponding fabrication techniques, with supplemental discussion of the state-of-art applications in industry and research. Students will learn to analyze and design systems by solving regular homework problems and active participation during lectures and in-class examples. Topics: Introduction of MEMS (Chapter 1), fundamentals of microfabrication and nanofabrication, fundamentals of physics in sensors, a case study of electrostatic sensing, microfluidics and biomedical applications, projects. Prerequisites: MATH 251, PHYS 205A, PHYS 205B each with a grade of C or better, or consent of instructor. Students who have completed BME 419 or ECE 459 will not receive credit for this course. Project-based fee: $50 to help defray cost of equipment and commodities. Credit Hours: 3

BME517 - Neuroengineering This course offers a comprehensive introduction to neuroengineering principles and electrophysiology techniques. Topics include foundational neuroengineering concepts, electrophysiology (Ephy) setup, circuitry, and laboratory applications, as well as neuromodulation and neurostimulation strategies. Advanced modules explore deep brain, spinal cord, and dorsal root ganglion stimulation, including high-frequency spinal cord stimulation. Students will complete term projects, including designing an Ephy circuit and proposing a neurostimulation protocol, integrating course concepts. Students who have completed BME 417 will not receive credit for this course. Prerequisites: None. Project-based fee: $20 to help defray cost of equipment. Credit Hours: 3

BME518 - Medical Instrumentation: Application and Design (Same as ECE 538) This course introduces the BME graduate students to the field of medical instrumentation. Medical instrumentation is the application of advanced engineering technology to problems in biology and medicine. The course focuses on fundamentals of instrumentation systems, sensors, amplifiers, and signal precondition. In addition, the course also includes design and applications of medical instrumentation, biopotential measurement, biomedical signal processing, and other related topics. Students who have completed BME 438 or ECE 438 will not receive credit for this course. Prerequisite: MATH 305 and ECE 355 with a grade of C or better, or consent of instructor. Restricted to enrollment in BME programs. Project-based fee: $45 to help defray cost of software licenses and equipment. Credit Hours: 3

BME519 - Microfabrication of Biomedical Devices The course is designed to introduce students to principles of microfabrication techniques and the contributions of microfabrication in medical devices. This course emphasizes the understanding of microfabrication techniques and hands-on experience, where students will observe interesting physical phenomena in devices they fabricate. Moreover, students will use these devices for practical biomedical tests from which they will understand and appreciate the benefits of microfabricated architectures in medical devices. Topics: Introduction of micro/nanofabrication, scaling analysis in physics, Micro-Total-Analysis Systems (?TAS), ?TAS for medical diagnostics & treatment, development of medical devices enabled by microfabrication. Prerequisite: BME 419 or

equivalent with a C or better, or consent of instructor. Lab fee: $50 to defray cost of equipment and materials for the project(s). Credit Hours: 3

BME521 - Neuromodulation Principles and practice of neuromodulation. Topics include: introduction to electrophysiology; cellular and neuronal patch-clamp techniques; spinal cord stimulation; deep brain stimulation; neuromodulation for pain. Restricted to Graduate standing. Lab fee: $45 to help defray cost of equipment, supplies, and software licenses. Credit Hours: 3

BME525 - Computational Methods in Biomedical Engineering Algorithmic, statistical, and data mining concepts in biomedical engineering and bioinformatics. Programming in R: Vectors, Matrices, Lists, Data Frames, Factors, Tables. Classification techniques. ROC curves. Biomarker gene selection. DNA and protein sequence analysis, sequence alignment. Restricted to graduate standing and consent of instructor. Students who have completed BME 435 or ECE 435 will not receive credit for this course. Credit Hours: 3

BME528 - Bioelectronics and Biosensors (Same as ECE 543A) The sources of electrical signals in biological systems. Methods and types of sensors for sensing bioelectrical signals, including amperometric, potentiometric, piezo-electric, impedance, and FET based biosensors. Interface between biosensors and electronics for sensor signal condition and data acquisition. Precision electronics for biosensor signal acquisition, including potentiostat, current, charge, capacitance and impedance sensing circuit, lock-in amplifier. Prerequisite: ECE 345 or equivalent with a grade of C or better. Students who have completed ECE 442 or BME 418 will not receive credit for this course. Credit Hours: 3. Credit Hours: 3

BME531 - Biophotonics Fundamental principles of optics and photonics, biology, and medicine; imaging, spectroscopy, and optical biosensors. This course is designed for graduate students as well as 4th Year undergraduate students in related disciplines who are interested in the interdisciplinary field of biophotonics. This course provides the fundamentals of light and its interaction with matter, optical imaging, lasers, and tissue optical properties. This course also provides the diagnostic applications of biophotonics, which includes biomedical imaging, microscopy techniques, and optical biosensors. Prerequisites: ECE 375, PHYS 320 or 328, with grades of C or better, or consent of instructor. Lab fee: $30 to help defray cost of equipment. Credit Hours: 3

BME533 - Speech Processing (Same as ECE 533) Fundamentals of speech production system, signal analysis of speech, speech coding, linear prediction analysis, speech synthesizing, and speech recognition algorithms. Prerequisite: MATH 250, ECE 355 with grades of C or better, or consent of instructor. Credit Hours: 3

BME534 - Biomedical Sensors & Measurements Design and evaluation of sensors with application in biomedical engineering. Instrumentation and Techniques for measurements related to biomedical applications. Prerequisite: PHSL 410A, CHEM 444, or consent of instructor. Credit Hours: 3

BME535 - Information Processing in Biomedical Engineering Methods for evaluating different approaches in signal processing systems for biomedical applications; provides familiarity with the variety of exciting software and hardware systems. Prerequisite: PHSL 410A, CHEM 444, or consent of instructor. Credit Hours: 3

BME536 - Biomedical Signal Analysis (Same as ECE 534) The nature of biomedical signals. Electricity in living tissue. Biomedical signal processing and modeling. Modeling and simulation of biomedical systems. Prerequisite: MATH 250, ECE 355, with grades of C or better, or consent of instructor. Project-based fee: $20 to help defray cost of software licenses. Credit Hours: 3

BME537 - Embedded Microprocessor System Design Design, analysis, and evaluation of microprocessor-based systems for biomedical implementation. Prerequisite: ECE 424 or consent of instructor. Credit Hours: 3

BME539 - Biomechanics Biomechanics through a rigorous mathematical standpoint while emphasizing the biological aspect. Engineering analysis of the human body. Stress, strain, and deformable body mechanics. Mechanical properties of biological tissues. Students who have completed BME 336 will not

receive credit for this course. Prerequisite: PHYS 205A and MATH 251 (or equivalent) with a grade of C or better or consent of instructor. Project fee to defray cost of software license: $45. Credit Hours: 3

BME540 - Tissue Engineering (Same as ME 540) Fundamentals of tissue engineering will be discussed. Developing biomaterials for artificial scaffolds and cell populations within the scaffolds will be discussed. Stem cells for cell-based therapy will be highlighted. Design of various organ-on-chips will be covered. Other topics include recent advances in 3D bioprinting for organ engineering/regenerative medicine. Advances in in-vitro tumor models will be discussed. Ethical considerations will be emphasized. Credit Hours: 3

BME542 - Biomaterials This course addresses the bulk and surface properties of biomaterials used for medical applications. Artificial Organs and Tissues and Tissue Engineering are included. Analytical techniques pertinent to biomaterial evaluation, and testing. Prerequisite: ME 410 or consent of instructor. Credit Hours: 3

BME543 - Kinetics and Kinematics for Engineers An introductory course to the analysis of human movement through the use of mathematical methods from an engineering viewpoint. Human dynamics, linear kinematics and kinetics, angular kinematics and kinetics, and impulse and momentum. Students who have taken BME 341 cannot receive credit for this course. Prerequisite: BME 336 or equivalent with a grade of C or better. Project fee to defray cost of software license: $45. Credit Hours: 3

BME544 - Optical Imaging and Photonics (Same as ECE 544) Geometrical optics, including refraction and reflection; Physical optics, including interference, diffraction, and polarization; Optical aberrations, including causes and effects; Fourier optics, with applications to imaging; Light sources, including LEDs and lasers; Photodetectors, including photodiodes and image sensors; Lens systems; Microscopes. Students who are taking or have taken BME 448 or ECE 448 are ineligible to enroll. Prerequisites: ECE 355, MATH 251, and PHYS 205B, or equivalent, with a grade of C or better, or consent of instructor. Lab fee: $125 to help defray the cost of equipment, supplies, and software packages. Credit Hours: 3. Credit Hours: 3

BME544A - Computer Vision This course covers fundamental and advanced topics in computer vision. Computer vision applications, image formation, image processing and filtering, deep learning, computer recognition and matching, 3D computer vision, motion and video. Students who have taken ECE 444 or BME 444 will not receive credit for this course. Prerequisite: ECE 355 with a minimum grade of C- or consent of instructor. Restricted to enrollment in ECE program. Credit Hours: 3. Credit Hours: 3

BME545 - Cellular and Tissue Engineering This course offers an introduction to cell and tissue engineering, focusing on the integration of cell biology, molecular biology, and material science in the development of innovative tissue-engineered therapies. Topics include molecular biology, transport phenomena, stem cell engineering, tissue engineering, artificial organs, and the design of drug delivery systems and devices. Students who have completed BME 441 will not receive credit for this course. Prerequisite: BME 338 or BME 508 with a grade of C or better. Lab fee: $50 to help defray cost of software licenses and equipment. Credit Hours: 3

BME563 - Advanced Image Sensors Pixel- and system-level design of charge coupled device (CCD) and complementary metal-oxide-semiconductor (CMOS) image sensors; Image processing pipelines for CCD and/or CMOS image sensors; Sources of nonlinearity and non-uniformity in image sensors, including photodiodes and amplifiers; Sources of noise in image sensors, including photon shot noise, dark shot noise, reset (kTC) noise, flicker (1/f) noise, and quantization noise; Materials used in image sensors, including silicon and indium gallium arsenide; Sources of resolution loss in image sensors, including crosstalk; Methods for evaluating image sensors; Technologies and techniques for moving beyond intensity-based imaging, including spectral imaging, polarization imaging, volumetric imaging, temporal imaging, and/or light-field imaging. Prerequisite: BME 453 or ECE 453 with a grade of C or better, or consent of instructor. Credit Hours: 3

BME567 - Modern Biomedical Imaging (Same as ECE 567) Diagnostic x-ray imaging. Tomographic imaging. Ultrasound imaging. Magnetic resonance imaging (MRI). Optical imaging. Signal and noise characteristics. Image quality evaluation. Three-dimensional image reconstruction algorithms. Students who have taken ECE 467 or BME 467 cannot receive credit for this course. Prerequisite: MATH 305 and

ECE 355 with a grade of C- or better, or consent of instructor. Project-based fee: $30 to help defray cost of equipment. Credit Hours: 3. Credit Hours: 3

BME572 - Neural Networks (Same as ECE 572) Anatomy and physiology of the cerebral cortex, Feed-forward Networks, Linear Associator, Multilayer Perceptrons, Feedback Networks, Hopfield Networks, ART. Applications to pattern recognition, robotics, image processing, and speech processing. Optical and electronic implementations. Students who have taken BME 470 or ECE 470 cannot receive credit for this course. Prerequisite: MATH 305 with a C or better or consent of instructor. Restricted to enrollment in ECE program. Credit Hours: 3

BME577 - Bioprocess Engineering (Same as ME 577) The course objective is to introduce bioprocessing concepts to ME and BME students. This will introduce the idea of designing a system to achieve a biological reaction objective. It will have content in pharmaceutical production, production of enzymes and other biproducts, research involving cell culture reactors, pharmacokinetics and other bioprocessing. Special approval needed from the instructor. Credit Hours: 3

BME592 - Special Investigations in Biomedical Engineering Individual advanced projects and problems selected by student or instructor. Restricted to graduate standing. Restricted to enrollment in BME program. Special approval needed from the instructor. Credit Hours: 1-3

BME593C - Advanced Topics in Biomedical Engineering - Biotechnology This course covers advanced scientific and engineering topics behind a rapidly evolving, multi-disciplinary biotechnology. Special approval needed from the instructor. Credit Hours: 1-3

BME593H - Advanced Topics in Biomedical Engineering - Bioelectronics Lectures on advanced topics of special interest to students in various areas of bioelectronics. This course is designed to offer and test new experimental courses in biomedical engineering. Special approval needed from the instructor. Credit Hours: 1-3

BME593K - Advanced Topics in Biomedical Engineering - Control Applications Lectures on advanced topics of special interest to students in various areas of control applications in biomedical engineering. This course is designed to offer and test new experimental courses in biomedical engineering. Special approval needed from the instructor. Credit Hours: 1-3

BME596 - Principles of Biomedical Engineering (Same as ECE 596) Principles of biomechanics, biomaterials, electrophysiology, modeling, instrumentation, biosignal processing, medical imaging, and biomedical optics. Professional moral and ethical issues in biomedical research and development. Prerequisite: MATH 250 with a C or better or consent of instructor. Credit Hours: 3

BME599 - Thesis Students are eligible to register for thesis when they have approval of the instructor who will act as thesis advisor. Prerequisite: Consent of thesis advisor. Credit Hours: 1-6

BME601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of their thesis or capstone design course. The student must have completed all other course requirements to be eligible to register in this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Prerequisites: Completion of course work except BME 592 or 599. Credit Hours: 1

Biomedical Engineering Faculty

Electrical, Computer, and Biomedical Engineering Faculty:

Ahmed, Shaikh S., Professor, Ph.D., Arizona, 2005; 2007. Nanotechnology, semiconductor devices and circuit design, simulation and characterization.

Anagnostopoulos, Iraklis, Associate Professor, Ph.D., National Technical University of Athens, 2014; 2015. Many-core architectures, run-time resource management, embedded systems.

Aruma Baduge, Gayan, Associate Professor, University of Alberta, 2013; 2016. Communications theory, wireless communications, massive MIMO systems, millimeter-wave communications, cooperative relay networks, wireless energy harvesting for IoTs, physical-layer security.

Asrari, Arash, Assistant Professor, Ph.D., University of Central Florida, 2015; 2017. Power systems operation and planning, power systems optimization, smart grid.

Chen, Kang, Associate Professor, Ph.D., Clemson University, 2014; 2015. Software-defined networking (SDN), network function virtualization (NFV), vehicular networks, mobile opportunistic/ad hoc networks.

Chen, Ying (Ada), Associate Professor, Ph.D., Duke, 2007; 2007. Biomedical imaging, image reconstruction, digital tomosynthesis, image quality analysis, signal and image processing, simulation and computing.

Chilman, Bae, Assistant Professor, Ph.D., Pennsylvania State University, 2009; 2019. Bioelectrical engineering, neuroscience, mechanobiology.

Haniotakis, Themistoklis, Associate Professor, Ph.D., University of Athens, 2008; 2013. Digital VLSI design and test, RF IC design and test, low power VLSI design, and fault-tolerant systems.

Harackiewicz, Frances J., Professor, Ph.D., University of Massachusetts-Amherst, 1990; 1989. Electromagnetics, antenna theory and design, microwaves, microstrip phased arrays and anisotropic materials.

Kagaris, Dimitrios, Professor, Ph.D., Dartmouth College, 1994; 1995. VLSI design automation, digital circuit testing, communications networks, biostatistics, bioinformatics.

Komaee, Arash, Associate Professor, Ph.D., University of Maryland, College Park, 2008; 2015. Control systems, microrobotics, signal processing, estimation theory.

Lu, Chao, Associate Professor, Ph.D., Purdue University, 2012; 2015. VLSI system design, device-circuit co-design, 3D IC.

Qin, Jun, Associate Professor, Ph.D., Duke University, 2008; 2012. Sensors and instrumentation, data acquisition, medical devices, therapeutic ultrasound, haptics.

Sayeh, Mohammad R., Professor, Ph.D., Oklahoma State University, 1985; 1986. Neural networks, optical computing, image processing, stochastic modeling, quantum electronics.

Tragoudas, Spyros, Professor and Director, Ph.D., University of Texas at Dallas, 1991; 1999. Design and test automation for VLSI, embedded systems, computer networks.

Wang, Haibo, Professor, Ph.D., University of Arizona, 2002; 2002. Bioelectronics, biosensors.

Weng, Ning, Professor, Ph.D., University of Massachusetts at Amherst, 2005; 2005. High performance routers, network processors, system-on-a-chip, computer architectures.

Mechanical, Aerospace, and Materials Engineering (MAME) Faculty:

Chowdhury, Farhan, Assistant Professor, Ph.D., University of Illinois at Urbana-Champaign, 2011; 2015. Mechanobiology, single-molecule cell mechanics, biomaterials.

Emeriti Faculty

Botros, Nazeih M., Professor, Emeritus, Ph.D., University of Oklahoma, 1985; 1985.

Daneshdoost, Morteza, Professor, Emeritus, Ph.D., Drexel University, 1984; 1984.

Galanos, Glafkos D., Professor, Emeritus, Ph.D., University of Manchester, England, 1970; 1987.

Gupta, Lalit, Professor, Emeritus, Ph.D., Southern Methodist University, 1986; 1986.

Hatziadoniu, Konstantine, Professor, Emeritus, Ph.D., West Virginia University, 1987; 1987.

Osborne, William, Professor, Emeritus, Ph.D., New Mexico State University, 1970; 2005.

Pourboghrat, Farzad, Professor, Emeritus, Ph.D., University of Iowa, 1984; 1984.

Viswanathan, Ramanarayanan, Professor, Emeritus, Ph.D., Southern Methodist University, 1983; 1983.

Business Administration

The Business Administration area offers two main programs, the Master of Business Administration, and the Doctor of Philosophy in Business Administration.

Master of Business Administration (M.B.A.)

The Master of Business Administration (M.B.A.) program is oriented toward preparing students for managerial positions in business and government. The program emphasizes the ability to comprehend internal and external social, legal, political, and economic forces as they affect the decision-making process within a business organization. The programs have been structured to serve both holders of baccalaureate degrees in business administration and those who hold degrees in other disciplines. The M.B.A. program is accredited by the AACSB International.

Learning Goals

In March 2020, the College considered input from faculty, students, and employers in adopting the following as the student learning goals for the M.B.A. program:

1. Students will possess a mastery of the content knowledge in business administration and their specific area(s) of focus.
2. Students will have the critical thinking skills to competently analyze the circumstances, develop courses of action, and evaluate potential outcomes to business problems.
3. Students will possess a mastery of professional communication, sufficient for being professionals, team members, and leaders in a business context.
4. Students will possess a mastery in understanding global perspectives within business contexts.

Admission

Students must be admitted to the SIUC Graduate School as well as the M.B.A. program. This process begins with the submission of the “Application Materials” (see below). Once admitted, students will be provided with an advisor to guide them through the program.

Applications to the M.B.A. program are accepted year-round for each of the three main semesters officially recognized by the University. In addition, applications for admission to enroll starting in the second half of a given term will also be accepted but may be subject to deferral to the following term if appropriate courses will not be available to the applicant.

Application Deadlines

Application deadlines vary based on the student's academic history and citizenship status. In all cases, the deadline refers to when a complete application must be submitted. See the following section for all materials required for a complete application.

Domestic applicants whose latest academic work was with SIU Carbondale have a deadline of 10 business days prior to the start of the term in which they wish to begin.

All other domestic applicants have a deadline of 20 business days prior to the start of the intended entrance term.

For international applicants intending to study online from abroad the deadline is 30 business days prior to the start of the term.

For international applicants intending to complete their program of study from within the United States on a student visa, the deadline is at least 50 business days prior to the start of the term. However, the applicant should allot additional time based on the specific processes necessary to obtain their visa.

Late applications will be considered when deemed possible by the respective program administrator(s). Alternatively, late applicants may seek a deferral of their application subject to the limits imposed by the Graduate School.

See the University's academic calendar and course schedules for information on when each semester begins.

Application Materials

Applicants to the program must submit the following:

1. **Graduate School application.** Applicants may find the application portal on the Graduate School's website. The portal may be found here: gradschool.siu.edu/apply.
2. **Transcripts.** Graduate School requires transcripts from all post-secondary institutions previously attended other than SIU Carbondale. If official transcripts have already been submitted in the process of applying for another program (such as previously applying for a baccalaureate degree program), please contact our office to determine if those transcripts would need to be sent again.
3. **Resume or CV.** At a minimum, applicants should include all full-time professional experience they earned after being awarded a bachelor's degree.
4. **Personal Statement.** – *see "Admissions Requirements" below.*
5. International applicants:
    a. Additional requirements for international students are outlined elsewhere in this catalog as well as online at gradschool.siu.edu/apply/international.php.
    b. Note that financial disclosures and other materials that are only used for obtaining a student VISA are not required for those who will study from abroad. Please contact Graduate School (gradschl@siu.edu) for more information.

Admission Requirements

Admissions applications are given holistic consideration. The primary areas of consideration are academic performance (e.g., GPA, examination scores) and professional experience (e.g., length and breadth of experience, level of responsibility, significance of impact, references).

An applicant's materials should demonstrate at least **one of the following three items**:

1. **Professional Experience.** Resume must show three or more years of post-baccalaureate full-time professional work experience.
2. **Academic Experience.** Transcripts must show an AACSB accredited business degree.
3. **Personal Statement.** A personal statement must be provided which demonstrates the applicant's fit with the program, and vice versa.

If the admissions committee recommends admission for an applicant despite academic deficiencies, the Graduate School will decide whether or not to directly admit that applicant. If Graduate School determines they are not qualified for direct admission, an applicant may instead seek non-declared graduate admissions until they establish a Graduate GPA of at least 3.0 across 9 credit hours. Upon completion, they may re- apply for admission to the program. Please note that non-declared students do not count as "Business" students for the purposes of applying policies such as those listed in the "Non-Business Graduate Students" section below.

Transfer Credit

Within limits imposed by the policies of the Graduate School, an incoming student may receive transfer credit for up to six credit hours of equivalent coursework if the courses were taken at an AACSB International accredited graduate school.

A graduate student who has six credit hours or less of coursework remaining in their program may petition the Master's Programs Committee for permission to complete up to six credit hours of equivalent coursework at another AACSB International accredited graduate school. The determination of equivalency is to be made by the director of the Master of Business Administration degree program.

Coursework from other than AACSB International accredited graduate schools must be approved by the Master's Program Committee.

Degree Requirements

To be eligible for the M.B.A. degree, students must satisfy the "Foundation Areas" as well as successfully complete the "Core M.B.A. Coursework" (21 credit hours) and at least one of the concentrations (12 credit hours) which can include up to one elective that can be selected from any concentration course list. This results in a total 33 credit hours required for the degree.

Students who satisfy the requirements of multiple concentrations will earn all concentrations completed. In the case of overlapping coursework between two or more concentrations, courses may apply to all relevant concentrations simultaneously.

Foundation Areas

As an accredited member of the AACSB, the College of Business and Analytics (CoBA) requires that students either currently have or swiftly obtain the requisite understanding of the common body of knowledge in business and administration. Current and prospective students can demonstrate their knowledge of these Foundation Areas through successful completion of the relevant Foundation Workshops offered by the College of Business and Analytics, proficiency examinations, or appropriate coursework at the level of C or higher. For a list of current SIU Carbondale courses that fulfill these Foundation Areas, please contact the CoBA Graduate Programs Office.

Admitted or prospective students should provide course syllabi for other courses they wish to have evaluated as fulfilling the Foundation Area requirements. These should be provided no later than 2 weeks prior to their final advisement appointment before registering. The M.B.A. admissions coordinator may consider course catalogs from the relevant years at their discretion if syllabi are not available. All Foundation Courses must have been successfully completed at a grade of C or higher to be considered. Transcripts may not be substituted for syllabi/catalog descriptions.

Any courses taken to complete the Foundation Areas, such as BA 506 or the collection(s) of undergraduate courses, may not be used to meet the credit hour degree requirements.

Accounting, Finance, and Economics Foundation Area (Required). Students should have a basic understanding of these three vital areas of business. A basic understanding of the concepts and functionality of financial accounting, finance, and macro- and micro- economics as they apply to a business setting is necessary to participate in the M.B.A. program competently and effectively at a graduate level.

Business Analytics I (Required). Globally, organizations have placed increasingly heavy emphasis on metrics and analytics in making sound business decisions. The M.B.A. program reflects this ever-increasing need throughout the coursework. Therefore, it is necessary that students understand basic statistics and analytics to participate in the program competently.

Business Analytics II (Optional). Those seeking a deeper understanding of business analytics through taking graduate courses in this topic area must begin with greater knowledge than the typical student must otherwise. To that end, this Foundation Area emphasizes knowledge in more advanced statistical techniques as well as their methods of application.

Core M.B.A. Coursework (21 Credit Hours)

The core courses in the M.B.A. program cover a broad range of areas relevant to virtually all businesses. All courses in the Core must be successfully completed by all students in order to graduate.

- BA 510: Managerial Accounting and Control Concepts (3 CH)
- BA 522: Operations & Supply Chain Management (3 CH)
- BA 530: Corporate Finance (3 CH)
- BA 540: Managerial and Organizational Behavior (3 CH)
- BA 550: Marketing Management (3 CH)
- BA 580: International Dimensions of Business and Management (3 CH)
- BA 598: Business Policies (3 CH)

Concentration Option – Analytics for Managers (4 of 7, 12 Credit Hours)

The concentration in Analytics for Managers will prepare students to take advantage of big data and data analytics in order to make effective strategic business decisions. Managers who know analytics are

needed in virtually every business sector, including healthcare, marketing, manufacturing, engineering, logistics, retail, hospitality, and financial services to name a few. This concentration focuses on skills managers need to lead organizations using the most recent developments in analytics across a wide range of areas. Students will obtain this knowledge along with a solid M.B.A. foundation.

- BA 529A: Accounting Analytics (3 CH)
- BA 529B: Financial Analytics (3 CH)
- BA 529C: Marketing Analytics (3 CH)
- BA 529D: Management Analytics (3 CH)
- BA 529E: Supply Chain Analytics (3 CH)
- BA 560: Management of Information Systems (3 CH)
- Maximum one course from any “Concentration Option” list (3 CH)

Concentration Option – Finance (4 of 7, 12 Credit Hours)

- BA 529B: Financial Analytics (3 CH)
- BA 531: Advanced Corporate Finance (3 CH)
- BA 532: Financial Institutions and Markets (3 CH)
- BA 533: Investment Concepts (3 CH)
- BA 536: Financial Analysis and Security Valuation (3 CH)
- BA 582: International Finance (3 CH)
- Maximum one course from any “Concentration Option” list (3 CH)

Concentration Option – Marketing (4 of 7, 12 Credit Hours)

- BA 505: Brand Management (3 CH)
- BA 529C: Marketing Analytics (3 CH)
- BA 551: Product Strategy and Management (3 CH)
- BA 558: Promotional Strategy and Management (3 CH)
- BA 559: Digital Marketing (3 CH)
- BA 581: Global Marketing (3 CH)
- Maximum one course from any “Concentration Option” list (3 CH)

Concentration Option – General (12 Credit Hours)

A student will be eligible to graduate with the “General” concentration if they successfully complete the “Core M.B.A. Coursework” and at least 12 additional credit hours from the concentration options listed above but does not fulfill the requirements for at least one concentration.

Course Availability

Every effort will be made to ensure that a student will be able to graduate with all Core M.B.A. Coursework and any chosen concentration under any modality opened by the program at the time of their admission. However, the specific courses available to fulfill each concentration may vary based on modality and other factors. Under the supervision of the SIUC Graduate School and/or CoBA’s Master Programs Committee (as appropriate), course alternatives may be offered by the program director if specific programs of study proposed to the student become unviable due to factors beyond the control of the student.

Course Substitutions

Course(s) which students may not join (e.g. BA 510, BA 530) due to prior education (e.g. accountancy or finance undergraduate majors) may be substituted with other 500-level course(s) subject to the approval of the director of the program. In all cases, the student must still achieve the credit hour requirements under “Degree Requirements” (above).

Core Courses. Substitutes taken to satisfy the Core M.B.A. Coursework may not also be used to satisfy the concentration area requirements.

For example, a student who has completed a finance undergraduate degree is not eligible to take BA 530 but may be approved to take a course in the Finance concentration to replace BA 530. If the student also

wants to pursue a Finance concentration, they will need to take three additional classes (9 credit hours) in the Finance concentration beyond the substitute to meet those requirements.

Concentration Courses. Students may request approval to take up to six credit hours of graduate-level coursework related to the topic of their concentration outside of those listed in the concentration sections above. Substitutions must facilitate meeting the career goals of the student and provide graduate-level training unobtainable through the courses available within the program.

Such requests must be made in writing and include the requested course's syllabus (if applicable), and expressly note the concentration to which the class is intended to apply. All requests should be directed to the Graduate Programs Office and are subject to the approval of the program director. Approval to take any substitute class must be granted prior to registration or the normal start of class (whichever is earlier).

Of the above six-hour maximum, up to three credit hours may be taken in (A) BA 591 – Independent Study or (B) BA 595 – Internship/Work Experience. The student must obtain permission from a qualified instructor willing to supervise the independent study or internship and include that information in the request for substitution. A qualifying instructor must: (1) have graduate faculty status as designated by Graduate School, (2) be qualified to instruct at the master's level as determined by the College's faculty under AACSB, **and** (3) be qualified to instruct on the topic/work area. The third qualification may be evidenced by an ongoing appointment in the related concentration area covered by AACSB (e.g. Analytics, Finance, Marketing), or as otherwise determined by the program director. Interested students should contact their advisor for further information.

Double Major Policy

Any graduate student wishing to pursue a single master's degree with two majors that includes Business Administration must satisfy the following requirements in addition to any requirements elsewhere stated in the Graduate Catalog:

- The individual must already be admitted to a graduate degree program in one of the two majors.
- The individual must satisfy all admissions requirements of the M.B.A.
- The individual must satisfy all foundation requirements.
- The individual must complete all core courses, and elective course requirements.
- No more than six credit hours of coursework outside the College of Business and Analytics may be counted toward elective requirements.

Interested students should contact the program director for further details.

Academic Retention Policies

The following policies are in addition to the retention policies of the Graduate School.

Grade Policy

A student may earn no more than five credit hours of C or lower in graduate courses taken beyond the foundation requirements. Exceeding five credit hours will result in suspension from the program.

Incomplete Policy

A student who has three outstanding recorded grades of INC or DEF remaining on the grade record at the end of any semester or session, for any reason, will be deemed to be not making normal progress and will be placed on probationary status. If the student has three outstanding grades of INC or DEF remaining on record at the end of the next semester or session, the student will be suspended from the program. The definitions of INC and DEF may be found in the Graduate Catalog.

A student who is to receive a grade of INC in a course is to meet with the instructor to work out a time and conditions for completion of the course within policy guidelines. Typically, a Notification of Incomplete Grade Agreement form is completed and the student is provided with a copy.

Assistantship Policy

M.B.A. students holding graduate assistant positions supported by the College of Business and Analytics are required to maintain a 3.0 graduate grade point average or automatically lose their graduate assistant position.

Satisfactory Progress Policy

Upon admission to the M.B.A. program, students have 6 years to complete the degree; however, this requires that students stay actively enrolled in classes, request a leave of absence, or register for 1 credit hour each semester for continuing enrollment to remain active in their program. In all three scenarios, the time counts towards the required 6 years to completion.

Students who request a leave of absence may do so for a period not to exceed one year. At the end of that year, students must return from leave and be actively registered in classes or request a continuation of the leave to be extended. Failure to do so will result in immediate dismissal from the program due to unsatisfactory progress. It is the responsibility of the student to be aware of the policies and due dates of their program.

Concurrent Degree Programs

Programs of study which offer two degrees across two majors must be officially approved by the University before any students may begin pursuing them. The following sections detail the dual degree programs with the M.B.A. which are currently approved. Prospective students/applicants that are interested in one should reach out to both programs for further details.

M.B.A./B.A. Computer Science Concurrent Degrees (Residential). The College of Business and Analytics in conjunction with the College of Engineering, Computing, Technology, and Mathematics offers a five-year integrated M.B.A./B.A. (Computer Science) Program. Selected students will be admitted to this program directly after high school. These students should take the undergraduate foundation requirements for M.B.A. as their electives while completing their B.A. degree. Their admission to the M.B.A. is guaranteed as long as they maintain a 3.0 GPA in the B.A. in Computer Science. However, they will be required to take the GMAT test prior to admission to the M.B.A. program.

M.B.A./J.D. Concurrent Degrees (Residential). The College of Business and Analytics and the School of Law, together, offer the M.B.A./J.D. concurrent degree program. The J.D. degree alone requires completion of 90 credit hours of coursework and the M.B.A. degree alone requires completion of 33 credit hours of coursework; however, in the M.B.A./J.D. concurrent degree program, the School of Law accepts nine credit hours of business coursework toward meeting the J.D. credit hour requirement and the College of Business and Analytics accepts nine credit hours of law toward meeting the M.B.A. credit hour requirement. The end result is that the concurrent degree program actually entails completion of 81 credit hours of law courses and 24 credit hours of business courses, with an 18 credit hours savings over pursuing both degrees separately.

A student interested in enrolling in the M.B.A./J.D. concurrent degree program must apply both to the graduate program in law (which involves a law school application) and to the graduate program in business (which involves a Graduate School application and an M.B.A. program application) and be accepted by each program. The student may then request permission to pursue the concurrent degree program. This request must be made both to the College of Business and Analytics and the School of Law and should be made prior to commencing the second-year law curriculum.

During the first academic year, the student enrolls only in the first-year law curriculum. In any subsequent academic term, the student may enroll for courses either in the School of Law or in the Master of Business Administration program. A student registered for both law and graduate business courses in the same term must enroll for a minimum of 10 credit hours in law, and 12 credit hours in total, in order to meet A.B.A. residence requirements and the academic requirements of the School of Law.

M.B.A./M.S. Professional Media and Media Management Studies Degrees (Residential). The College of Business and Analytics and the College of Arts and Media (CAM) together offer a concurrent degree program leading to a Master of Business Administration and a Master of Science in Professional Media and Media Management Studies.

Separately, the M.B.A. in the College of Business and Analytics requires completion of 33 credit hours of coursework, and the CAM M.S. in Professional Media and Media Management Studies requires 30 credit hours of coursework. The concurrent degree program entails completion of 21 credit hours of CAM-approved courses and 24 credit hours of CoBA-approved courses, for a total of 45 credit hours. CoBA accepts nine credit hours of CAM approved coursework and CAM accepts nine credit hours of CoBA approved coursework. This is a savings of 18 credit hours over pursuing both degrees separately. The 24 credit hours of required CoBA M.B.A. courses includes all seven core classes (BA 510, BA 522, BA 530, BA 540, BA 550, BA 598, and an International Requirement) and one BA elective course.

Students wishing to be admitted to the concurrent program must apply and be accepted into the M.B.A. program in the College of Business and Analytics, as well as apply and be accepted into the M.S. program in the College of Arts and Media. This initiates the process to pursue the concurrent degrees. Applicants for the concurrent degree program must also earn a satisfactory score on the GMAT or GRE to be admitted to the M.B.A. program. Completion of the CoBA M.B.A. Foundation Areas is also required.

M.B.A./M.S. Agribusiness Economics Degrees (Residential). The College of Business and Analytics and the School of Agricultural Sciences offer a concurrent degree program leading to both the Master of Business Administration and the Master of Science in Agribusiness Economics (ABE).

The M.B.A. degree requires completion of 33 credit hours of coursework; the M.S. ABE requires the completion of 30 credit hours of coursework. In the concurrent M.B.A./M.S. degree program, the College of Business and Analytics accepts six credit hours of ABE approved coursework, and ABE accepts six credit hours of College of Business and Analytics approved coursework. The end result is that the concurrent degree program entails completion of 27 credit hours of College of Business and Analytics approved courses and 24 credit hours of ABE approved courses, for a total of 51 credit hours. This is a savings of 12 credit hours over pursuing both degrees separately outside of the M.B.A./M.S. concurrent degree program.

Students interested in enrolling in the M.B.A./M.S. concurrent degree program must apply to both the graduate program in the College of Business and Analytics and the graduate program in ABE. The student must be accepted by both programs. This initiates the process to pursue the concurrent degrees.

Students enrolled only in the M.B.A. in the College of Business and Analytics or the M.S. ABE may request admission into the other program and approval to pursue the concurrent degree program. Admission to the concurrent degree program must be done at least one semester before the last semester of registration at SIUC.

Doctor of Philosophy (Ph.D.) in Business Administration

The Doctor of Philosophy in Business Administration program is designed to prepare individuals for faculty research and teaching positions in academic institutions and for high-level administrative or staff positions in business, government, and other organizations. Candidates for the Doctor of Philosophy in Business Administration degree must demonstrate in-depth knowledge of business and administration and high potential to undertake significant research.

Students in the program must select a broad area of interest from Accountancy, Finance, Management, and Marketing. The selected area's faculty will guide students through their academic career.

Learning Goals

In March 2020, the College considered input from faculty, students, and employers in adopting the following as the student learning goals for the doctoral program in business administration:

1. Students will have sufficient mastery of the content knowledge to act as a Subject Matter Expert of, and contribute to, their specific area’s body of knowledge.
2. Students will possess strong teaching skills to facilitate student learning in their area(s) of knowledge.
3. Students will possess a mastery of research skills to contribute to the body of knowledge in their area of expertise.
4. Students will be participants in contributing their time to the service of their academic community at the College, University, national, or global levels.

Admission Requirements

To be eligible for admission, students must have completed a master's degree or its equivalent. A grade point average in all graduate level work of 3.5 (*A* = 4.0) is preferred, but not less than 3.0 is permitted for admission.

In certain instances, admission to the Doctor of Philosophy in Business Administration degree program directly from the baccalaureate degree is permitted. To be considered for this admission route, students must have demonstrated promise of success in the Doctor of Philosophy in Business Administration degree program through outstanding achievement at the undergraduate level (minimum grade point average of 3.5 on a 4.0 scale) and superior performance in both the verbal and quantitative components of the Graduate Management Admission Test (minimum GMAT score of 600).

Applicants with exceptional research potential or outstanding academic preparation may have the option to enter the Doctor of Philosophy in Business Administration degree program after at least one semester as an M.B.A/M.Acc. student at SIUC.

To apply to the Doctor of Philosophy in Business Administration degree program, each applicant is required to take the Graduate Management Admission Test (of the Educational Testing Service) and have an official report of these scores sent to SIUC. The applicant needs to complete and submit a Graduate School application and a Doctor of Philosophy in Business Administration degree program application. Applicants must also identify their area of interest (accountancy, finance, management, or marketing) within the application. An applicant interested in applying to more than one area of interest must complete a separate application for each area chosen. The application process is entirely online and is located at gradschool.SIUC.edu/apply. Official transcripts can be sent to: Graduate Programs, College of Business and Analytics, Southern Illinois University Carbondale, Carbondale, IL 62901-4625. Email: gradprograms@business.SIUC.edu.

This program requires a nonrefundable $65 application fee that must be paid electronically with the online application for Admission to Graduate Study in the Doctor of Philosophy program in Business Administration.

Degree Requirements

Students in the program must complete course work in certain foundation areas. A student who has successfully completed the requirements for the M.B.A. degree from an AACSB International accredited graduate business program will have met the foundation requirements. A student with a M.Acc. degree from an AACSB International accredited program will be expected to take some courses outside the accounting area, to be determined by the student's advisory committee. All other students will either complete the following courses or demonstrate proficiency based on prior academic work:

- BA 410: Financial Accounting Concepts (3 CH)
- MATH 140: Short Course in Calculus (4 CH)
- QUAN 506: Inferential Statistics (4 CH) - AND -
- Five courses from any 3 of the following 4 areas:
  - BA 430, BA 510, BA 530
  - BA 450, BA 550, BA 598
  - BA 540, BA 598
  - BA 560

In addition, the student must demonstrate proficiency in computer programming.

The student must complete a prescribed program of doctoral coursework beyond the foundation work. A minimum of 60 credit hours is required: 12–18 credit hours in the major field; 6–12 credit hours in a support field; 6–12 credit hours of research tools; and 24 credit hours of dissertation credit. Additional credit hours may be required as prescribed by the student's program advisory committee (PAC). Students on CoBA assistantships must teach at least three-six credit hours during their program with the appropriate student/teacher evaluations. The assistantship student's PAC determines whether sufficient proficiency has been attained before being admitted to candidacy, and an evaluation listing must be inserted into the student's permanent file and signed by the Ph.D. Director.

It is expected that all doctoral coursework will be completed at SIUC. In exceptional cases, the PAC may consider petitions to accept credit, not to exceed six credit hours, for doctoral coursework done at other institutions.

In addition to the retention policy of the Graduate School, for the Doctor of Philosophy in Business Administration degree program five credit hours of C or three credits of D or F in any graduate level course will result in automatic dismissal from the Doctor of Philosophy in Business Administration degree program without any rights of appeal.

Advisement

For each student, a program advisory committee (PAC) is constituted and approved according to procedures described in the Doctor of Philosophy in Business Administration degree program policies and procedures document of the College of Business and Analytics. The PAC is responsible for developing and approving a program of study for the student which meets all requirements of the Graduate School and the Doctor of Philosophy in Business Administration degree program. The specific program is designed in terms of the individual student's career objectives.

Comprehensive Examination

The comprehensive examination is designed to determine the breadth and depth of the student's knowledge within the discipline. A minimum of two years of study (48 credit hours) beyond the baccalaureate must be completed before the student is permitted to sit for the comprehensive examination, and the student must be in the last semester of all scheduled coursework.

The comprehensive examination has a written and oral portion. After successful completion of the written segment, the student will sit for the oral portion of the comprehensive examination. Students who pass the oral portion will be recommended for candidacy when the residency and research tool requirements have been met. Students who fail the comprehensive examination, or any part thereof, may petition to retake the examination or any part thereof.

Specific conditions may be stipulated before the student can sit for the examination a second time. Those who fail the comprehensive examination a second time will be dismissed from the program.

Dissertation

Upon admission to candidacy, a dissertation committee is constituted and approved according to procedures described in the Doctor of Philosophy in Business Administration degree program policies and procedures document of the college. The student will prepare a written proposal and submit it to the dissertation committee and make an oral presentation of the dissertation proposal. On acceptance of the written and oral presentation of the dissertation proposal by the dissertation committee, the student will proceed with further work on the dissertation topic. The dissertation committee will monitor the student's progress in completing the dissertation. A final oral examination will be administered by the dissertation committee and will cover the subject of the dissertation and other matters related to the discipline. Upon successful completion of the final oral examination, the candidate will be recommended for the Doctor of Philosophy in Business Administration degree.

Other Graduate Programs from the College of Business and Analytics

The College of Business and Analytics also offers the Doctor of Philosophy (Ph.D.) in Economics, the Master of Accountancy (M.Acc.), the Master of Professional Accountancy (M.P.Acc.), the Master of Arts (M.A.) in Economics, the Master of Science (M.S.) in Business Analytics, the Master of Science (M.S.) in Economics, the Master of Public Administration (M.P.A.), and the post-baccalaureate (graduate) certificates in Accountancy Analytics, Accountancy Foundation, Accountancy Taxation, and Analytics for Managers. The reader is referred to the relevant sections of this catalog for details. For additional information on the M.Acc. and M.P.Acc. degrees, please contact the School of Accountancy. For all other programs, please contact the College's Graduate Programs office (details below).

Tuition and Fees

Differential Tuition

The College of Business and Analytics has a differential tuition surcharge of 15 percent of applicable tuition for graduate College of Business and Analytics majors.

Non-Business Graduate Students

- Non-business graduate students will be limited to six credit hours of 500-level BA prefix courses. These courses require the consent of the instructor and the program, and all course prerequisites must be met.
- Non-business graduate students who are put on academic probation will NOT be allowed to continue in 500-level BA prefix courses.
- Non-business graduate students will be allowed to register for BA level foundation courses (i.e., BA 410, BA 430, and BA 450).

For more information about the programs, please contact:

Graduate Programs Office
College of Business and Analytics
Mail Code 4625
1025 Lincoln Drive
Carbondale, Illinois 62901
Telephone: 618-453-3030
gradprograms@business.siu.edu

Business Administration Courses

BA410 - Financial Accounting Concepts Basic concepts, principles, and techniques used in the generation of accounting data for financial statement preparation and interpretation. Asset, liability, equity valuations and income determination is stressed. Restricted to enrollment in M.B.A. program or consent of department. Credit Hours: 3

BA430 - Business Finance An introductory course combining both a description of the structure of business financing and an analysis of functional finance from a managerial viewpoint. Prerequisites: Business Analytics I and ACCT 220, or equivalents. Restricted to enrollment in M.B.A. program or consent of department. Credit Hours: 3

BA450 - Introduction to Marketing Concepts An overview of the role of marketing within an economic system and of the major marketing activities and decisions within an organization. Emphasis is on developing an understanding of the marketing process. Restricted to enrollment in M.B.A. program or consent of department. Credit Hours: 3

BA470 - Legal and Social Environment An overview of the legal, social, and ethical dimensions which influence business with particular attention to the role of law as a control factor of society in the business world. Restricted to enrollment in M.B.A. program or consent of department. Credit Hours: 3

BA505 - Brand Management This course will focus on important issues facing brand managers who are managing existing brands. The focus will be at the level of the brand and the discussions will pertain to issues involved in the development and implementation of brand strategies. The course will provide students with a conceptual framework to examine brand equity and use it as the basis for managing categories of brands, brand extensions, and dealing with the threats of generic brands. There will be an emphasis on bringing together the different elements of a brand strategy. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA506 - Fundamentals of Business & Communication for M.B.A. Professionals This course will prepare M.B.A. Professionals for the demands of the program. The course is divided into four parts to provide students the necessary foundational skills and knowledge. (1) Introduces students to the program and helps them re-familiarize with academic communication styles. (2) Introduces students to data analytics, and satisfies the Business Analytics I foundation requirement. (3) Covers the fundamental accounting and finance topics, and satisfies the Accounting/Finance/Economics foundation requirement. (4) Introduces students to topics in their preselected concentration and satisfies the particular workshop required for that concentration. Restricted to enrollment in a College of Business and Analytics graduate program or consent of School. Credit Hours: 2

BA509 - Advanced Seminar in Leadership Development This course focuses on leadership processes. In particular, this course will emphasize self-development and the skills necessary to lead. This course will also build upon the conceptual foundations provided from leadership topics covered in previous courses, structuring opportunities for finding practical application of theoretical concepts. Restricted to enrollment in an Online MBA program or consent of department. Credit Hours: 2

BA510 - Managerial Accounting and Control Concepts Basic cost concepts, measures, methods and systems of internal accounting useful for managerial planning, implementation, control and performance evaluation. Includes cost analysis relevant for non-routine decision-making. Prerequisites: Accounting, Finance, and Economics Foundation Area, or ACCT 220, or equivalent. Not available to students who were undergraduate accounting majors. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA511 - Entrepreneurship Theory & Practice This course is designed to provide master's students with an introduction to entrepreneurship, its theory, and practical applications. During this course, students will be exposed to a number of activities related to starting and operating a business. The goal of this course is to provide students with the basic tools for business creation. The culmination of the course will be the completion of a business plan. Restricted to enrollment in an Online MBA program or consent of department. Credit Hours: 2

BA514 - Ethics of Business (Same as ACCT 514) Philosophical implications of contemporary issues in business ethics. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA522 - Operations and Supply Chain Management The study of the development of competitive strategy for the operations and supply chain function, frameworks and tools used to implement operations and supply chain strategy, and how the operations and supply chain function contributes to an organization's competitive capabilities in the global marketplace. Prerequisite: Business Analytics I Foundation Area or equivalent. Restricted to enrollment in the College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA523 - Strategic Data Mining Concepts and techniques for strategic knowledge discovery in structured and unstructured data from pre-processing and transformation to model validation and post-processing. Real-world examples and cases to put data mining in context and to illustrate how the application of data mining can lead to better strategic data-based decision making. Restricted to enrollment in College of Business and Analytics graduate program or consent of the department. Credit Hours: 3

BA524 - Foundations of Analytics for Managers This course provides an introduction of data science and analytics from a real-world perspective through interviews with technical staff, managers, and executives. In addition, the course teaches the statistical foundations needed for data science and analytics. Restricted to enrollment in College of Business and Analytics graduate program or consent of the department. Credit Hours: 3

BA525 - Data Science and Analytics for Managers Provides a broad overview of basic concepts, principles, and recent innovations in Data Science. Data Science is the study of the extraction of knowledge from data. Data Science includes good domain knowledge, data modeling, database, statistics, and AI to produce effective solutions, predictions, and insights. This course will give a practical introduction to business analytics using databases, data warehouses, structured, and unstructured data from a cross-section of industries. Restricted to enrollment in College of Business and Analytics graduate program or consent of the department. Credit Hours: 3

BA526 - Advanced Analytics and Artificial Intelligence for Managers The goal of Artificial Intelligence (AI) is to have a machine that can perform the cognitive functions of the human mind such as learning and thinking. This course is an introduction to artificial intelligence and how it can be combined with data analytics to create a powerful tool for better decision making. Prerequisite: BA 525 or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA527 - Advanced Analytics and Visualization for Managers This course will introduce students to the field of data visualization. Data visualization is the science of stripping data down to its most important structures and then using the best techniques to take advantage of human perception for effective communication, decision making, and persuasion. Students will learn how to present data in the most efficient, effective, and aesthetic for decision making. Prerequisite: BA 525 or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA528 - Analytics Capstone This is the capstone course in data analytics. Students will apply techniques learned in analytics, data science, artificial intelligence, and visualization in a variety of real world scenarios. Emphasis is on creative, abstract, and integrative thinking in executing a program in data analytics and managing the data analytics function. Prerequisite: BA 525, BA 526, and BA 527 or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA529A - Accounting Analytics Use of analytics and accounting concepts and techniques. How structured and unstructured accounting data are obtained, validated, processes, and used in making descriptive and predictive models. The use of accounting analytics for better data-based accounting decision making. Prerequisite: BA 510, or baccalaureate accounting degree, or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA529B - Financial Analytics Use of analytics and finance concepts and techniques. How structured and unstructured financial data are obtained, validated, processed, and used in making descriptive and predictive models. The use of financial analytics for better data-based financial decision making. Prerequisite: BA 530, or FIN 361, or baccalaureate finance degree, or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA529C - Marketing Analytics Use of analytics and marketing concepts and techniques. How structured and unstructured marketing data are obtained, validated, processed, and used in making descriptive and predictive models. The use of marketing analytics for better data-based marketing decision making. Prerequisite: BA 550, or baccalaureate marketing degree, or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA529D - Management Analytics Use of analytics and management concepts and techniques. How structured and unstructured management data are obtained, validated, processes, and used in making descriptive and predictive models. The use of management analytics for better data-based managerial decision making. Prerequisite: BA 540, or baccalaureate management degree, or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA529E - Supply Chain Analytics Use of analytics and supply chain concepts and techniques. How structured and unstructured supply chain data are obtained, validated, processed, and used in making descriptive and predictive models. The use of supply chain analytics for better data-based operations decision making. Prerequisite: BA 522, or baccalaureate business degree with supply chain management specialization, or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA530 - Corporate Finance Provide a broad overview of basic concepts, principles, and recent innovations in financial management. Topics covered will include risk and return, valuation, capital budgeting, capital structure and cost of capital, dividend policy, financial planning, international financial management and corporate restructuring. Prerequisite: Accounting, Finance, and Economics Foundation Area or equivalent. Not available for students who have credit for FIN 361 or were undergraduate finance

majors. Restricted to enrollment in College of Business and Analytics graduate program or consent of the department. Credit Hours: 3

BA531 - Advanced Corporate Finance An evaluation of selected financial policies connected with the acquisition and disposition of funds by the firm. An emphasis is placed on quantitative solutions to these problems. Prerequisite: BA 530, or FIN 361, or SIU undergraduate Finance major. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA532 - Financial Institutions and Markets The principal financial institutions and markets will be studied in relation to their contribution to the efficient operation of the individual enterprise and the total company. Prerequisite: BA 530 or FIN 361 with a C or better. Not available to students with credit for FIN 449 or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA533 - Investment Concepts A study of fixed return and variable return securities, investment services, industry and issue analysis, empirical studies of groups and individual stock price movements. Prerequisite: BA 530 or FIN 361 with a C or better. Not available for students with credit for FIN 433 or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA536 - Financial Analysis and Security Valuation Study of financial problems facing corporations, their causes and solutions. Emphasis given to the impact of these financial problems on how the market values securities. Topics include liquidity and leverage analysis, analysis of profitability, and other financial analysis tools. Not available for students with credit for FIN 469. Prerequisite: BA 530 or FIN 361. Restricted to enrollment in M.B.A. program or consent of school. Credit Hours: 3

BA537 - Intellectual Property and Commercialization (Same as ENGR 522, LAW 633) Course teaches substance & practice of commercializing products of scientific & technical research. Provides a basic understanding of intellectual property laws in commercialization context & how those laws are applied in various fields of technology. Will learn how to value intangible assets, taking into account their commercial potential & legal status. Course will consider the legal & business issues surrounding marketing of products of research. Will prepare & negotiate license agreements. Will analyze legal & business issues surrounding whether & how to enforce intellectual property rights. Content & methods of course delivery & evaluation has been approved for provision by distance education. Credit Hours: 3

BA538 - Options and Futures Markets Study of modern concepts and issues in financial options and futures markets. Emphasis on risk management in financial institutions, and applications in corporate finance and funds management. Not available to students with credit for FIN 432 or equivalent. Prerequisite: FIN 331 with a grade of C or better. Restrictions: College of Business and Analytics students, junior standing or higher; or program approval required. Credit Hours: 3

BA539A - Doctoral Seminar in Theoretical and Empirical Corporate Finance-I A series of doctoral seminars on theoretical and empirical issues in finance. Sections (A) through (D) may be taken only once. BA 539A covers a subset of topics on Theoretical and Empirical Corporate Finance, including methodology used in corporate finance research. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA539B - Doctoral Seminar in Theoretical and Empirical Corporate Finance-II A series of doctoral seminars on theoretical and empirical issues in finance. Sections (A) through (D) may be taken only once. BA 539B covers the remaining set of topics on Theoretical and Empirical Corporate Finance, including methodology used in corporate finance research. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA539C - Doctoral Seminar in Theoretical and Empirical Asset Pricing and Investment-I A series of doctoral seminars on theoretical and empirical issues in finance. Sections (A) through (D) may be taken only once. BA 539C covers a subset of topics on Theoretical and Empirical Asset Pricing and Investment, including methodology used in asset pricing and investment research. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA539D - Doctoral Seminar in Theoretical and Empirical Asset Pricing and Investment II A series of doctoral seminars on theoretical and empirical issues in finance. Sections (A) through (D) may be taken only once. BA 539D covers the remaining set of topics on Theoretical and Empirical Asset Pricing and Investment, including methodology used in asset pricing and investment research. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA540 - Managerial and Organizational Behavior Case analyses of human problems in the business organization. Application of findings of behavioral science research to organization problems. Development of direction and leadership skills. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA545A - Seminar in Organization Studies A series of advanced seminars in organization studies. Sections (A)-(G) can be taken only once. Foundations in Organization Studies. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA545B - Seminar in Organization Studies A series of advanced seminars in organization studies. Sections (A)-(G) can be taken only once. Advances in Organizational Behavior. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA545C - Seminar in Organization Studies A series of advanced seminars in organization studies. Sections (A)-(G) can be taken only once. Advances in Organization Theory. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA545D - Seminar in Organization Studies A series of advanced seminars in organization studies. Sections (A)-(G) can be taken only once. Advances in Strategic Management. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA545E - Seminar in Organization Studies A series of advanced seminars in organization studies. Sections (A)-(G) can be taken only once. Special Topics in Organizational Behavior. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA545F - Seminar in Organization Studies A series of advanced seminars in organization studies. Sections (A)-(G) can be taken only once. Special Topics in Organization Theory. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA545G - Seminar in Organization Studies A series of advanced seminars in organization studies. Sections (A)-(G) can be taken only once. Special Topics in Strategic Management. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA547A - Seminar in Production/Operations Management-Foundations in Production/Operations Management Series of advanced seminars in Production/Operations Management. Sections (A) through (C) may be taken only once. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA547B - Seminar in Production/Operations Management Series of advanced seminars in Production/Operations Management. Sections (A) through (C) may be taken only once. Service Operations Management. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA547C - Seminar in Production/Operations Management Series of advanced seminars in Production/Operations Management. Sections (A) through (C) may be taken only once. Production/ Operations Management and Information Systems. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA547D - Seminar in Production/Operations Management Series of advanced seminars in Production/Operations Management. Special Topics in Production/Operations Management. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA548A - Seminar in Management Information Systems A series of advanced seminars on Management Information Systems (MIS). Sections (A) through (D) may be taken only once. Advances in Management Information Systems. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA548B - Seminar in Management Information Systems A series of advanced seminars on Management Information Systems (MIS). Sections (A) through (D) may be taken only once. Decision Support and Information Systems. Prerequisite: (A). Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA548C - Seminar in Management Information Systems A series of advanced seminars on Management Information Systems (MIS). Sections (A) through (D) may be taken only once. Section (E) may be repeated as topics vary. Quantitative and Computer Methods for Decision Support and Information Systems. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA548D - Seminar in Management Information Systems A series of advanced seminars on Management Information Systems (MIS). Sections (A) through (D) may be taken only once. Section (E) may be repeated as topics vary. Strategic Management of Information. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA548E - Project Management Organizations have become increasingly complex and their success is generally dependent on how well individuals can function as a group. It is important that you understand the activities that are necessary to participate in or manage a successful project; these topics include project selection, project scheduling, project budgeting, project monitoring and controlling a project, and closing a project. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA550 - Marketing Management A managerial approach to the study of marketing. Emphasis is on the nature and scope of the marketing manager's responsibilities and on marketing decision-making. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA551 - Product Strategy and Management Designed to treat product management and its relationships with business policies and procedures; the development of multiproduct strategies, means of developing such strategies and the problems and methods of commercialization. Prerequisite: BA 550 or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA552 - Research Methodology for Marketing The study of theory, method and procedure for quantitative and qualitative analysis of primary and secondary marketing data. Emphasis is placed on application of specific research tools to the process of formulating and testing research hypotheses. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA555 - Seminar in Consumer Behavior Emphasis on the theories and research relating behavioral science to the discipline of marketing. Development of sophisticated comprehension of the consumption process is undertaken. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA556 - Seminar in Marketing Strategy Long run market opportunities are identified and evaluated. Methods of implementation and execution affecting the relationship of strategic marketing planning to the allocation decisions of top management are emphasized. The orientation is toward theoretical development to provide a base for continuing research in the field. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA557 - Seminar in Marketing Theory The philosophical bases underlying the development of theory in marketing. The process of development of marketing ideations through research is emphasized. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA558 - Promotional Strategy and Management The study of the elements of the promotional mix including advertising, personal selling, sales promotion and publicity and how they apply in the profit and not-for-profit sectors of the market place. Prerequisite: BA 550 or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA559 - Digital Marketing This course focuses on the development of competitive strategy for the digital marketing function of organizations, how that strategy relates to organizational strategy, and how the digital marketing function can contribute to an organization's competitive capabilities in the global marketplace. This course will introduce digital marketing and marketing on the internet, including email marketing, social networks, search engine advertising and optimization, blogging, virtual communities, viral and affiliate marketing, mobile marketing, and online B2B communications. The focus will be on how firms can use these new mediums to communicate with target audiences, deepen their relationships with online customers, and promote their products/services. Prerequisite: BA 550 with a C- or better, or baccalaureate marketing degree, or equivalent. Restricted to enrollment in the College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA560 - Management of Information Systems A survey of information system design, analysis and operations. Topics include systems concepts, systems analysis and design, database management, software and hardware concepts, decision support systems, expert systems, distributed processing and telecommunications and information systems planning. Applications of information technology will be emphasized. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA561 - Database Design and Applications Database planning, design and implementation; application of data modeling techniques-entity-relationship diagrams, hierarchical, network, relational and object-oriented data modeling; physical design and data administration; Distributed and Expert Database Systems. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA566 - Working Capital Management Liquidity analysis and management with a focus on managing cash, marketable securities, accounts receivable, inventory, banking relationships and short-term financing. Not available to students with credit for FIN 462 or equivalent. Prerequisite: FIN 361 with a grade of C or better or concurrent enrollment. Restrictions: College of Business and Analytics majors or minors, junior standing or higher; or program approval required. Credit Hours: 3

BA567 - Forecasting and Capital Budgeting Long-term forecasting techniques used in business; alternative approaches to capital structure decisions, cost of capital measurement; and performance measurement for investment decisions including mergers and leasing; explicit consideration of certainty, risk, and uncertainty in investment analysis; theory and applications in private and public sectors. Not available to students with credit for FIN 463 or equivalent. Prerequisite: FIN 361 with a grade of C or better or concurrent enrollment. Restrictions: College of Business and Analytics majors or minors, junior standing or higher; or departmental approval required. Credit Hours: 3

BA574 - Advanced Research Methods in Business Administration A capstone research course in business that exposes the student to a full range of research experiences. Emphasis is on integrating learning and creative thinking in the execution of the research process. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA574B - Advanced Research Methods II This course is a practicum in advanced research methods. It will focus on analysis of data, interpretation of results and synthesis of conclusions based on a clear understanding of the objectives of research, the characteristics of data and techniques for manipulating data. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA575 - Seminar in Multivariate Statistics This seminar in multivariate statistics will give doctoral students in Business a theoretical and practical knowledge of multivariate methods such as cluster analysis, multiple regression, discriminant analysis, canonical analysis, etc., for the purpose of equipping them for dissertation work, and subsequent research for publication in the top academic business journals. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA580 - International Dimensions of Business and Management International business and activities are examined in the international environment. The course will focus on concepts and issues of international business and will analyze the marketing, financial, accounting, managerial, logistical and production functions of international operations. Emphasis is on integrating, learning and creative thinking through lecture and case analysis. Foundational M.B.A. coursework should be completed. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA581 - Global Marketing The basic elements of marketing management are identified in the setting of a global business environment. Emphasis is given to variables in the international markets that effect strategic business planning such as cultural, ethical, political and economic influences. The course focuses on current trends in the marketing practices of organization. Prerequisite: BA 550 or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA582 - International Finance Discussion of international monetary system, parity conditions, foreign exchange markets and financial markets. Special focus on financial management of the multinational firm, including risk assessment, hedging, capital budgeting, and performance evaluation and control. Not available for students with credit for FIN 464. Prerequisite: BA 530 or FIN 361. Restricted to enrollment in College of Business and Analytics graduate program, or consent of department. Credit Hours: 3

BA588A - Study Abroad-Business Provides graduate credit for study abroad at accredited and approved foreign institutions. To be taken as first study abroad program. Restricted to enrollment in M.B.A. program or consent of department. Credit Hours: 3

BA588B - Study Abroad-Business Provides graduate credit for study abroad at accredited and approved foreign institutions. To be taken as second study abroad program. Prerequisite: All Foundation Area degree requirements. Restricted to enrollment in M.B.A. program or consent of department. Credit Hours: 1-3

BA590 - Marketing Research and Data Analysis The purpose of this course is to teach you the skills needed to execute marketing research projects or use marketing research information to make better marketing decisions. To do this, the course covers techniques such as, determining if marketing research is needed, problem definition, research designs, survey design, sampling issues, data collection, and data analysis. The course also covers interpretation of results as well as recommendations for marketing managers/take-aways from the research. In this class, both quantitative and qualitative methods are used to collect primary data. The deliverable for the course is a full marketing research report for a live (real) client. Prerequisites: MATH 139; ACCT/FIN/MGMT 208 and BA 550 with a grade of C or higher. Restrictions: Graduate students, program approval required. Credit Hours: 3

BA591 - Independent Study Directed independent study in selected areas of business administration. May be repeated as topics vary. Restricted to enrollment in College of Business and Analytics graduate program. Departmental approval required. Credit Hours: 1-15

BA595 - Internship/Work Experience Current practical experience in a business or other work directly related to course work in a College of Business and Analytics program and to the student's educational objectives might be used as a basis for granting credit to the college. Credit is given when specific program credit cannot be granted and is usable for elective credit only. Credit is sought by petition and must be approved by the CoBA dean before registration. Graded S/U or DEF only. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 1-6

BA598 - Business Policies Study of the development and evaluation of business strategies and policies as they relate to the overall performance of the firm within its environment. Knowledge of the functional areas of administration, available business data and analytical tools will be utilized in solving comprehensive business cases and simulation games. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA599 - Thesis Restricted to enrollment in M.B.A. program or consent of department, consent of instructor. Credit Hours: 3-6

BA600 - Dissertation Minimum of 24 hours to be earned for the Doctor of Philosophy degree in Business Administration. Restricted to advancement to candidacy for Doctor of Philosophy Degree in Business Administration. Credit Hours: 1-24

BA601 - Continuing Enrollment For those graduate students in business who have not finished their degree programs and who have one or more INCs or DEFs on their records and/or are in the process of completing their degree requirements. The student must have previously enrolled in a minimum of 36 hours of course work that meets M.B.A. program core and elective requirement or have completed a minimum of 24 hours of BA 600 before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

BA699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

FIN432 - Options and Futures Markets Study of modern concepts and issues in financial options and futures markets. Emphasis on risk management in financial institutions, and applications in corporate finance and funds management. Prerequisite: FIN 331 with a grade of C or better. Restrictions: College of Business and Analytics majors or minors, 3rd Year standing or higher; or program approval required. A student may not receive credit for both FIN 432 and BA 538. Credit Hours: 3

FIN463 - Forecasting and Capital Budgeting Long-term forecasting techniques used in business; alternative approaches to capital structure decisions, cost of capital measurement; and performance measurement for investment decisions including mergers and leasing; explicit consideration of certainty, risk, and uncertainty in investment analysis; theory and applications in private and public sectors. Prerequisite: FIN 361 with a grade of C or better or concurrent enrollment. Restrictions: College of Business and Analytics majors or minors, 3rd Year standing or higher; or departmental approval required. A student may not receive credit for both FIN 463 and BA 567. Credit Hours: 3

MKTG405 - Brand Management This course is about branding, and the ways brands acquire and maintain economic and non-economic value. During our time together, we will explore the origins, power, theory, meaning, relevance and practice of brands, brand development, brand metrics and brand management. Prerequisite: MKTG 304 with a grade of C or better. Restrictions: College of Business and Analytics majors or minors, junior standing or higher; or program approval required. Credit Hours: 3

MKTG435 - International Marketing Analysis of international operations and markets. Emphasis on the factors influencing marketing to and within foreign countries and the alternative methods of operations open to international firms including e-commerce. Prerequisite: MKTG 304 with a grade of C or better. Restrictions: College of Business and Analytics majors or minors, junior standing or higher; or program approval required. Credit Hours: 3

MKTG438 - Sales Management Analysis of the sales effort within the marketing system. Philosophies, concepts and judgment criteria of the sales function in relation to the total marketing program. Emphasis on the integration of computer- and Internet-based technologies in the strategic development and operations of the sales force. Prerequisite: MKTG 304, MKTG 380, and MGMT 304 with grades of C or better. Restrictions: College of Business and Analytics majors or minors, junior standing or higher; or program approval required. Credit Hours: 3

MKTG463 - Advertising Management Deals with advertising from the viewpoint of business management. Discussion of integrated marketing communication and problems of integrating advertising strategy into the firm's total marketing program. Course discusses the role of advertising in different business environments such as technology driven markets and electronic commerce. Prerequisite: MKTG 304 and MKTG 363 with grades of C or better. Restrictions: College of Business and Analytics majors or minors, junior standing or higher; or program approval required. Credit Hours: 3

MKTG489 - Services Marketing An exploration of the special challenges of services marketing, including analyzing and developing solutions for new service design and innovation; branding and selling services; service quality and customer satisfaction; infusion of services into manufacturing industries; service delivery and distribution including through intermediaries and electronic channels; self-service technology and smart services; pricing and ROI of services; and service failure and recovery. Prerequisite: MKTG

304 with a grade of C or better. Restrictions: College of Business and Analytics majors or minors, junior standing or higher; or program approval required. Credit Hours: 3

MKTG496 - Field Seminar in International Business Coursework and field study related to international business issues. Students will complete coursework on campus and then travel to international locations (e.g., Europe, Asia, or South America) for scheduled business visits with companies operating in those locations (both international and domestic businesses). Students will also complete additional report writing upon return from their international trip. Fees: package cost for air transportation, land travel in and between countries, lodging, and some meals, in addition to tuition and on-campus costs. Prerequisite: MKTG 304. Restrictions: College of Business and Analytics majors or minors, junior standing or higher; or program approval required. Credit Hours: 3

Business Administration Faculty

Graduate Faculty within the School of Accountancy

Bao, Xiaoyan "May", Associate Professor and Interim Director School of Accountancy, C.P.A., Ph.D., University of Nebraska-Lincoln, 2013; 2020. Financial accounting, taxation.

Farah, Nusrat, Assistant Professor, Accountancy, C.P.A., Ph.D., Oregon State University, 2020; 2020. Analytics, auditing and accounting information systems.

Hurley, Timothy, Clinical Assistant Professor, C.P.A., J.D., LL.M., New York University School of Law, 2009; 2022. Taxation.

Islam, Md. Shariful, Assistant Professor, Accountancy, Analytics, C.P.A., Ph.D., Louisiana Tech University, 2019; 2019. Analytics, auditing and accounting information systems.

Morris, Marc E., Professor and Interim Dean, College of Business & Analytics, J.D., Ph.D., Southern Illinois University, 2009; 2008. Governmental and not for profit, taxation, financial.

O'Donnell, Ed, Professor, Accountancy, C.P.A., Ph.D., University of North Texas, 1995; 2009. Auditing and accounting information systems.

Odom, Marcus, Professor, Accountancy, C.P.A., Ph.D., C.F.E., Oklahoma State University, 1993; 1998. Accounting information systems and auditing.

Zheng, Shucui, Clinical Associate Professor, Ph.D., Southern Illinois University Carbondale, 2019; 2017. Managerial accounting, taxation.

Graduate Faculty within the School of Analytics, Finance, and Economics

Beardsley, Xiaoxin Wang, Associate Professor, Finance, Ph.D., Pennsylvania State University, 2003; 2003. Market microstructure and investments.

Becsi, Zsolt, Associate Professor, Economics, Ph.D., University of Wisconsin-Madison, 1991; 2003. Public finance, macroeconomics.

Dai, Chifeng, Associate Professor, Economics, Ph.D., University of Florida, 2003; 2005. Industrial organization, public economics, law and economics, and applied econometrics.

Gilbert, Scott, Associate Professor, Economics, Ph.D., University of California-San Diego, 1996; 1999. Econometrics, applied macroeconomics.

Hodges, Charles, Lecturer, Finance, Ph.D., Florida State University, 1993; 2015.

Kebede, Hundanol, Assistant Professor, Economics, Ph.D., University of Virginia, 2020; 2021. International trade, development economics, and applied micro.

Lahiri, Sajal, Professor, Distinguished Scholar and Vandeveer Chair, Economics, Ph.D., Indian Statistical Institute, 1976; 2002. International trade, developmental economics, environmental economics.

Marlo, Timothy M., Clinical Assistant Professor, Finance, Ph.D., Southern Illinois University Carbondale, 2016; 2016. Investment.

Mehrabani, Ali, Assistant Professor, Economics, Analytics, Ph.D., University of California - Riverside, 2021; 2021. Econometrics, high dimensional statistics, data analytics.

Morshed, A.K.M. Mahbub, Professor, Economics, Ph.D., University of Washington, 2001; 2004. Macroeconomic theory, international economics, economic growth.

Nelson, H. James, Associate Professor, Analytics, Ph.D., The University of Colorado, 1999; 2005. Management information systems, data analytics.

Perry, Timothy T., Clinical Assistant Professor, Finance, Analytics, Ph.D., Texas Tech University, 2009; 2019. Financial analytics.

Peterson, Mark A., Professor, Finance, Ph.D., Pennsylvania State University, 1996; 1997. Investments.

Sylwester, Kevin, Professor and Director, School of Analytics, Finance, and Economics, Ph.D. University of Wisconsin-Madison, 1997; 1998. Macroeconomics, data analytics.

Tu, Danni, Assistant Professor, Finance, Ph.D., Iowa State University, 2022; 2022. Corporate finance, mergers and acquisitions.

Watts, Alison, Professor, Economics, Ph.D., Duke University, 1993; 2001. Microeconomics, game theory, industrial organization, law and economics.

Graduate Faculty within the School of Management and Marketing

Adjei, Mavis, Professor, Marketing, Ph.D., University of Mississippi, 2006; 2006. Relationship marketing strategy, ecommerce strategy.

Anaza, Nwamaka A., Professor, Marketing, Ph.D., Purdue University, 2010; 2015. Sales research.

Carter, Min, Professor, Management, Ph.D., Auburn University, 2009; 2015. Leadership.

Clark, Terry, Professor, Marketing, Ph.D., Texas A&M University, 1987; 1999. Marketing strategy, international marketing.

Dai, Ye, Associate Professor, Management, Ph.D., University of Texas at Austin, 2012; 2012. Strategic management, business policy.

Davis, Nicole, Professor of Practice, Hospitality, Tourism and Event Management, Ph.D., Southern Illinois University, 2009; 2004. Food history, mid-west foodways and cuisine, social media in tourism, education technology, and destination marketing.

Davis, Randall S., Professor, Public Administration, Ph.D., University of Kansas, 2011; 2013. Public management, organizational behavior, research methodology.

DeYong, Gregory D., Associate Professor, Management, Ph.D., Indiana University, 2010; 2013. Operations and supply chain management, decision technologies.

Farrish, John R., Associate Professor, Hospitality, Tourism and Event Management, Ph.D., University of Nevada Las Vegas, 2010; 2016. Hospitality information technology.

Fraedrich, John, Professor, Marketing, Ph.D., Texas A&M University, 1988; 1987. Business ethics, ethical decision.

Grant, James, Associate Professor of Practice, Public Administration, Ph.D., University of Georgia, 1976; 2010.

Kamran Disfani, Omid, Assistant Professor, Marketing, Analytics, Ph.D., University of Missouri, 2019; 2019. Marketing strategy, retail marketing, data analytics.

Karau, Steven J., Professor, Management, Ph.D., Purdue University, 1993; 1998. Organizational behavior, human resource management.

Mykytyn, Peter P., Jr., Professor, Management, Ph.D., Arizona State University, Tempe, 1985; 2001. Management information systems.

Nelson, Kay M., Professor, Management, Ph.D., University of Texas at Austin, 1995; 2005. Management information systems.

Smith, Sylvia F., Professor, Hospitality, Tourism and Event Management, Ph.D., University of Tennessee, 2007; 2007. Food service management, culinary tourism.

Stewart, LaShonda M., Professor and Associate Dean, Public Administration, Ph.D., Mississippi State University, 2008; 2008. Budget, financial management.

Ulu, Sevincgul, Assistant Professor, Marketing, Ph.D., Rutgers University, 2018; 2022. Consumer behavior, online word of mouth, gender roles, and brand activism.

Emeriti Faculty

Färe, Rolf, Professor, Emeritus, Docent, University of Lund, Sweden, 1976; 1978.

Foster, John L., Associate Professor, Emeritus, Ph.D., University of Minnesota, 1971; 1975.

Grabowski, Richard, Professor, Emeritus, Ph.D., University of Utah, 1977; 1979.

Hamman, John, Associate Professor, Emeritus, Ph.D., University of Illinois, 1988; 1989.

Hendricks, Scott P., Clinical Assistant Professor, Emeritus, C.P.A., M.Acc., J.D., Southern Illinois University, 1983; 1980.

Karnes, Allan, Professor, Emeritus, C.P.A., M.Acc., J.D., Southern Illinois University, 1986; 1977.

Mitchell, Thomas M., Associate Professor, Emeritus, Ph.D., Brown University, 1984; 1983.

Myers, John G., Professor, Emeritus, Ph.D., Columbia University, 1961; 1977.

Primont, Daniel, Professor, Emeritus, Ph.D., University of California, Santa Barbara, 1970; 1978.

Sharma, Subhash C., Professor, Emeritus, Ph.D., University of Kentucky, 1983; 1983.

Wacker, Raymond, Associate Professor, Emeritus, C.P.A., Ph.D., University of Houston, 1989; 1989.

Business Analytics

The Business Analytics area offers two fully online programs, a Master of Science, and a post-graduate certificate.

Master of Science (M.S.) in Business Analytics

The Master of Science in Business Analytics is a comprehensive program that prepares students for management and executive careers linking technology and management in today's data-heavy analytical world. Data scientists are very good at big data, database, and data analytics, but often lack business training or experience. Managers excel at business operations but have little if any experience with artificial intelligence and machine learning technologies. Graduates with an M.S. in Business Analytics will have a good working knowledge of database, data science, analytics, data visualization, and artificial intelligence as well as a good foundation in business functions. This program applies leading-edge analytics techniques and artificial intelligence to identify and solve today's and tomorrow's complex business problems.

Admissions

Applications for admission to the program are accepted year-round for any semester.

Application Materials

1. **Graduate School application**. Applicants may find the application portal on Graduate School's website. The portal may be found here: https://gradschool.siu.edu/apply/.
2. **Transcripts**. Graduate School requires transcripts from all post-secondary institutions previously attended other than SIU Carbondale. If official transcripts have already been submitted in the process of applying for another program (such as previously applying for a baccalaureate degree program), please contact our office to determine if those transcripts would need to be sent again.
3. **Resume or CV.** At a minimum, applicants should include all full-time professional experience they earned after being awarded a bachelor's degree.
4. **Personal Statement.** Optional - see “Admissions Requirements” below.
5. **International applicants** –
    a. Additional requirements for international students are outlined elsewhere in this catalog as well as online at https://gradschool.siu.edu/apply/international.php.

b. Note that financial disclosures and other materials that are only used for obtaining a student VISA are not required for online programs such as this. Please contact Graduate School (gradschl@siu.edu) for more information.

Admission Requirements

Admissions applications are given holistic consideration. The primary areas of consideration are academic performance (miminum 2.7 GPA, on a scale of 4.00, on the entire last undergraduate GPA earned at the time of application) and professional experience (e.g., length and breadth of experience, level of responsibility, significance of impact, references).
An applicant's materials should demonstrate at least **one of the following three items**:

1. **Professional Experience**. Resume must show three or more years of post-baccalaureate full-time professional work experience.
2. **Academic Experience**. Transcripts must show an AACSB accredited business degree.
3. **Personal Statement**. A personal statement which demonstrates the applicant's fit with the program.

If the admissions committee recommends admission for an applicant despite academic deficiencies, the Graduate School will decide whether or not to directly admit that applicant. If the Graduate School determines one is not qualified for direct admission, an applicant may instead seek non-declared graduate status until establishing a Graduate GPA of at least 3.0 across 9 credit hours. Upon completion, they may re-apply for admission to the program. Please note that non-declared students do not count as “Business” students for the purposes of applying policies.

Transfer Credit

Within the limits imposed by the policies of the Graduate School, an incoming student may receive transfer credit if equivalent graduate-level courses were taken at an AACSB International accredited graduate school. The determination of equivalency is to be made by the faculty director/coordinator of the degree program. Coursework from other than AACSB International accredited graduate schools must be approved by the College’s Master’s Programs Committee.

Degree Requirements

Students in the program must successfully complete 36 credit hours of coursework, with an overall GPA of 3.0. This includes 12 credit hours from the Core Business Courses, 21 credit hours from the Core Analytics Courses, and 3 credit hours from the Discipline-Specific Analytics Courses.

Core Business Courses (pick 4 of 5, 12 Credit Hours)

- BA 510: Managerial Accounting and Control Concepts (3 CH)
- BA 522: Operations and Supply Chain Management (3 CH)
- BA 530: Corporate Finance (3 CH)
- BA 540: Managerial and Organizational Behavior (3 CH)
- BA 550: Marketing Management (3 CH)

Core Analytics Courses (21 Credit Hours)

- BA 523: Strategic Data Mining (3 CH)
- BA 524: Foundations of Analytics for Managers (3 CH)
- BA 525: Data Science and Analytics for Managers (3 CH)
- BA 526: Advanced Analytics and Artificial Intelligence for Managers (3 CH)
- BA 527: Advanced Analytics and Visualization for Managers (3 CH)
- BA 528: Analytics Capstone (3 CH)
- BA 561: Database Design and Applications (3 CH)

Discipline-Specific Course in Analytics (pick 1 of 6, 3 Credit Hours)

- BA 529A: Accounting Analytics (3 CH)
- BA 529B: Financial Analytics (3 CH)

- BA 529C: Marketing Analytics (3 CH
- BA 529D: Management Analytics (3 CH)
- BA 529E: Supply Chain Analytics (3 CH)
- BA 591: Independent Study (3 CH)*

*Students must obtain approval from the supervising instructor and the program director or coordinator prior to registration for this to count towards the Discipline-Specific Analytics Course requirement.

Substitution

Course(s) which students may not join (e.g. BA 510, BA 530) due to prior education (e.g. accountancy or finance undergraduate majors) may be substituted with other 500-level course(s) subject to the approval from the director of the program. In all cases, the student must still achieve the credit hour requirements listed in “Degree Requirements."

Special Note - BA 506

BA 506 teaches students who do not have a business education with selected knowledge from a variety of traditional undergraduate business courses, while also preparing students for graduate-level writing. It fulfills the prerequisites for a number of courses including BA 510, BA 522, and BA 530.

Although it can be built into the program of study for any entry term, those without a business education may find entering in summer, when BA 506 is offered, to be ideal for a streamlined program of study.

Those who already fulfill the prerequisites of the courses or will otherwise fulfill them during their program of study, do not need BA 506.

Certificate in Analytics for Managers

Managers increasingly are expected to consider large amounts of data to make faster and better decisions. Analytics is a technical tool that can be used to process all these data to find solutions. This post-baccalaureate certificate allows practicing executives, managers, and those on the managerial track, to understand their organization in terms of analytics, to make the best use of their organization’s analytics function, and to apply analytical models back into their organization. This is not a deeply technical program because few managers will need the highly technical skills of data scientists. But, rather, this is a program that will introduce managers to the latest advances in analytics and artificial intelligence so they can make more efficient and effective data-based decisions.

Students must complete 18 credit hours of coursework in Foundation of Analytics, Information Systems, Data Science, Artificial Intelligence, Visualization, and the Analytics Capstone course.

For more information about the programs, please contact:

Graduate Programs Office
College of Business and Analytics
Mail Code 4625
1025 Lincoln Drive
Carbondale, Illinois 62901
Telephone: 618-453-3030
gradprograms@business.siu.edu

Differential Tuition

The College of Business and Analytics has a differential tuition surcharge of 15 percent of applicable tuition for graduate College of Business and Analytics majors. The differential tuition surcharge will be assessed at the in-state tuition rate.

Business Analytics Courses

BA410 - Financial Accounting Concepts Basic concepts, principles, and techniques used in the generation of accounting data for financial statement preparation and interpretation. Asset, liability, equity valuations and income determination is stressed. Restricted to enrollment in M.B.A. program or consent of department. Credit Hours: 3

BA430 - Business Finance An introductory course combining both a description of the structure of business financing and an analysis of functional finance from a managerial viewpoint. Prerequisites: Business Analytics I and ACCT 220, or equivalents. Restricted to enrollment in M.B.A. program or consent of department. Credit Hours: 3

BA450 - Introduction to Marketing Concepts An overview of the role of marketing within an economic system and of the major marketing activities and decisions within an organization. Emphasis is on developing an understanding of the marketing process. Restricted to enrollment in M.B.A. program or consent of department. Credit Hours: 3

BA470 - Legal and Social Environment An overview of the legal, social, and ethical dimensions which influence business with particular attention to the role of law as a control factor of society in the business world. Restricted to enrollment in M.B.A. program or consent of department. Credit Hours: 3

BA505 - Brand Management This course will focus on important issues facing brand managers who are managing existing brands. The focus will be at the level of the brand and the discussions will pertain to issues involved in the development and implementation of brand strategies. The course will provide students with a conceptual framework to examine brand equity and use it as the basis for managing categories of brands, brand extensions, and dealing with the threats of generic brands. There will be an emphasis on bringing together the different elements of a brand strategy. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA506 - Fundamentals of Business & Communication for M.B.A. Professionals This course will prepare M.B.A. Professionals for the demands of the program. The course is divided into four parts to provide students the necessary foundational skills and knowledge. (1) Introduces students to the program and helps them re-familiarize with academic communication styles. (2) Introduces students to data analytics, and satisfies the Business Analytics I foundation requirement. (3) Covers the fundamental accounting and finance topics, and satisfies the Accounting/Finance/Economics foundation requirement. (4) Introduces students to topics in their preselected concentration and satisfies the particular workshop required for that concentration. Restricted to enrollment in a College of Business and Analytics graduate program or consent of School. Credit Hours: 2

BA509 - Advanced Seminar in Leadership Development This course focuses on leadership processes. In particular, this course will emphasize self-development and the skills necessary to lead. This course will also build upon the conceptual foundations provided from leadership topics covered in previous courses, structuring opportunities for finding practical application of theoretical concepts. Restricted to enrollment in an Online MBA program or consent of department. Credit Hours: 2

BA510 - Managerial Accounting and Control Concepts Basic cost concepts, measures, methods and systems of internal accounting useful for managerial planning, implementation, control and performance evaluation. Includes cost analysis relevant for non-routine decision-making. Prerequisites: Accounting, Finance, and Economics Foundation Area, or ACCT 220, or equivalent. Not available to students who were undergraduate accounting majors. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA511 - Entrepreneurship Theory & Practice This course is designed to provide master's students with an introduction to entrepreneurship, its theory, and practical applications. During this course, students will be exposed to a number of activities related to starting and operating a business. The goal of this course is to provide students with the basic tools for business creation. The culmination of the course will be the completion of a business plan. Restricted to enrollment in an Online MBA program or consent of department. Credit Hours: 2

BA514 - Ethics of Business (Same as ACCT 514) Philosophical implications of contemporary issues in business ethics. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA522 - Operations and Supply Chain Management The study of the development of competitive strategy for the operations and supply chain function, frameworks and tools used to implement operations and supply chain strategy, and how the operations and supply chain function contributes to an organization's competitive capabilities in the global marketplace. Prerequisite: Business Analytics I Foundation Area or equivalent. Restricted to enrollment in the College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA523 - Strategic Data Mining Concepts and techniques for strategic knowledge discovery in structured and unstructured data from pre-processing and transformation to model validation and post-processing. Real-world examples and cases to put data mining in context and to illustrate how the application of data mining can lead to better strategic data-based decision making. Restricted to enrollment in College of Business and Analytics graduate program or consent of the department. Credit Hours: 3

BA524 - Foundations of Analytics for Managers This course provides an introduction of data science and analytics from a real-world perspective through interviews with technical staff, managers, and executives. In addition, the course teaches the statistical foundations needed for data science and analytics. Restricted to enrollment in College of Business and Analytics graduate program or consent of the department. Credit Hours: 3

BA525 - Data Science and Analytics for Managers Provides a broad overview of basic concepts, principles, and recent innovations in Data Science. Data Science is the study of the extraction of knowledge from data. Data Science includes good domain knowledge, data modeling, database, statistics, and AI to produce effective solutions, predictions, and insights. This course will give a practical introduction to business analytics using databases, data warehouses, structured, and unstructured data from a cross-section of industries. Restricted to enrollment in College of Business and Analytics graduate program or consent of the department. Credit Hours: 3

BA526 - Advanced Analytics and Artificial Intelligence for Managers The goal of Artificial Intelligence (AI) is to have a machine that can perform the cognitive functions of the human mind such as learning and thinking. This course is an introduction to artificial intelligence and how it can be combined with data analytics to create a powerful tool for better decision making. Prerequisite: BA 525 or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA527 - Advanced Analytics and Visualization for Managers This course will introduce students to the field of data visualization. Data visualization is the science of stripping data down to its most important structures and then using the best techniques to take advantage of human perception for effective communication, decision making, and persuasion. Students will learn how to present data in the most efficient, effective, and aesthetic for decision making. Prerequisite: BA 525 or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA528 - Analytics Capstone This is the capstone course in data analytics. Students will apply techniques learned in analytics, data science, artificial intelligence, and visualization in a variety of real world scenarios. Emphasis is on creative, abstract, and integrative thinking in executing a program in data analytics and managing the data analytics function. Prerequisite: BA 525, BA 526, and BA 527 or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA529A - Accounting Analytics Use of analytics and accounting concepts and techniques. How structured and unstructured accounting data are obtained, validated, processes, and used in making descriptive and predictive models. The use of accounting analytics for better data-based accounting decision making. Prerequisite: BA 510, or baccalaureate accounting degree, or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA529B - Financial Analytics Use of analytics and finance concepts and techniques. How structured and unstructured financial data are obtained, validated, processed, and used in making descriptive and predictive models. The use of financial analytics for better data-based financial decision making. Prerequisite: BA 530, or FIN 361, or baccalaureate finance degree, or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA529C - Marketing Analytics Use of analytics and marketing concepts and techniques. How structured and unstructured marketing data are obtained, validated, processed, and used in making descriptive and predictive models. The use of marketing analytics for better data-based marketing decision making. Prerequisite: BA 550, or baccalaureate marketing degree, or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA529D - Management Analytics Use of analytics and management concepts and techniques. How structured and unstructured management data are obtained, validated, processes, and used in making descriptive and predictive models. The use of management analytics for better data-based managerial decision making. Prerequisite: BA 540, or baccalaureate management degree, or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA529E - Supply Chain Analytics Use of analytics and supply chain concepts and techniques. How structured and unstructured supply chain data are obtained, validated, processed, and used in making descriptive and predictive models. The use of supply chain analytics for better data-based operations decision making. Prerequisite: BA 522, or baccalaureate business degree with supply chain management specialization, or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA530 - Corporate Finance Provide a broad overview of basic concepts, principles, and recent innovations in financial management. Topics covered will include risk and return, valuation, capital budgeting, capital structure and cost of capital, dividend policy, financial planning, international financial management and corporate restructuring. Prerequisite: Accounting, Finance, and Economics Foundation Area or equivalent. Not available for students who have credit for FIN 361 or were undergraduate finance majors. Restricted to enrollment in College of Business and Analytics graduate program or consent of the department. Credit Hours: 3

BA531 - Advanced Corporate Finance An evaluation of selected financial policies connected with the acquisition and disposition of funds by the firm. An emphasis is placed on quantitative solutions to these problems. Prerequisite: BA 530, or FIN 361, or SIU undergraduate Finance major. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA532 - Financial Institutions and Markets The principal financial institutions and markets will be studied in relation to their contribution to the efficient operation of the individual enterprise and the total company. Prerequisite: BA 530 or FIN 361 with a C or better. Not available to students with credit for FIN 449 or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA533 - Investment Concepts A study of fixed return and variable return securities, investment services, industry and issue analysis, empirical studies of groups and individual stock price movements. Prerequisite: BA 530 or FIN 361 with a C or better. Not available for students with credit for FIN 433 or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA536 - Financial Analysis and Security Valuation Study of financial problems facing corporations, their causes and solutions. Emphasis given to the impact of these financial problems on how the market values securities. Topics include liquidity and leverage analysis, analysis of profitability, and other financial analysis tools. Not available for students with credit for FIN 469. Prerequisite: BA 530 or FIN 361. Restricted to enrollment in M.B.A. program or consent of school. Credit Hours: 3

BA537 - Intellectual Property and Commercialization (Same as ENGR 522, LAW 633) Course teaches substance & practice of commercializing products of scientific & technical research. Provides a basic understanding of intellectual property laws in commercialization context & how those laws are

applied in various fields of technology. Will learn how to value intangible assets, taking into account their commercial potential & legal status. Course will consider the legal & business issues surrounding marketing of products of research. Will prepare & negotiate license agreements. Will analyze legal & business issues surrounding whether & how to enforce intellectual property rights. Content & methods of course delivery & evaluation has been approved for provision by distance education. Credit Hours: 3

BA538 - Options and Futures Markets Study of modern concepts and issues in financial options and futures markets. Emphasis on risk management in financial institutions, and applications in corporate finance and funds management. Not available to students with credit for FIN 432 or equivalent. Prerequisite: FIN 331 with a grade of C or better. Restrictions: College of Business and Analytics students, junior standing or higher; or program approval required. Credit Hours: 3

BA539A - Doctoral Seminar in Theoretical and Empirical Corporate Finance-I A series of doctoral seminars on theoretical and empirical issues in finance. Sections (A) through (D) may be taken only once. BA 539A covers a subset of topics on Theoretical and Empirical Corporate Finance, including methodology used in corporate finance research. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA539B - Doctoral Seminar in Theoretical and Empirical Corporate Finance-II A series of doctoral seminars on theoretical and empirical issues in finance. Sections (A) through (D) may be taken only once. BA 539B covers the remaining set of topics on Theoretical and Empirical Corporate Finance, including methodology used in corporate finance research. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA539C - Doctoral Seminar in Theoretical and Empirical Asset Pricing and Investment-I A series of doctoral seminars on theoretical and empirical issues in finance. Sections (A) through (D) may be taken only once. BA 539C covers a subset of topics on Theoretical and Empirical Asset Pricing and Investment, including methodology used in asset pricing and investment research. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA539D - Doctoral Seminar in Theoretical and Empirical Asset Pricing and Investment II A series of doctoral seminars on theoretical and empirical issues in finance. Sections (A) through (D) may be taken only once. BA 539D covers the remaining set of topics on Theoretical and Empirical Asset Pricing and Investment, including methodology used in asset pricing and investment research. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA540 - Managerial and Organizational Behavior Case analyses of human problems in the business organization. Application of findings of behavioral science research to organization problems. Development of direction and leadership skills. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA545A - Seminar in Organization Studies A series of advanced seminars in organization studies. Sections (A)-(G) can be taken only once. Foundations in Organization Studies. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA545B - Seminar in Organization Studies A series of advanced seminars in organization studies. Sections (A)-(G) can be taken only once. Advances in Organizational Behavior. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA545C - Seminar in Organization Studies A series of advanced seminars in organization studies. Sections (A)-(G) can be taken only once. Advances in Organization Theory. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA545D - Seminar in Organization Studies A series of advanced seminars in organization studies. Sections (A)-(G) can be taken only once. Advances in Strategic Management. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA545E - Seminar in Organization Studies A series of advanced seminars in organization studies. Sections (A)-(G) can be taken only once. Special Topics in Organizational Behavior. Restricted to

enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA545F - Seminar in Organization Studies A series of advanced seminars in organization studies. Sections (A)-(G) can be taken only once. Special Topics in Organization Theory. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA545G - Seminar in Organization Studies A series of advanced seminars in organization studies. Sections (A)-(G) can be taken only once. Special Topics in Strategic Management. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA547A - Seminar in Production/Operations Management-Foundations in Production/Operations Management Series of advanced seminars in Production/Operations Management. Sections (A) through (C) may be taken only once. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA547B - Seminar in Production/Operations Management Series of advanced seminars in Production/Operations Management. Sections (A) through (C) may be taken only once. Service Operations Management. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA547C - Seminar in Production/Operations Management Series of advanced seminars in Production/Operations Management. Sections (A) through (C) may be taken only once. Production/ Operations Management and Information Systems. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA547D - Seminar in Production/Operations Management Series of advanced seminars in Production/Operations Management. Special Topics in Production/Operations Management. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA548A - Seminar in Management Information Systems A series of advanced seminars on Management Information Systems (MIS). Sections (A) through (D) may be taken only once. Advances in Management Information Systems. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA548B - Seminar in Management Information Systems A series of advanced seminars on Management Information Systems (MIS). Sections (A) through (D) may be taken only once. Decision Support and Information Systems. Prerequisite: (A). Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA548C - Seminar in Management Information Systems A series of advanced seminars on Management Information Systems (MIS). Sections (A) through (D) may be taken only once. Section (E) may be repeated as topics vary. Quantitative and Computer Methods for Decision Support and Information Systems. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA548D - Seminar in Management Information Systems A series of advanced seminars on Management Information Systems (MIS). Sections (A) through (D) may be taken only once. Section (E) may be repeated as topics vary. Strategic Management of Information. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA548E - Project Management Organizations have become increasingly complex and their success is generally dependent on how well individuals can function as a group. It is important that you understand the activities that are necessary to participate in or manage a successful project; these topics include project selection, project scheduling, project budgeting, project monitoring and controlling a project, and closing a project. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA550 - Marketing Management A managerial approach to the study of marketing. Emphasis is on the nature and scope of the marketing manager's responsibilities and on marketing decision-

making. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA551 - Product Strategy and Management Designed to treat product management and its relationships with business policies and procedures; the development of multiproduct strategies, means of developing such strategies and the problems and methods of commercialization. Prerequisite: BA 550 or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA552 - Research Methodology for Marketing The study of theory, method and procedure for quantitative and qualitative analysis of primary and secondary marketing data. Emphasis is placed on application of specific research tools to the process of formulating and testing research hypotheses. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA555 - Seminar in Consumer Behavior Emphasis on the theories and research relating behavioral science to the discipline of marketing. Development of sophisticated comprehension of the consumption process is undertaken. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA556 - Seminar in Marketing Strategy Long run market opportunities are identified and evaluated. Methods of implementation and execution affecting the relationship of strategic marketing planning to the allocation decisions of top management are emphasized. The orientation is toward theoretical development to provide a base for continuing research in the field. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA557 - Seminar in Marketing Theory The philosophical bases underlying the development of theory in marketing. The process of development of marketing ideations through research is emphasized. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA558 - Promotional Strategy and Management The study of the elements of the promotional mix including advertising, personal selling, sales promotion and publicity and how they apply in the profit and not-for-profit sectors of the market place. Prerequisite: BA 550 or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA559 - Digital Marketing This course focuses on the development of competitive strategy for the digital marketing function of organizations, how that strategy relates to organizational strategy, and how the digital marketing function can contribute to an organization's competitive capabilities in the global marketplace. This course will introduce digital marketing and marketing on the internet, including email marketing, social networks, search engine advertising and optimization, blogging, virtual communities, viral and affiliate marketing, mobile marketing, and online B2B communications. The focus will be on how firms can use these new mediums to communicate with target audiences, deepen their relationships with online customers, and promote their products/services. Prerequisite: BA 550 with a C- or better, or baccalaureate marketing degree, or equivalent. Restricted to enrollment in the College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA560 - Management of Information Systems A survey of information system design, analysis and operations. Topics include systems concepts, systems analysis and design, database management, software and hardware concepts, decision support systems, expert systems, distributed processing and telecommunications and information systems planning. Applications of information technology will be emphasized. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA561 - Database Design and Applications Database planning, design and implementation; application of data modeling techniques-entity-relationship diagrams, hierarchical, network, relational and object-oriented data modeling; physical design and data administration; Distributed and Expert Database Systems. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA566 - Working Capital Management Liquidity analysis and management with a focus on managing cash, marketable securities, accounts receivable, inventory, banking relationships and short-term financing. Not available to students with credit for FIN 462 or equivalent. Prerequisite: FIN 361 with a grade of C or better or concurrent enrollment. Restrictions: College of Business and Analytics majors or minors, junior standing or higher; or program approval required. Credit Hours: 3

BA567 - Forecasting and Capital Budgeting Long-term forecasting techniques used in business; alternative approaches to capital structure decisions, cost of capital measurement; and performance measurement for investment decisions including mergers and leasing; explicit consideration of certainty, risk, and uncertainty in investment analysis; theory and applications in private and public sectors. Not available to students with credit for FIN 463 or equivalent. Prerequisite: FIN 361 with a grade of C or better or concurrent enrollment. Restrictions: College of Business and Analytics majors or minors, junior standing or higher; or departmental approval required. Credit Hours: 3

BA574 - Advanced Research Methods in Business Administration A capstone research course in business that exposes the student to a full range of research experiences. Emphasis is on integrating learning and creative thinking in the execution of the research process. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA574B - Advanced Research Methods II This course is a practicum in advanced research methods. It will focus on analysis of data, interpretation of results and synthesis of conclusions based on a clear understanding of the objectives of research, the characteristics of data and techniques for manipulating data. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA575 - Seminar in Multivariate Statistics This seminar in multivariate statistics will give doctoral students in Business a theoretical and practical knowledge of multivariate methods such as cluster analysis, multiple regression, discriminant analysis, canonical analysis, etc., for the purpose of equipping them for dissertation work, and subsequent research for publication in the top academic business journals. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA580 - International Dimensions of Business and Management International business and activities are examined in the international environment. The course will focus on concepts and issues of international business and will analyze the marketing, financial, accounting, managerial, logistical and production functions of international operations. Emphasis is on integrating, learning and creative thinking through lecture and case analysis. Foundational M.B.A. coursework should be completed. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA581 - Global Marketing The basic elements of marketing management are identified in the setting of a global business environment. Emphasis is given to variables in the international markets that effect strategic business planning such as cultural, ethical, political and economic influences. The course focuses on current trends in the marketing practices of organization. Prerequisite: BA 550 or equivalent. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA582 - International Finance Discussion of international monetary system, parity conditions, foreign exchange markets and financial markets. Special focus on financial management of the multinational firm, including risk assessment, hedging, capital budgeting, and performance evaluation and control. Not available for students with credit for FIN 464. Prerequisite: BA 530 or FIN 361. Restricted to enrollment in College of Business and Analytics graduate program, or consent of department. Credit Hours: 3

BA588A - Study Abroad-Business Provides graduate credit for study abroad at accredited and approved foreign institutions. To be taken as first study abroad program. Restricted to enrollment in M.B.A. program or consent of department. Credit Hours: 3

BA588B - Study Abroad-Business Provides graduate credit for study abroad at accredited and approved foreign institutions. To be taken as second study abroad program. Prerequisite: All Foundation

Area degree requirements. Restricted to enrollment in M.B.A. program or consent of department. Credit Hours: 1-3

BA590 - Marketing Research and Data Analysis The purpose of this course is to teach you the skills needed to execute marketing research projects or use marketing research information to make better marketing decisions. To do this, the course covers techniques such as, determining if marketing research is needed, problem definition, research designs, survey design, sampling issues, data collection, and data analysis. The course also covers interpretation of results as well as recommendations for marketing managers/take-aways from the research. In this class, both quantitative and qualitative methods are used to collect primary data. The deliverable for the course is a full marketing research report for a live (real) client. Prerequisites: MATH 139; ACCT/FIN/MGMT 208 and BA 550 with a grade of C or higher. Restrictions: Graduate students, program approval required. Credit Hours: 3

BA591 - Independent Study Directed independent study in selected areas of business administration. May be repeated as topics vary. Restricted to enrollment in College of Business and Analytics graduate program. Departmental approval required. Credit Hours: 1-15

BA595 - Internship/Work Experience Current practical experience in a business or other work directly related to course work in a College of Business and Analytics program and to the student's educational objectives might be used as a basis for granting credit to the college. Credit is given when specific program credit cannot be granted and is usable for elective credit only. Credit is sought by petition and must be approved by the CoBA dean before registration. Graded S/U or DEF only. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 1-6

BA598 - Business Policies Study of the development and evaluation of business strategies and policies as they relate to the overall performance of the firm within its environment. Knowledge of the functional areas of administration, available business data and analytical tools will be utilized in solving comprehensive business cases and simulation games. Restricted to enrollment in College of Business and Analytics graduate program or consent of department. Credit Hours: 3

BA599 - Thesis Restricted to enrollment in M.B.A. program or consent of department, consent of instructor. Credit Hours: 3-6

BA600 - Dissertation Minimum of 24 hours to be earned for the Doctor of Philosophy degree in Business Administration. Restricted to advancement to candidacy for Doctor of Philosophy Degree in Business Administration. Credit Hours: 1-24

BA601 - Continuing Enrollment For those graduate students in business who have not finished their degree programs and who have one or more INCs or DEFs on their records and/or are in the process of completing their degree requirements. The student must have previously enrolled in a minimum of 36 hours of course work that meets M.B.A. program core and elective requirement or have completed a minimum of 24 hours of BA 600 before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

BA699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Business Analytics Faculty

Anaza, Nwamaka, Professor, Marketing, Ph.D., Purdue University, 2010; 2015. Consumer behavior, international marketing, marketing analytics.

DeYong, Gregory D., Associate Professor, Ph.D., Indiana University, 2010; 2013. Operations and supply chain management, decision technologies.

Islam, Md. Shariful, Assistant Professor, Accountancy, Ph.D., Louisiana Tech University, 2019; 2019. Accounting information systems, auditing, data analytics.

Kamran-Disfani, Omid, Assistant Professor, Marketing, Ph.D., University of Missouri-Columbia, 2019; 2019. Data analytics.

Nelson, H. James, Associate Professor, Management, Ph.D., The University of Colorado, 1999; 2005. Analytics, artificial intelligence, information systems.

Perry, Timothy T., Clinical Assistant Professor, Finance, Ph.D., Texas Tech University, 2009; 2019. Financial analytics.

Sylwester, Kevin, Professor and Director, School of Analytics, Finance, and Economics, Ph.D. University of Wisconsin-Madison, 1997; 1998. Macroeconomics, data analytics.

Thomas, Tomcy, Visiting Assistant Professor, Business Analytics, Ph.D., University of Tennessee-Knoxville, 2019; 2023. Supply chain analytics, mangement analytics.

Chemistry

Programs leading to the Doctor of Philosophy and Master of Science degrees may be undertaken in the general areas of analytical, biochemistry, inorganic, materials, organic, and physical chemistry. The doctoral degree in chemistry is a research degree. To be awarded this degree, the student must demonstrate, to the satisfaction of the graduate committee, the ability to conduct original and independent research within some area of chemistry and must make an original contribution to the science. The M.S. in Chemistry degree also requires a research project, but with less emphasis on originality and independence.

Master of Science (M.S.) in Chemistry / Doctorate of Philosophy (Ph.D.) in Chemistry

Admission

Each student must have a baccalaureate degree in one of the sciences, mathematics, or engineering to be considered for admission to an advanced degree program.

An undergraduate major in chemistry, with the following courses, is desirable:

1. One year of organic chemistry (lecture and laboratory).
2. One year of calculus-based physical chemistry (lecture and laboratory).
3. One year of analytical chemistry including instrumental analysis.

Students with deficiencies in any area may be admitted, but such deficiencies may restrict the research areas available to the student and lead to requirements for additional courses during graduate study.

Prospective students are encouraged to contact faculty in areas of the students' research interest.

Applicants are strongly encouraged to submit Graduate Record Examination (GRE) test scores.

Foreign students whose native language is not English must meet the English Language Proficiency Requirements detailed in Graduate School admission requirements.

This program requires a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in the School of Chemical and Biomolecular Sciences. Applicants must pay this fee by credit card.

Placement Examinations

During the week before the beginning of classes, each admitted student is given written examinations (ACS standard or equivalent examination) in the five divisions of chemistry: analytical, inorganic, organic, physical, and biochemistry. Every student is required to take at least three exams. The results of these examinations are used to advise the student regarding any deficiencies to be corrected, and to place the student in appropriate courses as determined by a Graduate Student Advisory Committee. Therefore, we strongly encourage and expect all beginning students to review the appropriate undergraduate material before taking these examinations. Failure to pass the exams will generally require that the student take some remedial coursework.

Introduction to Research Techniques

All graduate students must register for CHEM 592, Introduction to Research, during the first fall semester in residence.

Minimum Registration

All students admitted to the school will register for a minimum of eight credit hours every semester in residence except during the first semester, summer sessions, and while registered for CHEM 601 only. In the first semester, the students must register for a minimum of eight credit hours, and in every summer session, a minimum of three credit hours. Registration for less than this requirement is not considered satisfactory progress toward a degree.

Formal Course Work Requirement

Each student must complete the courses specified by the student's graduate committee in the program of study. Generally, these will include the courses specified by the student's major division. The minimum course requirement for students in the master's and doctoral programs includes at least 21 credit hours of 500-level lecture-style courses and follows a "2+2+3" format, in which all students must take for credit at least two courses (six credit hours) within the student's major field and at least two courses (six credit hours) from outside the major field. In addition, students must take three lecture-style courses at the 500-level, which must be approved by the Student's Graduate Committee. These three courses may be within the student's major division or may be from outside the major field or outside the School. Eligible courses taken while in the M.S. in Chemistry at SIUC may be applied to these program course requirements.

For a student working in a cross-divisional area, the committee will design an appropriate program of study in consultation with the Graduate Advisor and the faculty of the divisions involved. Students must receive credit for graded presentations recorded as CHEM 593A-C. Masters and doctoral students are required to receive credit for CHEM 593A, which is a literature presentation that is organized through the student's divisional journal club. In addition, Ph.D. in Chemistry students must receive credit for CHEM 593B and CHEM 593C, which are received for graded presentations associated with the presentation of an independent research proposal and a presentation of the student's dissertation research, respectively.

All students must take one credit hour of CHEM 597, Professional Training, and one credit hour of CHEM 595A-E, Advanced Seminar in Chemistry, each semester in residence.

Research Director and Graduate Committee Selection

Each student must select a research director and graduate committee preferably during the first semester, but no later than the end of the second semester in residence. The student must obtain a selection form provided by the graduate adviser and must interview at least four faculty members before selecting a research director and graduate committee. For a M.S. in Chemistry candidate, the committee shall consist of the research director (chair), at least one member of the major division other than the research director, and at least one member outside the major division. For a Ph.D. in Chemistry candidate, the committee is identical except that at least one member outside the School is included. The Director of the School of Chemical and Biomolecular Sciences, if not otherwise appointed, is an ex-officio member of every graduate committee. A division may increase this requirement.

Graduate Committee Functions. The functions of the graduate committee are listed below:

1. To plan and approve the student's program of study.
2. To review the student's progress in courses and suggest and approve changes in the program of study.
3. To evaluate the student's progress in research and to make appropriate recommendations.
4. To determine whether a student may continue toward a degree. If continuation is denied, the committee must notify in writing the School Director of the reasons for this denial.
5. To read and evaluate the student's thesis or dissertation.
6. To conduct required oral examinations.

As soon as possible after being appointed, the committee will meet to plan the student's program. At this time the progress and program form is completed and filed with the graduate adviser. The committee may

require preparation of a master's thesis even if directly pursuing a Ph.D. in Chemistry degree has been previously approved by the faculty.

Research Tools

The School requires no specific research tools. A student's graduate committee, taking into account the student's background and the needs of the research area, may require that the student acquire one or more research tools (e.g., foreign language, computer programming, statistics, etc.). It is the student's responsibility to see that any research tool requirement is completed before scheduling the preliminary oral examination.

Assistantship Support

Continuation of assistantship support is contingent upon the student making satisfactory progress toward a degree. In addition, continuation of teaching assistantship support depends upon satisfactory performance of assigned duties. The Graduate School has established time limits for financial support.

First Year Evaluation

The faculty, meeting as a committee of the whole, will review the progress of all graduate students at the end of their first year in residence.

For students in the Ph.D. in Chemistry program the faculty can:

1. recommend continuation in the doctoral program.
2. recommend transfer to a terminal master's degree program.
3. request that the Graduate School terminate the student from the program (giving cause).

For students in the M.S. in Chemistry program the faculty can:

1. recommend petitioning the Graduate School to allow entry to the doctoral program (accelerated entry option). Such petition can be made any time after one semester in residence.
2. recommend continuation in the master's program with the option to petition the Graduate School to grant a master's degree equivalency. When granted, this allows the student to apply for entrance to the doctoral program without writing and defending a thesis.
3. recommend continuation in the master's program with option to petition to enter the doctoral program after completion of a master's thesis.
4. recommend continuation in a terminal master's program.
5. request that the Graduate School terminate the student from the program (giving cause).

Preliminary Examination for the Ph.D. Degree

Each student in the doctoral program must pass a preliminary examination before being advanced to candidacy. The first portion of the preliminary examination is given in the form of cumulative exams with 10 examinations scheduled each calendar year. The student must pass four examinations in no more than 10 consecutive trials. Students must begin cumulative examinations at the start of their second calendar year or immediately on admission to the doctoral program if one calendar year has already been completed in the master's program. After the student completes the cumulative examinations, the preparation and defense of an original research proposal will serve as the oral portion of the preliminary examination.

Research

A research project is required of all graduate students. A student in the Ph.D. in Chemistry program must earn at least 32 credit hours in research and dissertation (CHEM 598 and CHEM 600). A minimum of 24 hours must be dissertation credit (CHEM 600). The results of the research must be presented in the form of a dissertation acceptable to both the student's committee and to the Graduate School.

Dissertation

After being admitted to candidacy, the student must register for 24 credit hours of CHEM 600 and complete a dissertation acceptable to both the student's Graduate Committee and to the Graduate School before graduation. Students who have registered for the 24 hours of dissertation credit and have not completed the doctoral dissertation are subject to the continuing extended enrollment requirement described in the next section.

Extended Registration

A student who has completed all doctoral degree requirements with the exception of writing a dissertation, and who is in the process of writing a dissertation, must register for CHEM 601 (one to 12 credit hours per semester) until the dissertation is completed and defended.

Final Oral Examination

A student in the doctoral program must schedule and pass a final oral examination (defense of dissertation). The student will present a school seminar for credit (CHEM 593C) based on the results of the research.

After questions from the general audience, the student's graduate committee will conduct an oral examination of the student. The grade for CHEM 593C is based on the seminar presentation and is independent of the oral examination. Copies of the dissertation must be presented to members of the student's graduate committee at least one week before the seminar and the examination.

Chemistry Courses

CHEM411 - Advanced Inorganic Chemistry Inorganic chemistry covering bonding and structure, polyatomic systems, coordination compounds, and the chemistry of elements. Three lectures per week. Prerequisites: CHEM 311, 360, and 361 with grades of C- or better. Suggested MATH 221. Credit Hours: 3

CHEM431 - Environmental Chemistry Chemical principles applied to the environment and environmental problems. Chemical kinetics, thermodynamic and equilibrium concepts as they relate to the atmosphere, water and soil will be discussed to include current problems of pollutants, pollutant evaluation and pollutant remediation. Discussion of methods for the chemical analysis of environmental samples will also be included. Prerequisite: C- or better in CHEM 330 and 340. Credit Hours: 3

CHEM434 - Instrumental Analytical Chemistry Theory and practice of instrumental measurements, including emission and absorption spectroscopic, capillary electrophoretic and chromatographic methods. Two lectures and two three-hour laboratories per week for four credits. Enrollment for two credit hours is restricted to graduate students in the School of Chemical and Biomolecular Sciences who are advised to take instrumental analysis. Prerequisite: C- or better in CHEM 330. Offered fall semester only. Laboratory fee: $60. Credit Hours: 2-4

CHEM439 - Forensic Chemistry A one-semester course in the analysis of forensics samples. Topics include sample collection and preservation, chain of custody, data validation and reports, and analytical methods which may include (as time permits) chromatography, mass spectroscopy, fluorescence and absorbance spectroscopy, fingerprint identification, and scanning electron and light microscopy. One lecture and one six-hour laboratory meeting per week. Prerequisite: C- or better in CHEM 330 and 434. Offered spring semester only. Lab fee: $60. Credit Hours: 3

CHEM442 - Organic Chemistry II This is a continuation of 340 emphasizing topics that were not covered in the first semester. Topics will include the chemistry of aromatic compounds, dienes and other carbon-carbon bond forming reactions. Advanced topics such as polymers and biomolecules may also be covered. Three lectures per week. Prerequisite: C- or better in CHEM 340, 341; concurrent enrollment in 443 is recommended. Offered spring semester only. Credit Hours: 3

CHEM444 - Intermediate Organic Chemistry A transitional course between introductory and graduate level chemistry. The chemistry of carbon compounds based upon a mechanistic approach will be discussed. Three lectures per week. Prerequisite: C- or better in CHEM 340 and 442. Offered fall semester only. Credit Hours: 3

CHEM451A - Biochemistry (Same as BCHM 451A) First half of the 451 A,B two semester course. Introduction to structure and function of biomolecules including nucleic acids, proteins, sugars, polysaccharides, lipids and membranes, biochemical techniques, expression of genetic information, signal transduction and transport through membranes. Prerequisites: CHEM 340 and CHEM 342 or 442, or equivalents with grades of C- or better. Credit Hours: 3

CHEM451B - Biochemistry (Same as BCHM 451B) Second half of 451A,B two semester course. Basic kinetics, enzyme kinetics, enzyme inhibitors, regulation of enzymes, oxidation-reduction, high energy bonds, carbohydrate metabolism, aerobic/anaerobic metabolism, lipid metabolism, nitrogen metabolism, hormonal control of metabolism. Prerequisite: BCHM 451A or CHEM 451A or equivalent with a grade of C- or better. Credit Hours: 3

CHEM456 - Biophysical Chemistry (Same as BCHM 456) A one-semester course in Biophysical Chemistry intended for biochemists and molecular biologists. Emphasis will be on solution thermodynamics, kinetics and spectroscopy applied to biological systems. Prerequisites: CHEM 340 and 442, MATH 141 or 150, BCHM 451A or CHEM 451A, or equivalents. Credit Hours: 3

CHEM460 - Quantum Mechanics and Spectroscopy An introduction to quantum mechanics and spectroscopy. Prerequisite: MATH 250; C- or better in CHEM 360. MATH 221 or 305 is recommended as prerequisite or concurrent enrollment. Offered spring semester only. Credit Hours: 3

CHEM468 - Application of Symmetry to Chemistry The concepts of symmetry elements, groups and character tables will be taught. Symmetry will be applied to molecules in order to simplify and characterize their wave functions and vibrational frequencies. Prerequisite: C- or better in CHEM 460. Offered spring semester in odd years only. Credit Hours: 3

CHEM479 - Principles of Materials Chemistry Introduction to fundamental concepts of materials chemistry. Synthesis, characterization, processing and applications of different materials including solids, polymers, ceramics and molecularly designed materials. Prerequisite: CHEM 360, 411 or concurrent enrollment. Offered fall semester in odd years only. Credit Hours: 3

CHEM489 - Special Topics in Chemistry Special approval needed from the instructor and director. Credit Hours: 1-3

CHEM506 - Chemistry Topics for Teachers This graduate-level chemistry course covers topics, methods and activities that target the needs of elementary and middle school science teachers. The course consists of a combination of lectures and laboratory experiments. The specific subjects covered during the course change, depending on the needs of the current students. This course may only be taken as part of an approved major. Special approval needed from the instructor. Credit Hours: 3

CHEM511A - Advanced Inorganic Chemistry Principles of group theory and their application to molecular structure, ligand field theory and its application and magnetic properties of matter. Prerequisite: CHEM 360, CHEM 460, and CHEM 411. Credit Hours: 3

CHEM511B - Advanced Inorganic Chemistry Energetics, kinetics and mechanisms of inorganic systems. Prerequisite: CHEM 360, CHEM 411 and CHEM 460. Credit Hours: 3

CHEM519 - Advanced Topics in Inorganic Chemistry Metal ions in biological processes and other selected topics to be announced by the program. Maximum nine credit hours. Special approval needed from the instructor. Credit Hours: 3

CHEM531 - Introduction to Analytical Separations An introduction to the basic principles underlying separation science, with emphasis on all major chromatographies, gel and capillary electrophoresis, isoelectric focusing, field-flow fractionation, rate and isopynic sedimentation, filtration, reverse osmosis and related methods. Prerequisite: MATH 250. Credit Hours: 3

CHEM532 - Analytical Chemistry Instrumentation Introduction to analog and digital electronics and the computer control of system components. The course will focus on chemical instrumental and the use of filters, amplifiers and digital signal processing to improve sensitivity and detection limits. Two lectures and one three-hour laboratory per week. Prerequisite: CHEM 434. Credit Hours: 3

CHEM533 - Analytical Spectroscopy Fundamental and experimental aspects of electronic and vibrational spectrometry, with a particular emphasis on the spectroscopic analysis of atomic and molecular species. Various sources of electromagnetic radiation, detectors, optical components and the optimization of experimental methods are covered in detail. Common spectroscopic techniques are covered in detail and a portion of the course covers newly emerging techniques and developments. Prerequisite: CHEM 434. Credit Hours: 3

CHEM534 - Electrochemistry Fundamentals and applications of electrochemical methods, with emphasis on the thermodynamics and kinetics of electron transfer, electrode double-layer structures, as well as varied voltammetric techniques. Credit Hours: 3

CHEM535 - Advanced Analytical Chemistry Course surveys various statistical, data-manipulative, and numerical methods as applied to analytical chemistry, including probability distributions, methods of maximum likelihood, linear and nonlinear least squares, correlation coefficients, chi-square, F and T distributions, Pearson statistics, analysis of variance, convolution, deconvolution, cross-correlation, autocorrelation, data acquisition, Nyquist theorem, aliasing, digitization errors, digital filtering, Monte Carlo methods, and finite-difference equations. Prerequisite: CHEM 434. Credit Hours: 3

CHEM536 - Principles of Mass Spectrometry This course is an introduction to mass spectrometry with a focus on pharmaceutical and biological applications. Topics that will be covered include instrument design, ionization techniques, tandem mass spectrometry, chromatography/mass spectrometry and mass spectral interpretation. Prerequisite: CHEM 434. Credit Hours: 3

CHEM537 - Fluorescence Spectroscopy Fundamental and experimental aspects of analytical methods based on the various phenomena of luminescence. General principles of luminescence are covered in detail, as well as analytical techniques based on fluorescence quenching, energy transfer, polarization, and time resolved methods. Aspects of source of electromagnetic radiation, detectors, and electronic/optical components are discussed specifically as they pertain to fluorescence spectroscopy. Newly emerging fluorescence based techniques are also discussed. Prerequisite: CHEM 434 and CHEM 533 (or consent of the instructor). Credit Hours: 3

CHEM538 - Nanoscale Probing and Imaging This course covers basic principles of scanning probe microscopy and spectroscopy including STM, AFM, ACM and NSOM, and the broad applications in nanoscale probing and imaging. Topics include surface characterization and manipulation, nanolithography, nanomaterials, self-assembly, molecular electronics, optoelectronics, nanoscale electron transfer, single-molecular spectroscopy, protein structures, enzyme dynamics, and living cell imaging. Prerequisite: CHEM 330, CHEM 434, CHEM 360, and CHEM 460. Credit Hours: 3

CHEM539 - Advanced Topics in Analytical Chemistry Selected topics of interest to practicing analytical chemists such as microanalytical chemistry, functional-group chemical determinations, absorption spectroscopy and electroanalytical chemistry. Maximum nine credit hours. Prerequisite: CHEM 434 with a minimum grade of C. Credit Hours: 3

CHEM541 - Organic Structure and Reactivity Structure and reactivity of organic compounds: steric, electronic, kinetic and thermodynamic aspects and their relation to reactive intermediates. Credit Hours: 3

CHEM542 - Mechanistic Organic Chemistry Reaction mechanisms in organic chemistry. Electrocyclic and sigmatropic reactions, cycloadditions, free radicals, photochemistry and organometallic catalysis. Spectroscopic methods. Credit Hours: 3

CHEM543 - Synthetic Organic Chemistry Organic synthesis: classical and modern methods. Credit Hours: 3

CHEM549 - Advanced Topics in Organic Chemistry Specialized topics in organic chemistry. The topic to be covered is announced by the program. Maximum nine credit hours. Prerequisite: CHEM 542. Credit Hours: 3

CHEM552 - Biomolecular Structure and Function This course will cover the structural basis of biomolecules with an emphasis on the chemical and physical aspects involved in the architecture of proteins and nucleic acids. The study of the physical properties of biomolecular interactions and assembly of biomolecules into macromolecular complexes will be covered. Interpretation of data from atomic resolution techniques will be discussed. Prerequisites: CHEM 350 or CHEM 451A/B or equivalent. Credit Hours: 3

CHEM559 - Advanced Topics in Biological Chemistry Specialized topics in biological chemistry. The topic to be covered is announced by the program. Maximum nine credit hours. Prerequisite: C or better in CHEM 350 or CHEM 451A,B or equivalent. Credit Hours: 3

CHEM560 - Introduction to Quantum Chemistry Basic principles and applications of quantum mechanics to chemistry. Topics include operator and vector algebra, classical mechanics, angular momentum, approximate methods, hydrogen-like atoms and molecular electronic structure. Three lectures per week. Prerequisite: CHEM 360 and CHEM 460. Credit Hours: 3

CHEM561 - Molecular Orbital Theory An introduction to molecular orbital theory. Applications and limitations of various methods. Three lectures per week. Prerequisite: CHEM 360 and CHEM 460. Credit Hours: 3

CHEM562 - Advanced Molecular Spectroscopy Theory of rotational and vibrational spectroscopy, electronic spectroscopy of molecules. Three lectures per week. Prerequisite: CHEM 468 or consent of instructor. Credit Hours: 3

CHEM563 - Computational Chemical and Materials Sciences An introduction to commercial molecular modeling softwares and to performing designed research projects related to chemical and materials sciences. Three lectures per week. Prerequisite: CHEM 360 and CHEM 460 (1 year of undergraduate Physical Chemistry) or consent of instructor. Credit Hours: 3

CHEM564 - Statistical Thermodynamics Principles of statistical mechanics and applications to equilibrium and nonequilibrium systems. Topics include ideal gases, monatomic crystals, lattice statistics, the cluster method, correlation functions, Brownian motion, the Boltzmann equation and the Kubo-Green technique. Three lectures per week. Credit Hours: 3

CHEM569 - Advanced Topics in Physical Chemistry Topic to be announced by the program. Maximum nine credit hours. Special approval needed from the instructor. Credit Hours: 3

CHEM575 - Methods of Materials Characterization An introduction to the structural, morphological, spectroscopic, and thermal characterization techniques commonly used in materials chemistry. Special approval needed from the instructor. Credit Hours: 3

CHEM579 - Topics in Advanced Materials Design and applications of advanced materials. Special topics will focus on contemporary research areas of interest as determined by the instructor. Special approval needed from the instructor. Credit Hours: 3

CHEM592 - Introduction to Research Introduction to the techniques and methods of chemical research including good laboratory practice, research ethics, record keeping, publication, patents and currently active research in this program. Graded S/U only. Credit Hours: 1

CHEM593A - Graded Seminar-Literature Seminar Seminar presentations on advanced topics given in partial fulfillment of the requirements for the MS and PhD degrees in Chemistry. Credit Hours: 1

CHEM593B - Graded Seminar-Independent Proposal Presentation Seminar presentations on advanced topics given in partial fulfillment of the requirements for the MS and PhD degrees in Chemistry. Credit Hours: 1

CHEM593C - Graded Seminar-Research Seminar Seminar presentations on advanced topics given in partial fulfillment of the requirements for the MS and PhD degrees in Chemistry. Credit Hours: 1

CHEM594A - Special Readings in Chemistry Assigned library work in any of these fields of chemistry with individual instruction by a staff member. Analytical. Maximum credit three hours. Credit Hours: 2-3

CHEM594B - Special Readings in Chemistry Assigned library work in any of these fields of chemistry with individual instruction by a staff member. Biochemistry. Maximum credit three hours. Credit Hours: 2-3

CHEM594C - Special Readings in Chemistry Assigned library work in any of these fields of chemistry with individual instruction by a staff member. Inorganic. Maximum credit three hours. Credit Hours: 2-3

CHEM594D - Special Readings in Chemistry Assigned library work in any of these fields of chemistry with individual instruction by a staff member. Organic. Maximum credit three hours. Credit Hours: 2-3

CHEM594E - Special Readings in Chemistry Assigned library work in any of these fields of chemistry with individual instruction by a staff member. Physical. Maximum credit three hours. Credit Hours: 2-3

CHEM594F - Special Readings in Chemistry Assigned library work in any of these fields of chemistry with individual instruction by a staff member. History Chemistry. Maximum credit three hours. Credit Hours: 2-3

CHEM595A - Advanced Seminar in Chemistry Advanced level talks presented by graduate students. Analytical. Credit Hours: 1

CHEM595B - Advanced Seminar in Chemistry-Biochemistry Advanced level talks presented by graduate students. Credit Hours: 1

CHEM595C - Advanced Seminar in Chemistry Advanced level talks presented by graduate students. Inorganic. Credit Hours: 1

CHEM595D - Advanced Seminar in Chemistry Advanced level talks presented by graduate students. Organic. Credit Hours: 1

CHEM595E - Advanced Seminar in Chemistry Advanced level talks presented by graduate students. Physical chemistry. Credit Hours: 1

CHEM596 - Master's Degree Research Graded research for Master's Degree only. Maximum 6 credit hours. Prerequisite: Completion of at least 9 hours of graded graduate course work in the program. Restricted to admission to Master's program in Chemistry and Biochemistry. Special approval needed from student's graduate advisory committee. Credit Hours: 1-3

CHEM597 - Professional Training Experience in teaching of chemistry, instrument operation and special research projects. One hour required each semester in residence. Graded S/U only. Restricted to graduate standing. Credit Hours: 1-15

CHEM598 - Research Maximum credit 50 hours, except by permission of the student's graduate advisory committee. Graded S/U only. Special approval needed from the director. Credit Hours: 1-12

CHEM599 - Thesis Maximum credit six hours. Special approval needed from the director. Credit Hours: 1-6

CHEM600 - Dissertation-Doctoral Requirement for Ph.D. degree, 24 hours. Maximum credit 30 hours, except by permission of the student's graduate advisory committee. Prerequisite: CHEM 598. Credit Hours: 1-12

CHEM601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

CHEM699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Chemistry Faculty

Bancroft, Senetta F., Associate Professor, Ph.D., University of Akron, 2014; 2016. Chemical education, science teaching methods, science teacher beliefs, and STEM student persistence in higher education.

Deria, Pravas, Associate Professor, Ph.D., University of Pennsylvania, 2009; 2015. Inorganic chemistry, materials chemistry, synthetic chemistry, spectroscopy of self-assembled materials, chemical and electrochemical catalysis.

Du, Zhihua, Associate Professor, Ph.D., University of Texas Austin, 1997; 2009. Structural biology, NMR and X-ray crystallography, synthetic biology, bioinformatics.

Gao, Yong, Professor, Ph.D., University of Alberta, 1998; 2000. Bio-organic chemistry, medicinal chemistry, biomaterials.

Ge, Qingfeng, Professor, Distinguished Scholar, and Director, Ph.D., Tianjing University, 1991; 2003. Physical/materials chemistry, computational chemistry, surface science, kinetics and catalysis, catalysis for environment and energy.

Goodson, Boyd M., Professor, Distinguished Scholar, and Associate Dean, Ph.D., University of California, Berkeley, 1999; 2002. Structure and dynamics of molecules and proteins, optical/nuclear double resonance, NMR and MRI, quantum computation.

Hou, Yuqing, Research Assistant Professor, Ph.D., Southern Illinois University Carbondale, 1997; 1998.

Kinsel, Gary R., Professor, Ph.D., University of Colorado Boulder, 1989; 2005. Analytical chemistry, MALDI and ESI mass spectrometry, RF plasmapolymers, biomaterials, proteomics, microfluidics, surface analysis.

Kohli, Punit, Professor, Ph.D., Michigan State University, 2000; 2004. Bionanoscience, transport through nanotubes, materials and surface chemistry.

McCarroll, Matthew E., Professor, Ph.D., University of Idaho, 1998; 2000. Analytical, molecular spectroscopy, fluorescence sensors, chiral and molecular recognition, capillary electrophoresis.

Moran, Sean D., Assistant Professor, Ph.D., Columbia University, 2008; 2014. Biophysical chemistry, biomolecular dynamics, and ultrafast infrared spectroscopy.

Plunkett, Kyle, Professor, Ph.D., University of Illinois, 2005; 2010. Organic chemistry, polymers, organic electronic materials, surface chemistry.

Shamsi, Mohtashim H., Associate Professor, Ph.D., University of Toronto, 2012; 2015. Electroanalytical chemistry, biosensors; microfluidics, printing based device fabrication.

Tucker, Sheryl A., Professor and Provost, Analytical Chemistry, Ph.D, University of North Texas, 1994; 2023.

Wang, Lichang, Professor, Ph.D., University of Copenhagen, 1993; 2001. Physical, theoretical/ computational chemistry, transition metal nanoparticles, organic photoelectronic materials, polymers, and biomolecules.

Emeriti Faculty

Bausch, Mark J., Associate Professor, Emeritus, Ph.D., Northwestern University, 1982; 1987.

Davis, Joe M., Professor, Emeritus, Ph.D., University of Utah, 1985; 1987.

Koropchak, John A., Professor, Emeritus, Ph.D., University of Georgia, 1980; 1984.

Koster, David F., Professor, Emeritus, Ph.D., Texas A&M University, 1965; 1967.

Tyrrell, James, Professor, Emeritus, Ph.D., University of Glasgow, 1963; 1967.

Civil and Environmental Engineering

The School of Civil, Environmental, and Infrastructure Engineering offers a Master of Science (M.S.) degree in Civil Engineering and a Master of Engineering degree (M.E.) in Civil and Environmental Engineering.

Master of Science (M.S.) in Civil Engineering

Graduate work leading to the Master of Science degree in Civil Engineering is offered by the School of Civil, Environmental, and Infrastructure Engineering. The program provides advanced study in the areas of structural engineering, environmental engineering, geotechnical engineering, and hydraulic and water resources engineering.

Admission

The School requires that applicants to the M.S. in Civil Engineering program hold a bachelor's degree in civil or environmental engineering (or equivalent), or have completed all undergraduate degree requirements prior to registration, with minimum grade point average (GPA) of 3.0 (*A* = 4.0) on the entire last undergraduate GPA earned at the time of application. Students having a GPA between 2.7 and 3.0 will be considered on a case-by-case basis. A student whose undergraduate training is deficient may be required to take additional coursework without graduate credit. All applicants are required to submit GRE scores in support of their applications for admission (minimum scores: 146 Verbal, 152 Quantitative, 3.5 Analytical Writing). The GRE scores must be less than five years old at the time of registration. Minimum requirements for GRE verbal and analytical writing may be waived if the student's TOEFL score is greater than 570 (test center), 230 (computer based) or 82 (Internet based), or IELTS score of 7.0 or higher, and he/she possesses good communication skills.

Students apply on-line at gradschool.siu.edu/apply. A nonrefundable $65 application fee is required and must be paid by credit card. Applications cannot be processed until the fee is paid.

Requirements

A graduate student in the School is required to develop a program of study with a graduate adviser and establish a graduate committee of at least three members before the end of his/her first semester in the graduate program. Each student majoring in civil engineering may, with the approval of the graduate committee, also take graduate level courses in other branches of engineering or in areas of science and business, such as physics, geology, chemistry, mathematics, life science, administrative sciences, or computer science.

A minimum of 30 hours of acceptable graduate credit is required, including a minimum of three credit hours of CE 599, Thesis. Of this total, eighteen credit hours must be earned in the School. Furthermore, at least 50% of all credit hours must be 500-level and completed at Southern Illinois University Carbondale. Each candidate is also required to pass a comprehensive oral examination covering all of the student's graduate work, including a thesis.

Each student will select a minimum of three engineering graduate faculty members to serve as a graduate committee, subject to the approval of the School Director. The committee will:

1. approve the student's program of study;
2. approve the student's thesis topic;
3. approve the completed thesis;
4. administer and approve the comprehensive oral examination.

Teaching or research assistantships and fellowships are available for qualified applicants. Additional information about the program, courses, assistantships, and fellowships may be obtained from the School or the College of Engineering, Computing, Technology, and Mathematics.

Master of Engineering (M.E.) in Civil and Environmental Engineering

The Master of Engineering degree (M.E.) in Civil and Environmental Engineering is a non-thesis, course only, professional degree designed to provide advanced technical knowledge for professional practice. The program provides advanced study in the areas of structural engineering, environmental engineering, geotechnical engineering, and hydraulic and water resources engineering.

Admission

The School requires that applicants to the M.E. in Civil and Environmental Engineering program hold a bachelor's degree in civil or environmental engineering (or equivalent), or have completed all undergraduate degree requirements prior to registration, with minimum grade point average (GPA) of 3.0 or better (*A* = 4.0) on the entire last undergraduate GPA earned at the time of application. Students having a GPA between 2.7 and 3.0 will be considered on a case-by-case basis. The GRE is not required for students applying to the M.E. in Civil and Environmental Engineering degree program.

Students apply on-line at gradschool.siu.edu/apply. A nonrefundable $65 application fee is required and must be paid by credit card. Applications cannot be processed until the fee is paid.

Requirements

For graduation, the M.E. in Civil and Environmental Engineering student is required to complete 30 credit hours of graduate level courses. Of this, at least 18 credit hours must be earned in the School. Furthermore, at least 15 credit hours must be 500-level and completed at Southern Illinois University Carbondale. Students are required to take CE 593, Civil Engineering Project. However, this requirement is waived if a student takes an additional 500-level course, i.e., at least 18 credit hours of 500-level courses. Students may, with the approval of the School Director, also take graduate level courses in other branches of engineering or in areas of science and business, such as physics, geology, chemistry, mathematics, life science, administrative sciences, or computer science.

The M.E. in Civil and Environmental Engineering program permits students to complete an advanced degree in three semesters (12 credit hours in Fall, 12 credit hours in Spring, six credit hours in Summer). This is a non-research degree; teaching or research assistantships are not available for students pursuing this degree, nor would this be a suitable track to pursue a Ph.D.

Doctor of Philosophy (Ph.D.) in Civil and Environmental Engineering

The School of Civil, Environmental, and Infrastructure Engineering within the College of Engineering, Computing, Technology, and Mathematics at SIUC offers a Doctor of Philosophy degree in Civil and Environmental Engineering. It is designed for students who desire positions requiring advanced preparation at the highest level with emphasis on theories of curriculum and instruction and in-depth preparation in research.

The Ph.D. program is supported by cutting-edge research projects conducted by nationally and internationally recognized Civil, Environmental and Infrastructure Engineering faculty members. The School has well equipped laboratories and computer facilities that are housed in a modern Engineering Complex that houses research laboratories, including facilities for civil engineering materials, a lab that includes concrete, steel, timber and asphalt, soil testing lab including cyclic triaxial and resilient modulus test and SWCC device, fluid mechanics lab, environmental engineering lab, etc.

The Doctor of Philosophy degree in Civil and Environmental Engineering is available for four fields of study that correlate with the School's core expertise. The areas of concentration are as follows:

1. Environmental Engineering
2. Geotechnical Engineering
3. Structural Engineering
4. Water Resources Engineering

Admission

Apply online to SIU. There is a $65 application fee.

Admission to the program requires a Master of Science degree in Civil and Environmental Engineering or a related field with a GPA of 3.25/4.0 or higher. Applications for admission must include the following:

M.S. thesis abstract, a statement of interest, Bachelor and Master degree transcripts, GRE scores, and three letters of recommendation. International applicants should also include a photocopy of the page(s) of your passport showing your name, date of birth, and country of citizenship and a TOEFL score of 550

(paper score) or an IBT score of 80 or an IELTS score of 6.5. Admission to the program is made by the Civil and Environmental Engineering Graduate Committee.

For accelerated entry into the Ph.D. program, a student must complete at least two semesters in residence in an engineering M.S. program and complete a minimum of 18 hours of approved coursework with a minimum GPA of 3.75. Such entry is permitted only to superior students who have exhibited evidence that they are prepared to begin the research activities of doctoral-level study. In addition, the student must have GRE scores that are at or above the 50th percentile for both verbal component and analytical essay component and 80th percentile for the quantitative component or a combined total percentile score of 180 or higher. In case of a domestic student, an undergraduate GPA of 3.5 or higher is also a requirement. For an international student, a TOEFL score of 550 (paper score) or an IBT score of 80 or an IELTS score of 6.5 is an additional requirement. In exceptional cases, to substitute for the abovementioned GRE and TOEFL score requirements, the student's current faculty advisor, with the approval of the department chair, may submit a letter of recommendation for his/her student's accelerated entry into the Ph.D. program. The student, having an accelerated entry into the Ph.D. program, may not write a M.S. Thesis. In addition, 6 credit hours of course work of 500 level completed prior to his/her entry into the Ph.D. program may be counted toward the Ph.D. course requirement. In the rare event that the student getting an accelerated entry into the Ph.D. program fails to pass the Ph.D. qualifying exam in two attempts, he/she will be allowed to complete a MS degree in his/her respective discipline. Admission to the program is made by the Civil and Environmental Engineering Graduate Committee.

Admission to the doctoral program also requires the identification of an initial graduate adviser for each student. This advisor will be responsible with the student for planning the student's course work according to the field of study within Civil and Environmental Engineering described later.

Retention

Any prospective doctoral candidate with a grade point average of less than 3.25 and 20 semester hours of doctoral work will not be allowed to continue in the program and will not be re-admitted at a later date. Students must accumulate an overall grade point average of 3.50 for all doctoral work to qualify to take the qualifying examination.

Prior to the completion of 26 semester hours of course work, students meet with their major professors to determine whether or not to continue as doctoral students. Such matters as grade point average, progress in the program, course completion, motivation, general academic scholarship, and skills in writing and research are considered. A report is then made to the graduate committee and the school director. Students who are not making satisfactory progress or who violate the regulations of the school, college, or university may be dropped from the program.

Curriculum

A minimum of 26 semester hours of course work, including 2 hours of seminar, and 24 semester hours of dissertation research is required. The course work must be completed in 2 areas: area of concentration and program core. A student must complete a minimum of 15 hours of course work relevant to an area of concentration. The course work in the area of concentration is intended to provide depth in the student's area of research. The program core consists of 11 hours of course work. A dissertation must be completed in the student's area of research interest with the approval of the dissertation committee.

Program Core

The program core consists of 11 hours of course work: 6 hours in math, 3 hours in engineering or science and 2 hours of seminar. The math courses to choose from are: all 500 level except MATH 511. The engineering courses to choose from are: ENGR 530— Engineering Data Acquisition: Theory and Practice, ENGR 540— Design of Engineering Experiments, ENGR 545—Advanced Numerical Methods in Engineering, ENGR 521—Probability and Stochastic Processes for Engineers. The science course could be any 500-level course in Computer Science, Physics, Chemistry or Geology, as approved by the student's advisor. The seminar course, ENGR 580, must be taken in two separate semesters, each time as a one-hour course. It is recommended that the seminar classes be taken after the initiation of doctoral research or after candidacy is granted.

Qualifying Examination

Upon completion of the concentration and core courses, the student may take the qualifying examination which has two components: written exam and oral exam. The examination in the area of concentration is organized and administered by at least three Engineering faculty members (examining committee) including the student's advisor. The oral exam, conducted by the examining committee, is held within two weeks of the student receiving the grades from the written exam. If not successful, the committee may allow the student to repeat the whole or part of the examination one more time. The qualifying examination, in whole or in part, cannot be taken more than two times.

Candidacy

A Ph.D. student must satisfy all Graduate School requirements to become a candidate. Admission to candidacy requires: (a) successful completion of the qualifying examination (which satisfies the research tool requirement of the Graduate School) and (b) successful completion of twenty-four hours of credit (which satisfies the residency requirement of the Graduate School).

Acceptance to Ph.D. candidacy is contingent upon the completion of all courses with A or B grades and successful completion of a written and an oral test in the student's field of study. One of the one-hour seminars can be taken after the candidacy.

After the completion of the qualifying examination, copies of the graded tests, along with signoff sheets for both the written and oral examinations are submitted to the director of the Ph.D. program, who is also the Director of the School.

Dissertation

A dissertation must be written under the direction or co-direction of an engineering faculty member and approved by a dissertation committee consisting of at least five members (one outside the College of Engineering, Computing, Technology, and Mathematics). The dissertation adviser must be chosen by the end of the student's first academic year. The dissertation committee should be formed after successful completion of the candidacy examination. The members of this committee need not be the same as the members of the candidacy examination committee. A dissertation research proposal must be approved by the dissertation committee. Candidates will be required to present an acceptable dissertation describing original research performed with minimal supervision. Dissertation approval is based on a successful oral defense of the dissertation research and approval of the dissertation. This requires approval of at least 80 percent of the dissertation committee.

Following the admission to candidacy and upon completion of all the coursework, the candidate will prepare and submit a formal written dissertation proposal, defining the proposed research and the proposed line of inquiry. The candidate subsequently must make an oral presentation of the dissertation proposal to the members of the dissertation committee in an open forum. A public announcement of this event must be made at least five days in advance.

In the framework of the oral presentation of the dissertation proposal, the candidate is expected to address and respond to any question (by the members of the committee) related to material covered by all the courses taken during his doctoral studies or to the background necessary for the specific area of the proposed research. In addition, the candidate is expected to defend the research methodology and the proposed line of inquiry.

The Dissertation must be prepared in accordance to the "Guidelines for Dissertations, Theses and Research Papers" of the SIUC Graduate School. Dissertation approval is based on successful defense of the research performed in terms of originality, relevance and presentation (written and oral). This requires approval by at least 80% of the members of the dissertation committee.

Upon completion of the dissertation, which must demonstrate the ability of the candidate to conduct independent research, the committee will administer the final oral examination. The objective of the final oral examination, conducted in an open forum, will be the defense of the dissertation. Upon satisfactory completion of the dissertation and the final oral examination the committee will recommend the candidate for the doctoral degree.

Graduation Timeline

Although the time to completion of the doctoral program changes from individual to individual, the average completion time is about four years. The following outline shows the steps for completing the program, with links to various forms needed to show completion of the various stages of the program. Forms shown in italics are required by the Graduate School. The other forms are required by the College of Engineering, Computing, Technology, and Mathematics.

1. Admission to the program.
2. Students complete the core and concentration.
3. A candidacy (qualifying) exam committee, comprised of at least three faculty members and chaired by the advisor, is formed (*Candidacy Committee Form*).
4. Student takes the candidacy (qualifying) exam: first the written exam and within two weeks the oral. Advisor reports the exam results to the Director (*Candidacy Exam Results Form*). The advisor sends the form to the Director along with copies of the graded written exam papers. A candidacy request form is then sent to the Graduate School to request candidacy status for the student. The advisor, the student, and the Director sign this form (*Admit to Candidacy Form*).
5. A D. Committee, comprised of at least five faculty members (one of whom is from outside of CEIE), and chaired by the advisor, is formed to guide the student in his/her dissertation research. (*Graduate Faculty Committee Approval Form*).
6. Student defends dissertation. The advisor sends the form to the Director along with a copy of the proposal (Dissertation Proposal Approval Form).
7. Student defends dissertation (*Oral Defense Form*). The Dissertation Approval Form is to be completed and deposited at the Graduate School (*Dissertation Approval Form*, to be printed on 25 % cotton paper). A copy of this form must be filed at the School. The dissertation is to be submitted to the Graduate School electronically in pdf format. For spring, summer, and winter graduation dates and deadlines, check the Graduate School website.

Suggested Coursework for the Different Fields of Study

The Doctor of Philosophy degree in Civil and Environmental Engineering is available for four fields of study that correlate with the School's core expertise. The fields of study are as follows:

1. Environmental Engineering
2. Geotechnical Engineering
3. Structural Engineering
4. Water Resources Engineering

The selection of field of study courses is listed below.

Environmental Engineering

Recommended Courses

- CE 510-3 Hazardous Waste Engineering
- CE 511-3 Nanotechnology and Subsurface Remediation
- CE 512-3 Contaminant Fate, Transport and Remediation in Groundwater
- CE 514-3 Environmental Engineering Chemistry
- CE 516-3 Surface Water Quality Modeling
- CE 517-3 Industrial Waste Treatment
- CE 518-3 Advanced Biological Treatment Processes
- CE 519-3 Triple E Sustainability - Environment Energy and Economy
- CE 592C - 1 to 5 Special Investigations in Civil Engineering

This is only a partial list and students may take classes fromother departments to meet graduation requirements with the approval of their advisor and the CEIE Director.

Geotechnical Engineering

Recommended Courses

- CE 520-3 Advanced Soil Mechanics
- CE 521-3 Soil Improvement
- CE 522-3 Advanced Foundation Engineering
- CE 523-3 Soil Dynamics
- CE 524-3 Advanced Soil Testing
- CE 525-3 Foundations for Dynamic Loads
- CE 526-3 Seepage and Slope Stability Analysis

This is only a partial list and students may take classes from other departments to meet graduation requirements with the approval of their advisor and the CEIE Director.

Structural Engineering

Recommended Courses

- CE 530-3 Advances in Materials and Testing
- CE 540-3 Structural Dynamics
- CE 542-3 Nonlinear Structural Analysis
- CE 544-3 Advanced Design of Reinforced Concrete
- CE 545-3 Advanced Steel Design
- CE 551-3 Introduction to Finite Elements in Engineering Applications (Same as Mechanical Engineering 565).
- CE 552-3 Theory of Elasticity
- CE 553-3 Theory of Plasticity (Same as Mechanical Engineering 513)
- CE 554-3 Experimental Mechanics
- CE 556-3 Theory of Laminate Composite Structures
- CE 557-3 Advanced Mechanics of Materials (Same as Mechanical Engineering 566)
- CE 558-3 Reliability in Engineering Applications.
- Review of linear algebra, SVD, eigenvalue problems. Review of probability theory and statistics

This is only a partial list and students may take classes from other departments to meet graduation requirements with the approval of their advisor and the CEIE Director.

Water Resources Engineering

Recommended Courses

- CE 566-3 GIS in Civil, Environmental and Infrastructure Engineering
- CE 570-3 Sedimentation Engineering
- CE 571-3 Water Resources Systems Engineering and Management
- CE 572-3 Advanced Hydraulic Design
- CE 573-3 Modeling of Hydrosystems
- CE 592B-1 to 5 Special Investigations in Civil Engineering

This is only a partial list and students may take classes from other departments to meet graduation requirements with the approval of their advisor and the CEIE Director.

Civil and Environmental Engineering Courses

CE410 - Hazardous Waste Engineering Analysis of hazardous waste generation, storage, shipping, treatment, and disposal. Source reduction methods. Government regulations. Remedial action. Prerequisite: CE 310. Credit Hours: 3

CE413 - Collection Systems Design Design of waste water and storm water collection systems including installation of buried pipes. Determination of design loads and flows, system layout and pipe size. Prerequisite: CE 310 and ENGR 370A or ENGR 370C. Credit Hours: 3

CE418 - Water and Wastewater Treatment A study of the theory and design of water and wastewater treatment systems, including physical, chemical, and biological processes. Topics include sedimentation, biological treatment, hardness removal, filtration, chlorination and residuals management. Prerequisite: CE 310, ENGR 370A or ENGR 370C, and completion of or concurrent enrollment in ENGR 351. Credit Hours: 3

CE419 - Advanced Water and Wastewater Treatment Advanced concepts in the analysis and design of water and wastewater treatment plants. Topics include advanced physical, chemical, and biological processes. Emphasis is on the treatment and disposal of sludges, design of facilities, advanced treatment principles, and toxics removal. Prerequisite: CE 418 and ENGR 351. Credit Hours: 3

CE421 - Foundation Design Application of soil mechanics to the design of the foundations of structures; subsurface exploration; bearing capacity and settlement analysis of shallow foundations; lateral earth pressures and design of retaining walls; capacity and settlement of pile foundations for vertical axial loads. Prerequisite: CE 320. Credit Hours: 3

CE422 - Environmental Geotechnology Geotechnical aspects of land disposal of solid waste and remediation, solute transport in saturated soils, waste characterization and soil-waste interaction, engineering properties of municipal wastes, construction quality control of liners, slope stability and settlement considerations, use of geosynthetics and geotextiles, cap design, gas generation, migration and management. Prerequisite: CE 310 and CE 320. Credit Hours: 3

CE423 - Geotechnical Engineering in Professional Practice Application of principles of geotechnical engineering in a real-world setting; planning, managing and executing geotechnical projects; developing proposals and geotechnical project reports; interpreting and using recommendations developed by geotechnical engineers; total quality management, professional liability and risk management. Prerequisite: CE 320, completion of or concurrent enrollment in CE 421 or consent of instructor for graduate students. Credit Hours: 3

CE426 - Seepage and Slope Stability Analysis Seepage through soils; numerical and physical modeling of two-dimensional flow; basic mechanism of slope stability analysis; analytical methods in analyzing slopes; slope stabilization. Prerequisite: CE 320. Credit Hours: 3

CE431 - Pavement Design Design of highway pavements including subgrades, subbases, and bases; soil stabilization; stresses in pavements; design of flexible and rigid pavements; cost analysis and pavement selection; and pavement evaluation and rehabilitation. Prerequisite: CE 320 and CE 330. Credit Hours: 3

CE432 - Computer Aided Design and Drawing (CADD) for Civil Engineers A study of civil engineering drawings and their relationship to engineering design in the CADD environment. Emphasis is on the skills associated with developing and understanding technical drawings, including construction plans and related documents, for engineering design. Computer based design and drawing techniques and related software. Includes 3 hours lab per week. Prerequisite: Completion of or concurrent enrollment in CE 263. Credit Hours: 3

CE440 - Statically Indeterminate Structures Analysis of trusses, beams, and frames. Approximate methods. Method of consistent deformations. Three-moment theorem. Slope deflection. Moment distribution. Column analogy. Plastic analysis. Matrix methods. Prerequisite: CE 340. Credit Hours: 3

CE441 - Matrix Methods of Structural Analysis Flexibility method and stiffness method applied to framed structures. Introduction to finite elements. Prerequisite: CE 340. Credit Hours: 3

CE442 - Structural Steel Design An introduction to structural steel design with an emphasis on buildings. Design of structural members and typical welded and bolted connections in accordance with the specifications of the Steel Construction Manual of the American Institute of Steel Construction (AISC). Design project and report required. Prerequisite: CE 340. Credit Hours: 3

CE444 - Reinforced Concrete Design Behavior and strength design of reinforced concrete beams, slabs, compression members, and footings. Prerequisite: CE 340. Credit Hours: 3

CE445 - Fundamental Theory of Earthquake Engineering The nature and mechanics of earthquakes. Plate tectonics, types of faulting, recording and measuring ground motion. Analysis of free and forced

vibration of a single degree of freedom system. Steady state and transient response. Impulse response function. Dynamic amplification and resonance. Response to ground motion. Response spectrum analysis. Prerequisite: CE 320 and CE 340, or consent of instructor for graduate students. Credit Hours: 3

CE446 - Prestressed Concrete Design Fundamental concepts of analysis and design. Materials. Flexure, shear, and torsions. Deflections. Prestress losses. Composite beams. Indeterminate structures. Slabs. Bridges. Prerequisite: Completion of or concurrent enrollment in CE 444 or consent of the instructor for graduate students. Credit Hours: 3

CE447 - Seismic Design of Structures Basic seismology, earthquake characteristics and effects of earthquakes on structures, vibration and diaphragm theories, seismic provisions of the International Building Code, general structural design and seismic resistant concrete and steel structures. Prerequisite: CE 442 or CE 444, or consent of instructor for graduate students. Credit Hours: 3

CE448 - Structural Design of Highway Bridges Structural design of highway bridges in accordance with the specifications of the American Association of State Highway and Transportation Officials (AASHTO); superstructure includes concrete decks, steel girders, prestressed and post-tensioned concrete girders; substructure includes abutments, wingwalls, piers, and footings. Prerequisite: CE 442 or CE 444, or consent of instructor for graduate students. Credit Hours: 3

CE471 - Groundwater Hydrology Analysis of groundwater flow and the transport of pollution by subsurface flow; applications to the design of production wells and remediation of polluted areas; finite difference methods for subsurface analyses. Prerequisite: ENGR 370A or ENGR 370C or consent of instructor for graduate students. Credit Hours: 3

CE472 - Open Channel Hydraulics Open channel flow, energy and momentum, design of channels, gradually varied flow computations, practical problems, spatially varied flow, rapidly varied flow, unsteady flow, flood routing, method of characteristics. Prerequisite: CE 474 or consent of instructor for graduate students. Credit Hours: 3

CE473 - Hydrologic Analysis and Design Hydrological cycle, stream-flow analysis, hydrograph generation, frequency analysis, flood routing, watershed analysis, urban hydrology, flood plain analysis. Application of hydrology to the design of small dams, spillways, drainage systems. Prerequisite: ENGR 370A or ENGR 370C or consent of instructor for graduate students. Credit Hours: 3

CE474 - Water Resources Engineering Hydrological Cycle, Flow Estimation, Study of pipe flow, network systems, pump selection, open channel flow, uniform flow, critical flow, gradually varied flow, rapidly varied flow, Introduction to HEC-RAS, design of transitions, water surface profiles. Prerequisite: ENGR 370A or ENGR 370C or consent of instructor for graduate students. Credit Hours: 3

CE486 - Nondestructive Evaluation of Engineering Materials (Same as ME 486) Overview of common nondestructive evaluation (NDE) techniques, such as visual inspection, eddy current, X-ray, and ultrasonics, to measure physical characteristics of and to detect defects in engineering materials. Laboratory experiments include contact ultrasonic, magnetic particle, liquid penetrant, and infrared thermography methods of testing. Prerequisites: CE 320 and CE 330 with grades of C or better. Credit Hours: 3

CE500 - Seminar Collective and/or individual study of selected issues and problems relating to various areas of civil engineering. Restricted to graduate standing. Credit Hours: 1-4

CE510 - Hazardous Waste Engineering Analysis of hazardous waste generation, storage, shipping, treatment, and disposal. Source reduction methods. Government regulations. Remedial action. Design projects and presentation required. Students who have taken CE 410 are ineligible to enroll. Prerequisite: Graduate standing in the program or consent of instructor. Credit Hours: 3

CE511 - Nanotechnology and Subsurface Remediation Conventional and emerging nanotechnology-based remediation technologies for subsurface environment; review of current soil and groundwater remediation technologies; sediment remediation, nano-synthesis, characterization and nanotechnology-driven remediation technologies and materials. Special approval needed from the instructor. Credit Hours: 3

CE512 - Contaminant Fate, Transport and Remediation in Groundwater Mathematics of flow and mass transport in the saturated and vadose zones; retardation and attenuation of dissolved solutes; flow of nonaqueous phase liquids; review of groundwater remediation technologies; review of flow and transport models; modeling project. Students who have taken CE 412 are ineligible to enroll. Special approval needed from the instructor. Credit Hours: 3

CE514 - Environmental Engineering Chemistry Fundamentals as well as frontiers in aquatic chemistry, environmental organic chemistry, and environmental biochemistry. Topics include thermodynamics and kinetics of redox reactions, linear free energy relations, abiotic organic compound transformations, stoichiometry, energetics and kinetics of microbial reactions, biochemical basis of the transformation of key organic and inorganic pollutants in the environment. Prerequisite: CE 418 or consent of instructor. Credit Hours: 3

CE516 - Surface Water Quality Modeling Quantification of physical, biological, and chemical processes occurring in natural freshwater ecosystems. Mathematical analysis of the effects due to conservative and non-conservative pollutant loadings to lakes and rivers. Detailed study of dissolved oxygen mass balance modeling and eutrophication. Design projects and presentation required. Students who have taken CE 416 are ineligible to enroll. Restricted to graduate standing in the program or consent of instructor. Credit Hours: 3

CE517 - Industrial Waste Treatment Theories and methods of treating industrial wastes. Case studies of major industrial waste problems and their solutions. Prerequisite: CE 418. Credit Hours: 3

CE518 - Advanced Biological Treatment Processes The biochemical and microbial aspects of converting substrate to bacterial cell mass or products and its use in various phases of industry (both fermentation and wastewater treatment). Design of activated sludge and trickling filter plants from lab data obtained on explicit wastes from both industry and municipalities. Prerequisite: CE 418. Credit Hours: 3

CE519 - Triple E Sustainability - Environment Energy and Economy Principles, goals, and practical applications of sustainable development; major theories and issues related to sustainability in the areas of environmental resource use, energy production, and process life cycle analysis; identify and design sustainable approaches on common areas of interest to the society, such as buildings, transportation, food, industry processes, and ecology. Special approval needed from the instructor. Credit Hours: 3

CE520 - Advanced Soil Mechanics Advanced theories in soil mechanics, stress distribution in soils, seepage, consolidation, shear strength, settlement analysis and stability of slopes. Prerequisite: CE 320, ENGR 350A,B, CE 421 or concurrent enrollment. Credit Hours: 3

CE521 - Soil Improvement Methods of soil stabilization, compaction, dynamic compaction, chemical treatment, compaction piling, stone columns, dewatering, soil reinforcement with stirrups, geomembranes and geogrids, ground freezing, stabilization of industrial wastes. Prerequisite: CE 320, CE 421. Credit Hours: 3

CE522 - Advanced Foundation Engineering Case histories of foundation failure, bearing capacity theories, shallow foundations, deep foundations, piles under vertical and horizontal loads, pier foundations, foundations for difficult soil conditions, soil improvement. Prerequisite: CE 421. Credit Hours: 3

CE523 - Soil Dynamics Problems in dynamic loading of soils, dynamic soil properties, liquefaction, dynamic earth pressure, foundations for earthquake and other dynamic loads. Prerequisite: CE 320 and CE 421. Credit Hours: 3

CE524 - Advanced Soil Testing Review of basic laboratory tests on soils, hands-on training for performing advanced laboratory tests on soils such as: triaxial compression, flexible wall permeability, one-dimensional consolidation, and California bearing ratio, understanding ASTM standards, sample preparation, data reduction and interpretation, and development of detailed laboratory test reports. Prerequisite: CE 421, or consent of instructor. Credit Hours: 3

CE525 - Foundations for Dynamic Loads Dynamic loads due to natural and man-made phenomena, damage to humans and the environment, property loss, analytical models for response analysis of foundation-soil systems for steady state, seismic and impact loads, design criteria, determination of soil

properties, stiffness and damping of foundation-soil systems, design of shallow and deep foundations for various types of dynamic loads, computer applications, case histories of damage. Prerequisite: CE 421 and CE 445 or consent of instructor. Credit Hours: 3

CE526 - Seepage and Slope Stability Analysis Seepage through soils; numerical and physical modeling of two-dimensional flow; basic mechanism of slope stability analysis; analytical methods in analyzing slopes; slope stabilization. Additional project and presentation required for students taking this course instead of CE 426. Students who have taken CE 426 are ineligible to enroll. Prerequisite: CE 320 or consent of instructor. Credit Hours: 3

CE530 - Advances in Materials and Testing An introduction to advances in concrete technology; High strength concrete; Light-weight concrete; Cement and polymer composites; and Non-destructive testing. Fundamental concepts, manufacture, performance, testing, design methodology and applications. Prerequisite: CE 330 or equivalent or consent of instructor. Credit Hours: 3

CE540 - Structural Dynamics Analysis of the dynamic response of multidegree-of-freedom framed structures. Structural idealizations. Matrix formulation. Lagrange's equations. Response calculation by mode-superposition and direct integration methods. Analysis for earthquakes. Prerequisite: CE 340 or consent of instructor. Credit Hours: 3

CE542 - Nonlinear Structural Analysis Analysis of the nonlinear response of framed structures subjected to static and dynamic loads. Structural idealizations. Response calculation by incremental and iterative techniques. Instability phenomena of snap-through and bifurcation. Post-buckling behavior. Approximate formulations. Detection of instability under dynamic loads. Prerequisite: CE 441 or CE 551 or consent of instructor. Credit Hours: 3

CE544 - Advanced Design of Reinforced Concrete Deep beams, shear friction. Slab, beam, girder systems. Monolithic joints. Retaining walls. Deflections. Length effects on columns. Two-way floor systems. Yield line theory. Torsion. Seismic design. Prerequisite: CE 444. Credit Hours: 3

CE545 - Advanced Steel Design Economical use of high strength steel; behavior and design bolted and welded building connections, plate girders and composite steel-concrete beams; brittle fracture and fatigue; and low-rise and industrial-type buildings. Prerequisite: CE 442. Credit Hours: 3

CE551 - Introduction to Finite Elements in Engineering Applications (Same as ME 565) An introduction to finite element techniques and computer methods in finite element applications. Theory and structure of algorithms for one-dimensional and multi-dimensional problems. Applications in solid mechanics, structural analysis, groundwater and fluid flow, and heat transfer, projects and presentations. Students who have taken CE 451 are ineligible to enroll. Prerequisite: ENGR 351 or consent of instructor. Credit Hours: 3

CE552 - Theory of Elasticity Stress and strain equations of elasticity; equilibrium equations; compatibility equations; stress functions; applications of elasticity in solving engineering problems in two and three dimensions. Prerequisite: ENGR 350A,B and MATH 305. Credit Hours: 3

CE553 - Theory of Plasticity (Same as ME 513) Criteria for onset of yielding, isotropic and kinematic strain hardening; flow rules for plastic strains; elastic plastic bending and torsion, slip line field theory; plane stress problems; limit analysis. Prerequisite: ENGR 350A,B and MATH 305 or consent of instructor. Credit Hours: 3

CE554 - Experimental Mechanics An introduction of various experimental techniques that are commonly used to determine properties such as deformation, straining, surface contour, etc. The topics to be covered include the principles of strain gage technology, theory of photoelasticity, piezoelectric accelerometer, laser based interferometry, image processing and analysis, and reverse mechanics. The specific areas of practical application for each type of experimentation will be discussed. Prerequisite: ENGR 350A,B. Credit Hours: 3

CE556 - Theory of Laminate Composite Structures Orthotropic and Anisotropic Materials, Laminated Plate Theory, Ritz Method, Galerkin's Method, bending, buckling and vibration of laminated structures. Prerequisite: ENGR 350A,B and MATH 251. Credit Hours: 3

CE557 - Advanced Mechanics of Materials (Same as ME 566) Advanced topics in mechanics of materials including: elasticity equations; torsion of non-circular sections; generalized bending including curved beams and elastic foundations; shear centers; failure criteria including yielding, fracture and fatigue; axisymmetric problems including both thick and thin walled bodies; contact stresses; and stress concentration. Prerequisite: ENGR 350A,B. Credit Hours: 3

CE558 - Reliability in Engineering Applications An overview of principles and methods for quantifying the uncertainty in planning, design, testing and operation of engineering systems. Topics include probability theory, random variables, multivariate distributions, regression and correlation analyses, Monte Carlo simulations, and Bayesian approaches. Concepts are illustrated with examples from various areas of engineering, with particular emphasis on civil engineering applications. Prerequisite: ENGR 351 or consent of instructor. Credit Hours: 3

CE566 - GIS in Civil, Environmental and Infrastructure Engineering An introduction to fundamental principles of geographic information systems (GIS) as they apply to Civil, Environmental and Infrastructure Engineering. Spatial data acquisition, mapping of civil and land features, terrain analysis, map projections, and visualization of spatial data. Application of a leading GIS software in the creation of GIS spatial data bases to address problems in hydrology, environmental control, landfill site selection, land development and transportation with an emphasis on engineering design. Methods of spatial interpolation, develop spatial patterns for environmental data and estimate the values at an unsampled location. Project to perform spatial analysis. Prerequisite: ENGR 351 or consent of the instructor. Credit Hours: 3

CE570 - Sedimentation Engineering Introduction to the transport of granular sediment by moving fluids; analysis of regional degradation, aggradation and local scour in alluvial channels; investigation of sediment sources, yield and control. Prerequisite: CE 474 or consent of instructor. Credit Hours: 3

CE571 - Water Resources Systems Engineering and Management Philosophy of water resources planning; economic, social and engineering interactions related to water quantity; quantitative optimal planning methodologies for the design and operation of hydrosystems; guest lecturers; projects/case studies. Prerequisite: CE 474 or consent of instructor. Credit Hours: 3

CE572 - Advanced Hydraulic Design Design and analysis of stormwater control and conveyance systems, dams, spillways, outlet works, stilling basins, culverts and other complex hydraulic systems. Prerequisite: CE 474 or consent of instructor. Credit Hours: 3

CE573 - Modeling of Hydrosystems Hydraulic and hydrologic modeling; theory and application of common surface and subsurface flow models such as HEC-RAS, HEC-6, FLDWAV, DAMBRK, MODFLOW and MODPATH. Prerequisite: CE 474 or consent of instructor. Credit Hours: 3

CE592A - Special Investigations in Civil Engineering Advanced Civil Engineering Topics and/or problems in Structural Engineering. Restricted to graduate standing. Special approval needed from the instructor. Credit Hours: 1-5

CE592B - Special Investigations in Civil Engineering Advanced Civil Engineering Topics and/or problems in Hydraulic Engineering. Restricted to graduate standing. Special approval needed from the instructor. Credit Hours: 1-5

CE592C - Special Investigations in Civil Engineering Advanced Civil Engineering Topics and/or problems in Environmental Engineering. Restricted to graduate standing. Special approval needed from the instructor. Credit Hours: 1-5

CE592D - Special Investigations in Civil Engineering Advanced Civil Engineering Topics and/or problems in Geotechnical Engineering. Restricted to graduate standing. Special approval needed from the instructor. Credit Hours: 1-5

CE592E - Special Investigations in Civil Engineering Advanced Civil Engineering Topics and/or problems in Fluid Flow Analysis. Restricted to graduate standing. Special approval needed from the instructor. Credit Hours: 1-5

CE592F - Special Investigations in Civil Engineering Advanced Civil Engineering Topics and/or problems in Computational Mechanics. Restricted to graduate standing. Special approval needed from the instructor. Credit Hours: 1-5

CE592G - Special Investigations in Civil Engineering Advanced Civil Engineering Topics and/or problems in Composite Materials. Restricted to graduate standing. Special approval needed from the instructor. Credit Hours: 1-5

CE592H - Special Investigations in Civil Engineering Advanced Civil Engineering Topics and/or problems in Stress Analysis. Restricted to graduate standing. Special approval needed from the instructor. Credit Hours: 1-5

CE593 - Civil Engineering Project Advanced project on topics such as case studies, engineering design, testing and analysis methods, computer modeling, or any other topic focusing on engineering practice. Detailed project report is required. Restricted to graduate standing. Special approval needed from the instructor. Credit Hours: 3

CE599 - Thesis Credit Hours: 1-6

CE601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Civil and Environmental Engineering Faculty

Delanka-Pedige, Himali, Assistant Professor, Civil Engineering, Ph.D., New Mexico State University, 2021; 2024, Environmental Engineering, water and wastewater treatment, organic micropollutant, biological treatment, algae-based wastewater treatment, water quality characterization, resources recovery, sustainability assessment, process modeling.

Fakhraei, Habibollah, Assistant Professor, Civil Engineering, Ph.D., Syracuse University, 2016; 2019. Environmental engineering, environmental modeling, biogeochemistry, aquatic chemistry, water quality modeling, air pollution effects, GIS, geostatistical analysis, hydrology, numerical optimization.

Kalra, Ajay, Associate Professor, Civil Engineering, Ph.D., University of Nevada, 2011; 2015. Hydraulics and water resources engineering, hydro-climatology, urban sustainability, water-energy-climate nexus, probabilistic forecasting and downscaling, surface water and groundwater interactions.

Kolay, Prabir, Professor and Director, Civil Engineering, Ph.D., Indian Institute of Technology, IIT Bombay, 2001; 2010. Geotechnical engineering, soil stabilization, utilization of recycled concrete aggregate (RCA) and coal ash, unsaturated soil, thermal properties of soil, and numerical modeling.

Liu, Jia, Associate Professor, Civil Engineering, Ph.D., University of Houston, 2014; 2015. Environmental engineering, renewable energy production, microbial fuel cell, water/wastewater treatment and groundwater/soil remediation, material development for energy safety and environmental pollution detection.

Sen, Debarshi, Assistant Professor, Civil Engineering, Ph.D., Rice University, 2018; 2022. Structural dynamic systems, infrastructure monitoring and resilience, applications of statistical and machine learning in monitoring, regional fragility assessment, seismic response control.

Shin, Sangmin, Assistant Professor, Civil Engineering, Ph.D., Korea Advanced Institute of Science and Technology (KAIST), 2015; 2021. Integrated water resources engineering, cyber-physical systems, hydroinformatics, socio-environmental hydrology, system resilience and sustainability, water-energy-food nexus, systems thinking and optimization.

Tezcan, Jale, Professor, Civil Engineering, Ph.D., Rice University, 2005; 2005. Non-linear structural behavior, neural networks in system identification and structural control, rehabilitation, and retrofitting of structures damaged by earthquakes.

Tiwari, Nitin, Assistant Professor, Civil Engineering, Ph.D., Indian Institute of Technology (IIT) Indore , 2021; 2024. Sustainable and resilient infrastructure, impact of climate change on geoinfra, problematic

soils, biogeotechnics, AI-driven, twin IoT-enabled real time monitoring, data-driven decision making (DDDM), application of 3D Printing, numerical methods in geotechnical engineering, underground structures.

Emeriti Faculty

Bravo, Rolando, Associate Professor, Emeritus, Civil Engineering, Ph.D., University of Houston, 1990; 1991.

Butson, Gary J., Associate Professor, Emeritus, Civil Engineering, Ph.D., University of Illinois at Urbana-Champaign, 1981; 1992.

Chevalier, Lizette R., Professor, Emerita, Civil Engineering, Ph.D., Michigan State University, 1994; 1995.

Cook, Echol E., Professor, Emeritus, Civil Engineering, Ph.D., Oklahoma State University, 1970; 1971.

DeVantier, Bruce A., Associate Professor, Emeritus, Civil Engineering, Ph.D., University of California-Davis, 1983; 1983.

Evers, James L., Associate Professor, Emeritus, Civil Engineering, Ph.D., University of Alabama, 1969; 1969.

Frank, Roy R., Jr., Assistant Professor, Emeritus, Civil Engineering, M.S., Southern Illinois University Carbondale, 1983; 1984.

Hsiao, J. Kent, Professor, Emeritus, Civil Engineering, Ph.D., University of Utah — Salt Lake City, 2000; 2001.

Kassimali, Aslam, Professor and Distinguished Teacher, Emeritus, Civil Engineering, Ph.D., University of Missouri, 1976; 1980.

Kumar, Sanjeev, Professor and Distinguished Teacher, Emeritus, Civil Engineering, Ph.D., University of Missouri Rolla, 1996; 1998.

Puri, Vijay K., Professor, Emeritus, Civil Engineering, Ph.D., University of Missouri-Rolla, 1984; 1986.

Ray, Bill T., Associate Professor, Emeritus, Civil Engineering, Ph.D., University of Missouri-Rolla, 1984; 1985.

Rubayi, Najim, Professor, Emeritus, Civil Engineering, Ph.D., University of Wisconsin, 1966; 1966.

Sami, Sedat, Professor, Emeritus, Civil Engineering, Ph.D., University of Iowa, 1966; 1966.

Warwick, John J., Professor, Emeritus, Civil Engineering, Ph.D., The Pennsylvania State University, 1983; 2011.

Yen, Max Shing-Chung, Professor, Emeritus, Civil Engineering, Ph.D., Virginia Polytechnic Institute, 1984; 1984.

Communication Disorders and Sciences

The Communication Disorders and Sciences (CDS) program offers graduate work leading to the Master of Science degree. The program is designed to develop competence in the assessment and treatment of persons with communication disorders.

The degree requires 63-71 credit hours of study, depending on the students' course of study. Students have the option of a comprehensive exam or a thesis. Coursework is planned to meet the academic and professional requirements for state and national certification, which are required for professional employment. These requirements comprise the minimum course work. The M.S. in Communication Disorders and Sciences degree program will culminate in eligibility for the Certificate of Clinical Competence of the American Speech-Language-Hearing Association and state licensure. ASHA certification is required for work in agencies, hospitals, medical centers, and higher education. Students may take additional course work to qualify them for the program. The School of Health Sciences maintains active research facilities which provide laboratories and specialized equipment for the study of both the normal and impaired functions of the speech, language, and hearing processes. Students

may be required to purchase and develop an account within a clinical management system for clinical placements.

Communication Disorders and Sciences is a competitive admissions program.

Competitive Admission Process – Communication Disorders and Sciences Graduate Program: SIUC Undergraduate GPA of 3.5 or higher at the end of Fall Semester prior to graduation, offered admission.

Standard admission criteria:

1. GPA of 2.7 or better (A=4.00) on the entire last undergraduate GPA earned at the time of application as indicated by the SIUC Graduate School - requests for exception to the 2.7 GPA may be possible if admissions committee identifies additional strengths such as trending positive GPA, strong GPA in communication disorders and sciences courses, or other than academic experiences that strengthen a packet.
2. GRE is not required, but is optional, for students applying to the CDS program.
3. Students write a personal statement that is reviewed by the admissions committee members.
4. Students complete a resume portion of the online application through communication sciences and disorders application system (CSDCAS).
5. Students supply a minimum of three reference letters through CSDCAS.

Master of Science (M.S.) in Communication Disorders and Sciences

The M.S. in Communication Disorders and Sciences degree is a six semester course of study of approximately 63 to 71 credit hours. Specific course requirements and total number of hours are generally determined by advisement after consultation with the graduate student. The M.S. in Communication Disorders and Sciences degree also requires that each student either successfully pass a comprehensive examination or successfully complete an approved thesis. Students must select one of the following plans:

Thesis Option

Required Core Courses (29 CH)

- **Speech** (12 CH)
  - CDS 505: Phonological Development & Disorders (3 CH)
  - CDS 510: Stuttering: Behavior Assessment and Therapy (3 CH)
  - CDS 512: Voice Disorders (3 CH)
  - CDS 541: Neurogenic Disorders of Communication II (3 CH)
- **Language** (9 CH)
  - CDS 507: Language Disorders (3 CH)
  - CDS 517: Conceptual and Clinical Considerations for Working with Individuals with Complex Communicartion Needs (3 CH)
  - CDS 540: Neurogenic Disorders of Communication I (3 CH)
- **Speech or Language** (6 CH)
  - CDS 585: Special Topics (Counseling) (3 CH)
  - CDS 585: Special Topics (Medical Speech) (3 CH)
- **Speech, Language or Hearing** (2 CH)
  - CDS 585: Special Topics (Advanced Aural Rehabilitation) (2 CH)
  - Optional Electives: CDS 408, CDS 450, CDS 460, CDS 590

Required Clinical Courses (30-33 CH)

*varies depending on selection of CDS 598 or CDS 597

- CSD 494 (1 CH)
- CDS 594 (A) (3 CH), CDS 594 (B) (3 CH), CDS 594 (C) (2 CH)
- CDS 598: Internship Communication Disorders (9 CH)

- CDS 598: Internship Communication Disorders (9 CH) -OR-
- CDS 597: Public School Practicum (12 CH)
- CDS 595 (1 CH), CDS 595 (1 CH), CDS 595 (1 CH)

Required Research Tools (3 CH)

- CDS 500: Research Design in Speech Pathology & Audiology (3 CH)

Thesis (3 CH)

- 3 credit hours from CDS 599

Total: 65-68 Credit Hours

Comprehensive Examination Option

Required Core Courses (29 CH)

- **Speech** (12 CH)
  - CDS 505: Phonological Development & Disorders (3 CH)
  - CDS 510: Stuttering: Behavior Assessment and Therapy (3 CH)
  - CDS 512: Voice Disorders (3 CH)
  - CDS 541: Neurogenic Disorders of Communication II (3 CH)
- **Language (9 CH)**
  - CDS 507: Language Disorders (3 CH)
  - CDS 517: Conceptual and Clinical Considerations for Working with Individuals with Complex Communicartion Needs (3 CH)
  - CDS 540: Neurogenics Disorders of Communication I (3 CH)
- **Speech or Language** (6 CH)
  - CDS 585: Special Topics (Counseling) (3 CH)
  - CDS 585: Special Topics (Medical Speech) (3 CH)
- **Speech, Language, or Hearing** (2 CH)
  - CDS 585: (Advanced Aural Rehabilitation) (2 CH)
  - Optional Electives: CDS 408, CDS 450, CDS 460, CDS 590,

Required Clinical Courses (30-33 CH)*

*varies depending on selection of CDS 598 or CDS 597

- CSD 494 (1 CH)
- CDS 594 (A) (3 CH), CDS 594 (B) (3 CH), CDS 594 (C) (2 CH)
- CDS 598: Internship Communication Disorders (9 CH)
- CDS 598: Internship Communication Disorders (9 CH) -OR-
- CDS 597: Public School Practicum (12 CH)
- CDS 595 (1 CH), CDS 595 (1 CH), CDS 595 (1 CH)

Required Research Tools (3 CH)

- CDS 500: Research Design in Speech Pathology & Audiology (3 CH)

Comprehensive Exam (1 CH)

- 1 credit hour from CDS 593

Total: 63-66 Credit Hours

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Academic Standing

The graduate student whose overall graduate grade point average (GGPA) falls below 3.0 shall be placed on academic probation by the Graduate School. Students are restricted from clinical experiences while on academic probation. The time limit for being removed from probationary status shall be maximum of two consecutive regular semesters. If at this time the student's overall GGPA is not at least 3.0, the student's enrollment will be terminated. In addition, students whose semester GGPA falls below 3.0 for two consecutive regular semesters, will be terminated from the program. Grades of "*C*" or below are considered failing grades in the CDS graduate program.

Communication Disorders and Sciences Courses

CDS408 - Global Seminar: Health Partnerships in Craniofacial, Hearing, and Neurogenic? Disorders Development of cleft palate and related anomalies that cause communication disorders. Assessment and intervention of the communication disorders related to these impairments. Prerequisite: CDS 314 with a grade of B or better or equivalent. Graded P/F only. Credit Hours: 3

CDS410 - Multicultural Aspects of Communication Disorders Students will explore different cultures and communication within these cultures. Emphasis will be placed on the relationship between cultural differences and communication disorders. Review of speech and language disorders in multicultural populations, as well as assessment and intervention strategies for use with this diverse group will be provided. Prerequisite: CDS 302, 303 or consent of instructor. Credit Hours: 3

CDS420 - Introduction to Audiological Disorders and Evaluation Bases of professional field of audiology (orientation, anatomy, and physiology of the auditory system), major disease processes influencing hearing and their manifestations, measurement of hearing loss. Prerequisite: CDS 301 and 314. Credit Hours: 3

CDS422 - Communication Problems of the Hearing Impaired Objectives and techniques for the teaching of lip reading, speech conservation, and auditory training. Prerequisite: CDS 302, 303, and 420 or equivalents. Special approval needed from the instructor. Credit Hours: 3

CDS450 - Neuroanatomical Basis of Human Communication Examination of the central nervous system (brain and spinal cord) as it relates to normal and disordered human communication. Presentation of basic neuroanatomy, common neuropathologies relevant to communication disorders, and strategies in neurogenic problem solving. Prerequisite: CDS 314 or consent of instructor. Credit Hours: 3

CDS460 - Augmentative and Alternative Communication Systems An introduction to alternative and augmentative communication systems for non-vocal clients. Discussions include: use of aided and unaided augmentative systems, assessment procedures and training. Prerequisite: CDS 301 or consent of instructor. Credit Hours: 3

CDS491 - Individual Study Activities involved shall be investigative, creative, or clinical in character. Must be arranged in advance with the instructor, with consent of the chair. Special approval needed from the chair. Credit Hours: 1-9

CDS492 - Diagnostic Procedures in Communication Disorders A course devoted to discussion of the role of the speech and hearing clinician as a differential diagnostician. Special emphasis is placed on correlating information obtained from the oral-peripheral examination, articulation and language evaluation, audiometric and case history information in constructing the initial evaluation report. Special approval needed from the instructor. Credit Hours: 3

CDS493 - Basic Clinical Practice Current information regarding diagnostic, treatment and documentation procedures in speech-language pathology will be presented through active observation in the clinical environment and classroom instruction. Special approval needed from the instructor. Fee: $100. Credit Hours: 3

CDS494 - Beginning Clinical Practicum This course is designed to introduce the student to the clinical practice of speech-language pathology and to facilitate the transition from the classroom to the clinical setting. Students will learn the application of diagnostic information, intervention planning, and the intervention process. Active, supervised participation in the clinical process with emphasis on individualized assessment, treatment, counseling, and documentation procedures. Taken concurrently with CDS 595*. *3rd Year students who apply for accelerated completion and are accepted will be allowed to take 494 without 595. Those students will take 595 first summer along with their graduate cohort. Credit Hours: 1

CDS500 - Research Design in Speech Pathology and Audiology Evaluation of the strategies and procedural tactics of behavioral research. Credit Hours: 3

CDS505 - Phonological Development and Disorders An introductory discussion of the important linguistic, physiological and acoustic variables which affect language production at the segmental and supra-segmental level of language; and an historical examination of the growth and development of distinctive feature systems from 1920 to the present. Concentration upon the mathematical, logical, physiological and acoustic assumptions of the various matrices, which have been developed. Prerequisite: CDS 302 or equivalent. Special approval needed from the instructor. Credit Hours: 3

CDS507 - Language Disorders Discussion of the application of current theoretical implications and research findings to the syntactically impaired. This course emphasizes diagnostic and therapeutic models applicable to language disorders. Opportunities for research and clinical experience with young children displaying developmental language problems will be provided. Required for Master's students. Prerequisite: CDS 303 or consent of instructor. Credit Hours: 3

CDS510 - Stuttering: Behavior Assessment and Therapy Explores the assumptions underlying diagnosis and assessment. Procedures specific to the differential assessment of fluency failures are examined, evaluated and related to therapeutic strategies and the tactics of behavior change. Special approval needed from the instructor. Credit Hours: 3

CDS512 - Voice Disorders An intensive study of the variables of air stream modulation resulting from impaired structures and function of head and neck. Course fee for Cognella Textbook and Active Learning modules: $50. Credit Hours: 3

CDS517 - Conceptual and Clinical Considerations for Working with Individuals with Complex Communication Needs CDS 517 is a 3-credit hour course for graduate students. The course provides an overview of conceptual and clinical considerations for working with individuals with complex communication needs (CCN). Clinicians that work in this area require a broad and diverse clinical repertoire and strong interpersonal effectiveness to work as valued members on a treatment team. The roles and responsibilities of speech-language pathologist will be discussed in the context of collaborative service delivery models and as part of the ongoing clinical decision-making process of evidence-based practice. Credit Hours: 3

CDS540 - Neurogenic Disorders of Communication I Focus on aphasia and neurolinguistic science. A clinically oriented presentation of the aphasias, and related CNS language disturbances, will be integrated with an introduction to the broader field of neurolinguistics. Clinical aspects will focus on assessment of rehabilitation approaches in aphasia and related disorders. Other topics include cortical language representation, hemispheric functions (general), and review of basic neurolinguistic literature. Prerequisite: CDS 450 or consent of instructor. Credit Hours: 3

CDS541 - Neurogenic Disorders of Communication II Focus on the role of the pyramidal and extrapyramidal motor systems in speech production and speech disorders related to abnormalities in these motor systems. Discussion of the neurological basis and clinical management of the dysarthrias and verbal apraxia. Prerequisite: CDS 540 or consent of instructor. Credit Hours: 3

CDS585 - Special Topics in CDS Topical presentations of current information on special interests of the faculty not otherwise covered in curriculum. Designed to promote a better understanding of recent developments related to disorders of verbal communication. Open to advanced undergraduate and graduate students. Approval of instructor required. Credit Hours: 1-3. Credit Hours: 1-3

CDS590 - Readings in Speech-Language Pathology and Audiology Supervised and directed readings in specific areas of speech pathology and in audiology. Maximum of two hours counted toward Master's degree. Special approval needed from the chair. Credit Hours: 1-2

CDS593 - Research Problems in Speech-Language Pathology and Audiology Individual work upon selected problems for research. Special approval needed from the chair. Credit Hours: 1-3

CDS594 - Advanced Clinical Practice Therapy/SLP Active, supervised participation in the clinical process with emphasis on individualized assessment, treatment, counseling and documentation procedures. Overview of clinical practice in various settings, federal legislation and standards of ethical practice. Special approval needed from the instructor. Credit Hours: 1-3

CDS595 - Clinic Seminar Taken concurrently with CDS 594. Topics differ each semester and are related to clinical practice, including those necessary for successful completion of advanced clinical practicum, internship/student-teaching, clinical fellowship and professional credentialing. Fulfills the reading instruction requirement for the Illinois Professional Educator License for speech-language pathologists. Partially fulfills the requirements for ASHA certification. Credit Hours: 1

CDS597 - Public School Practicum Public School internship provides the student with clinical experience under the supervision of a school-based certified speech-language pathologist. The student should receive experience with the disorders of fluency, articulation, voice, organics, language and hearing. The student should also gain administrative experience. Prerequisite: 150 to 200 clock hours. Special approval needed from the instructor. Lab fee: $100. Credit Hours: 12

CDS598 - Internship Communication Disorders Internship in a selected medical center, hospital clinic, community agency, or private clinic. The internship provides the student with an intensive, professional, clinical experience under supervision of qualified and certified resident staff members. Special approval needed from the instructor. Credit Hours: 6-9

CDS599 - Thesis Credit Hours: 1-6

CDS601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Communication Disorders and Sciences Faculty

Boyer, Valerie E., Associate Professor, Communication Disorders and Sciences, Ph.D., Southern Illinois University Carbondale, 2006; 2009. Child language and animal-assisted therapy.

Franca, Maria Claudia, Professor, Communication Disorders and Sciences, Ph.D., Southern Illinois University Carbondale, 2006; 2008. Voice science and multicultural issues related to communication disorders and sciences.

Martin, Kathryn, Senior Lecturer, Communication Disorders and Sciences, M.S., Southern Illinois University Carbondale, 1988; 2013. Language.

Meadows, Atheana, Associate Lecturer, Communication Disorders and Sciences, M.A., The Ohio State University, 1991; 2015. Audiology and (central) auditory processing disorder.

Emeriti Faculty

Austin, Gary, Professor, Emeritus, Communication Disorders and Sciences, Ph.D., Northwestern University, 1973; 1984.
Blache, Stephen, Professor, Emeritus, Communication Disorders and Sciences, Ph.D., The Ohio University Athens, 1970; 1971.
Lehr, Richard, P. Jr., Professor, Emeritus, Communication Disorders and Sciences, Ph.D., Baylor University, 1971; 1973.

Muzio, Diane, Professor of Practice, Emerita, Communication Disorders and Sciences, Ph.D., Southern Illinois University, 2017.

Communication Studies

The School of Communication Studies has a healthy diversity of outlooks and approaches. Our diversity is complemented by an exceptionally supportive interpersonal climate. We are committed as colleagues to effective teaching and productive scholarship. We believe that our students share these commitments, and we are most eager to recruit students who want to study in such an environment.

Our facilities include a superior laboratory for performance studies, the Marion Kleinau Theatre, collaborative project room, Speaker's Center, library, and research carrels all housed in the school. We offer graduate assistants the opportunity for independent teaching experiences as well as the usual support duties as teaching and research assistants.

Financial Assistance

There are several forms of financial assistance available to graduate students in the School of Communication Studies. First, there are graduate fellowships awarded on the basis of superior scholarship, which require a 10-hour per week research assignment. Second, there are several special fellowships offered from the Graduate School annually to students who show promise of success in graduate studies even though their academic records have been only average because of economic or social disadvantages. These special fellowships also have a ten-hour per week research assignment. Third, there are graduate assistantships available which require up to 20 hours per week of service in teaching or research. Finally, there are dissertation research awards for students in their final year of work toward the Ph.D. in Communication Studies degree.

The stipends for the above awards are competitive. All the appointments, fellowships and assistantships also include a waiver of tuition (both in-state and out-of-state) for the student, although the student is responsible for student fees. Students who hold assistantship appointments for two consecutive semesters also receive a tuition waiver for the following summer session.

Additional information may be obtained by contacting: Coordinator of Graduate Studies, School of Communication Studies, Mail Code 6605, 1100 Lincoln Drive, Southern Illinois University Carbondale, Carbondale, Illinois 62901. Applications for fall semester assistantships should be received by January 1.

The School of Communication Studies offers two graduate programs of instruction and research in the discipline of human communication leading respectively to the Master of Arts, and Doctor of Philosophy degrees.

Curriculum

The graduate faculty of the school offer course work in rhetoric and society; gender, sexuality and relational communication; intercultural communication and pedagogy; and performance studies.

Admissions

Applicants must meet the minimum requirements of the Graduate School and should have completed a minimum of 24 quarter or 16 credit hours in communication studies or related subjects. A program for remedying deficiencies in background can be arranged by the school's Graduate Committee.

Except for persons from English-speaking countries, international students are required by the School to have a TOEFL score of 600 (paper) or 250 (internet) or an IELTS score of 7 or higher for admission. Each applicant should apply online and upload three letters of recommendation from former instructors, a personal statement, and a writing sample. Official transcripts should be mailed directly to the School.

Inquiries regarding admission to graduate studies in communication studies should be directed to the coordinator of graduate studies of the School of Communication Studies. Except for persons from English-speaking countries, international students are required by the school to have a TOEFL score of 600 (paper score) or 250 (computer score), or higher for admission. Each applicant should apply online

and upload three letters of recommendation from former instructors. Official transcripts should be mailed directly to the school. In addition, applicants for the Ph.D. in Communication Studies degree program may furnish a research paper as evidence of research and writing ability.

This program requires a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in Communication Studies. Applicants must pay this fee by credit card.

Acceptance for graduate study in Communication Studies is determined by the graduate committee of the School of Communication Studies. Students who are awarded graduate assistantships to provide assistance in the instruction of the school are required to take CMST 539.

Research Style

Each student is required to write a research report, thesis, or dissertation as a requirement of the program. In all cases the writing must conform to the latest edition of The MLA Style Manual or the APA Publication Manual. In all cases the writing must conform to the current edition of the Graduate School Guidelines for the Preparation of Research Reports, Theses, and Dissertations.

Master of Arts (M.A.) in Communication Studies

A minimum of 30 credit hours is required for the M.A. in Communication Studies degree. A student who completes only the minimum of 30 credit hours of work may devote no more than nine credit hours to work outside the School of Communication Studies. All students are required to take CMST 501, Introduction to Communication Research.

The individual student selects or is assigned a faculty adviser no later than the beginning of the second semester. The faculty adviser and the student will plan the program of study.

During the last half of the second semester of course work, the student's progress shall be reviewed by the advisory committee to determine continuation, change, or termination of the program. The committee for each student shall be responsible for assembling the necessary information (grades, recommendations, progress in curriculum areas, etc.) for consideration in reaching the above decision.

Attendance is required at pro-seminars as part of professional development. Graduate students are encouraged to present their scholarly work.

The requirements for the M.A. in Communication Studies degree may be met by one of the following plans chosen by the student in consultation with the adviser:

Plan 1: Thesis

Each student must complete a minimum of 30 credit hours, with no more than six hours or fewer than three hours of thesis credit in CMST 599 counted toward the 30 credit hour minimum. In addition, the student must register for at least one semester hour of credit in CMST 599 during any academic term in which the services of any faculty member are utilized in the supervision of or consultation concerning the thesis. If the student's reliance upon faculty assistance justifies, the thesis director may require an appropriately greater number of credit hours in CMST 599. The thesis is submitted to a committee of three members of the graduate faculty, at least two of whom must be from the School of Communication Studies. The committee must approve the prospectus and will administer an oral examination over the thesis. Students are required to submit their thesis to the Graduate School, one copy to the School of Communication Studies, and one copy to the thesis director.

Plan 2: Research Report

Each student must complete a minimum of 30 credit hours, with no more than three hours or fewer than one hour of research report credit in CMST 595 counted toward the 30 credit hours minimum. A research report is submitted as evidence of research competence. An advisory committee consisting of the student's adviser and one other member of the graduate faculty in the School of Communication Studies selected by the student and the adviser, will administer an oral examination over the research report before it is submitted to the Graduate School. One copy of the research report is submitted to the Graduate School, one copy to the School of Communication Studies, and one copy to the adviser.

A student must have a graduate grade point average of 3.00 in order to be eligible for the M.A. in Communication Studies degree.

Plan 3: Coursework Only Option

Each student must complete a minimum of 30 credit hours. Students must select the coursework only option during their second semester review held during the second semester of their first year of coursework. While not required, students choosing the coursework only option can request to take a professional practice course with a graduate faculty member of their choice during which they complete a final project in line with their future career plans during their final semester. This project may take the form of a training workshop, a research presentation/talk, a performance, a podcast, or some other format approved and chosen in consultation with the student's advisory committee. Completion of the project would result in a public presentation to the student's advisory committee and other invited faculty and graduate students in the School of Communication Studies.

Doctor of Philosophy (Ph.D.) in Communication Studies

A student must take 51 credit hours of course work beyond the master's degree, nine hours of which are methodology courses. A minimum of 36 of those 51 credit hours must be taken within the school. In addition, 24 credit hours of dissertation work are required for the Ph.D. in Communication Studies degree. Course work outside the school must be germane to one of the school curriculum areas for purposes of examination and dissertation research. Throughout the program of study, the student must maintain a 3.00 grade point average in all work taken. If the grade point average drops below the minimum, the student is placed on academic warning for the following two semesters.

During the last half of the second semester of course work, the student's progress shall be reviewed by the advisory committee to determine continuation, change, or termination of the program. The advisory committee for each student shall be responsible for assembling the necessary information (grades, recommendations, progress in curriculum areas, etc.) for consideration in reaching the above decision.

Attendance is required at pro-seminars as part of professional development. Graduate students are encouraged to present their scholarly work.

Advisory Committee

A three-person advisory committee shall be established no later than the beginning of the second semester of graduate study to plan the program of study with each student. The chair of the committee shall act as the primary adviser and sign the graduate course request form. This advisory committee is responsible for certifying to the graduate director that the student has met all school requirements for admission to candidacy and has passed the Ph.D. in Communication Studies preliminary examination.

The advisory committee and the student will plan the program of study. All students are required to take CMST 501, Introduction to Communication Research and CMST 510, Seminar: Rhetoric Theory and Society. Students selecting theater as a curriculum area must take 18 credit hours of communication studies courses including CMST 501 and CMST 510; and THEA 501.

Preliminary Examination

The student must pass a preliminary examination on their program of study. The preparation and administration of the examination are determined by the advisory committee in consultation with the student. The examination is taken at the end of the course work, and no later than one year after completing course work. Delays could lead to dismissal from the program. The advisory committee is disbanded after student passes the preliminary examination.

Dissertation

Each student must register for at least 24 hours of dissertation credit in CMST 600 or THEA 600. In addition, the student must register for at least one hour of credit in CMST 600 or CMST 601 or THEA 600 or THEA 601 during any academic term in which the services of any faculty member are utilized in the supervision of or consultation concerning the dissertation. If the student's reliance upon faculty assistance

justifies, they may be required by the dissertation adviser to register for an appropriately greater number of credit hours.

The dissertation director shall, upon consultation with the student, be responsible for setting up a dissertation committee, supervising the dissertation, and administering the final oral examination. The dissertation committee shall approve the dissertation prospectus and pass upon the completed dissertation and oral examination. Students are required to submit an electronic copy of the dissertation to the Graduate School, one paper copy to the School of Communication Studies, and one paper copy to the dissertation director.

Communication Studies Courses

CMST401 - Communication Theories and Models An advanced examination of the purposes and processes of constructing and using theories and models in communication research. Students critically analyze existing communication theories from both social scientific and interpretive paradigms in order to explicate and evaluate their implicit and explicit assumptions about human being, knowledge, and value. For graduate students and advanced undergraduates. Satisfies the CoLA Writing-Across-the-Curriculum requirement for communication studies majors. Credit Hours: 3

CMST413 - Visual Rhetoric An exploration of visual messages in public discourse and persuasive communication. This course offers tools for doing rhetorical criticism of visual messages, identifying similarities and differences between the analysis and production of verbal and visual persuasion. A lecture, readings, and discussion course. Credit Hours: 3

CMST415 - Topics in Gender, Sexuality, and Communication (Same as WGSS 415) An exploration of advanced theories and research in gender and sexuality from communication perspectives. Course may be repeated when topics vary. Credit Hours: 3

CMST435 - Topics in Performance Studies An exploration of advanced theories and techniques in performance studies. Topics vary and are announced in advance. Students may repeat enrollment in the course, since the topics change. Lecture, discussion, class projects. Credit Hours: 3-6

CMST440 - Language, Culture, and Communication Study of language in use in social interactions in various cultural and communicative contexts. Topics include components of language, language change and diversity, speech acts, conversational structure, dialects, gender and language, bilingual and multilingual cultures, child language acquisition, and language use in institutional contexts. Prerequisite: CMST 301I or CMST 341, or consent of instructor or graduate standing. Credit Hours: 3

CMST441 - Advanced Intercultural Communication: Theory and Practice Advanced study of intercultural communication in domestic and global intercultural contexts. Course incorporates intercultural communication research with specific focus on application theory in professional contexts and in service of public advocacy and/or social justice. Prerequisite: CMST 301I (or CMST 341) or consent of instructor or graduate standing. Credit Hours: 3

CMST442 - Psychology of Human Communication Nature, development, and functions of verbal and nonverbal behavior; application of psychology theories and research to the communication process in individuals and groups. Emphasis on the systemic nature of communicative behavior. Credit Hours: 3

CMST443 - Approaches to Language in Communication Research Study of theories of language, its use, and consequences, with particular attention to general semantics, semiotics, and poststructuralism and their influence on communication research and criticism. Credit Hours: 3

CMST445 - Performance in Everyday Life This course analyzes performance in everyday life in a variety of social, cultural, and historical contexts. The class explores genres such as conversations and personal narratives, folklore and oral traditions, festivals and celebrations, ceremonies and rituals, media events and politics. Topics of reading, discussion, and original research may range from performative elements in language and social interaction to performances of selfhood, identity, and personality. Credit Hours: 3

CMST447 - Communicating Race and Ethnicity (Same as AFR 447) Via intercultural theories and methods, this course explores histories, relationships, interactions and recent events by positioning racial and ethnic perspectives at the center of inquiry. The course critically examines the complexities of race, racism and ethnicity by focusing on how people communicate across racial and ethnic differences in different contexts. Prerequisite: CMST 301I or CMST 341, or consent of instructor or graduate standing. Credit Hours: 3

CMST451 - Political Communication (Same as POLS 418) A critical review of theory and research which relate to the influence of communication variables on political values, attitudes, and behavior. Satisfies the CoLA Writing-Across-the-Curriculum requirement for communication studies majors. Credit Hours: 3

CMST460 - Small Group Communication: Theory and Research A critical examination of small group theory and research in communication studies. Emphasis is given to the development of principles of effective communication and decision-making in the small, task-oriented groups. Prerequisite: CMST 261 or consent of instructor or graduate standing. Credit Hours: 3

CMST461 - Interpersonal Communication as Encounter Interpersonal communication is studied as human encounter that participates in the development of human identity. Students explore the philosophical and theoretical approaches to human communication by developing concrete projects that examine the role of relationships in the construction and alteration of values and priorities. Credit Hours: 3

CMST463 - Communication and Conflict Study of sources, patterns, and outcomes of conflict in relationships within interpersonal, familial, organizational, managerial, or intercultural relationships. Emphasis on interactive, systems-level analysis of naturally occurring conflict episodes. Practice in managing conflicts, reframing, negotiation, and mediation. Credit Hours: 3

CMST464 - Compassionate Communication Study and practical training in approaches to more effective interpersonal and intrapersonal communication. Using real-life experiences from political encounters and interpersonal conflicts to inner dialogue, this class offers a way to deepen peaceful connection and understanding with ourselves and others through honesty, empathy, and being "fully present" in the moment. Restricted to CMST major or consent of instructor. Credit Hours: 3

CMST465 - Philosophy of Communication An introduction to philosophical approaches to the study of communicative interaction. Topics include the relation of meaning and conceptual structures to bodily experience and the interpretative nature of communicative interaction. Credit Hours: 3

CMST471 - Studies in Genre and Performance Topical study of the role genre plays in analyzing, scripting, and performing literature and other textual forms. Students may repeat enrollment in the course since topics change. Prerequisite: CMST 201 or 370 or 371 with a grade of C- or better or consent of the instructor or graduate standing. Credit Hours: 3

CMST472 - Media and Performance Study and practice of mixed performance methods such as live performance with digital, projected or other media. Reading, discussion, and performance projects. Credit Hours: 3

CMST473 - Performance Ethnography An exploration of culture, ritual, narrative, community and personal identity as performance. Readings, field work and assignments focus on performance ethnography, communicative dimensions of performance and performance epistemology. Prerequisite: six hours of performance studies or consent of instructor or graduate standing. Credit Hours: 3

CMST474 - Adaptation and Staging Theory and practice of staging texts with emphasis on adaptation, scripting, and directing. Prerequisite: CMST 201 or consent of instructor or graduate standing. Credit Hours: 3

CMST475 - Group Performance Contemporary performance practices as critical and persuasive tools. Develops skills in reading, writing, analyzing and performing a broad range of texts to acquaint students with methods for composing performance. Prerequisites: CMST 201 or CMST 370 or CMST 371 with a grade of C- or better or consent of instructor or graduate standing. Credit Hours: 3

CMST476 - Performance Composition Study of theoretical and practical issues in solo performance staging with special emphasis on textual production, scripting, social context, and performance practice.

Advanced study in individual performance as a method of textual study as well as theory and practice in solo performance as an aesthetic event and rhetorical act. Prerequisites: CMST 201 or CMST 370 or CMST 371 with a grade of C- or better or consent of instructor or graduate standing. Credit Hours: 3

CMST480 - Case Studies in Leadership Communication Exploration of leadership communication, current leadership trends, existing leadership theories, and contemporary or historic leaders through case-based teaching. Students apply interpersonal, persuasive, and organizational communication theory to real scenarios. Students discuss communication strategies and tactics leaders use to build relationships and achieve goals. Students will discuss strategies for leading diverse teams, building equitable systems, and encouraging inclusion among team members. Credit Hours: 3

CMST481 - Public Relations Cases and Campaigns Advanced course in public relations case analysis and campaign planning. Students critique public relations campaigns created by various profit, nonprofit and agency organizations. Students also design and implement public relations campaigns from problem identification through evaluation stages. Satisfies the CoLA Writing-Across-the Curriculum requirement for communication studies majors. Prerequisite: CMST 381 and 382 with a grade of C or better or consent of instructor. Credit Hours: 3

CMST492 - Workshop in Performance Studies Summer offering concentrating in specialized areas of performance studies. Prerequisite: CMST 201 or CMST 370 or CMST 371 with a C- or better or consent of instructor or graduate standing. Credit Hours: 2-8

CMST493 - Special Topics in Communication An exploration of selected current topics in communication arts and studies. Topics vary and are announced in advance; both students and faculty suggest ideas. Students may repeat enrollment in the course, as the topic varies. Credit Hours: 3-9

CMST501 - Introduction to Communication Research Survey of research methods utilized in the discipline of communication studies, along with methodological considerations and paradigmatic orientations. Discussion of these methods as they apply to the various subject matter typologies. Introduction to basic conventions of research investigation and reporting. Credit Hours: 3

CMST504 - Seminar: Continental Philosophy in Critical-Cultural Communication Research Methods Analysis and application of theoretical approaches to communication research methods that draw on continental philosophy, such as phenomenology, semiology, deconstruction, and/or psychoanalysis. Focus on qualitative aspects of these approaches and their utility for critical-cultural investigation of communication as rhetorical, pedagogical, relational, cultural, and/or performative. May be repeated (up to six hours) with change of topic area. Topics announced prior to each offering. Prerequisite: CMST 501 or consent of instructor. Credit Hours: 3

CMST506 - Ethnography of Communication Survey of research literature and methods in the ethnography of communication, emphasizing description of communicative practices situated in particular cultural contexts. Course includes such topics as theoretical assumptions and genres of ethnographic writing. Credit Hours: 3

CMST507 - Ethnographic Fieldwork Advanced study of culturally distinctive patterns of communicative conduct in particular social settings, groups and/or communities. Emphasizes fieldwork methods (e.g., participant-observation, ethnographic fieldnotes, ethnographic interviews) and practice in the collection of data from which cultural patterns of communication can be formulated, including the analysis and interpretation of such data. This course is based in the perspective of ethnography of communication. Credit Hours: 3

CMST508 - Autoethnography Survey of research literature and methods in autoethnography with particular emphasis on the communicative self as a way of studying and speaking about culture. Calling upon the evocative and self-reflexive, strategies for field work and scholarly representation are explored. Credit Hours: 3

CMST509 - Qualitative Research Methods Survey of methodological approaches that facilitate analysis of ways discourses constitute, perpetuate, and maintain particular meanings. Objective is to identify, explicate, and practice procedures for conducting interpretive/critical communication research. Credit Hours: 3

CMST510 - Seminar: Rhetoric Theory and Society A survey of selected theories of rhetoric. Emphasis on major contributors of historical or contemporary importance. Credit Hours: 3

CMST511 - Rhetorical Criticism Designed to develop the student's ability to criticize public discourse, including speeches, written works, and the mass media. Students who have completed CMST 411 are ineligible to enroll. Credit Hours: 3

CMST512 - Environmental Rhetoric An exploration of rhetorical structures and strategies in environmental policy, activism, and public discourse. This course traces the significant contributions rhetoric and public debate have made in the struggle to protect environments from excessive industrial and commercial exploitation. A lecture, reading and discussion course. Students who have completed CMST 412 are ineligible to enroll. Credit Hours: 3

CMST513 - Studies in Rhetoric An exploration of selected topics in the field of rhetoric. May be repeated with change of topic area. Topics announced prior to each offering. May be repeated up to nine hours. Credit Hours: 3

CMST515 - Studies in Gender, Sexuality, and Communication (Same as WGSS 515) How communicative activity creates and sustains human beings as gendered. Emphasis on gaining familiarity with contemporary research on gendering from a particular perspective (e.g., ethnography, performance, phenomenology, quantitative methods, rhetorical criticism). May be repeated when perspective varies. Perspective announced prior to each offering. Credit Hours: 3-9

CMST516 - Black Feminist Thought as Theory and Praxis Explore the roots, contemporary manifestations, and current embodiments of Black feminist thought. Explore the works of Black women to engage in critical thinking and thoughtful dialogue that positions the valuable knowledge, experiences and perspectives of women of color at the center of inquiry while simultaneously discovering spaces for multicultural alliances. Students who have completed CMST 416, AFR 416, or WGSS 416 are ineligible to enroll. Credit Hours: 3

CMST521 - Studies in Public Address Critical studies of speakers and issues relevant to social and political movements dominant in national and international affairs. A lecture, reading, and discussion course. Students may repeat enrollment for a total of nine hours. Students who have completed CMST 421 are ineligible to enroll. Credit Hours: 3

CMST526 - Seminar: Studies in Persuasion The study of persuasion in social-political contexts. Exploration of contemporary research and selected theories in persuasion. Examination of philosophical-ethical questions related to persuasion. Readings, research and discussions. Credit Hours: 3

CMST531 - Seminar: Communication Pedagogy Advanced study of selected problems in communication pedagogy. Analysis of research problems and methodologies in communication pedagogy research. Topics may vary from year to year. May be repeated only if topic differs each time repeated. Credit Hours: 3-9

CMST533 - Critical Communication Pedagogy Advanced study of communication pedagogy research from a critical perspective. Foundations of critical communication pedagogy examined with special attention to current research trends, paradigmatic debates, and issues of culture and power. Credit Hours: 3

CMST535 - Teaching as Performance Survey of theoretical, methodological and instructional approaches to education that foreground performative ways of teaching and learning. The course provides content and learning opportunities aimed toward the development of critical, embodied and socially transformative pedagogies. Prerequisite: six hours of credit in either Communication Pedagogy or Performance Studies or consent of instructor. Credit Hours: 3

CMST537 - Communication Pedagogy and Culture Advanced study of communication pedagogy research from a critical/cultural perspective. Survey of research in communication pedagogy that examines culture, including such topics as intercultural/multicultural education, cultural studies and communication, as well as feminist/queer pedagogies. Credit Hours: 3

CMST539 - Communication Studies at University Level Analysis and practice of instructional methods. Focus on the development of instructional philosophy and skills with specific applications to teaching the introductory communication studies course. Credit Hours: 3

CMST540 - Seminar: Language, Culture, and Semiology Examination of communication problems and research focusing on the relation among cultural values, communication behaviors in the speech community, and social exchange. Emphasis on the semantics and pragmatics of intercultural communication and social semiotic systems. Prerequisite: CMST 440 or CMST 441 or consent of instructor. Credit Hours: 3

CMST541 - Studies in Intercultural Communication Advanced study of selected topics in intercultural communication. May be repeated for a total of nine hours when topics vary. Special approval needed from the instructor. Credit Hours: 3

CMST542 - Paradigmatic Approaches to Intercultural Communication This course provides a survey of intercultural communication studies, paying close attention to the historical development of the field. Students will engage with multiple paradigmatic approaches to intercultural communication research; mainly functionalist, interpretive, and critical. Students can also expect to reflect on how we can connect intercultural communication research to everyday practice. Credit Hours: 3

CMST543 - Identity, Culture, and Communication A theoretical exploration of identity performance across and in/between cultures. Draws mainly upon cultural studies, postcolonial theory, literary theory, critical globalization theory, and intercultural communication theory to provide a multidisciplinary understanding of how identity politics are negotiated in cultural contexts. Credit Hours: 3

CMST544 - Theories of Coloniality & Globalization This course explores globalization-post/colonial-decolonial theory and applies this intertwined body of knowledge to the study of intercultural communication. Such an understanding provides students with a rich theoretical base for problematizing how scholars have been studying culture and communication, especially in global contexts that intertwine the ?west and the rest.? The readings in this course will help students map globalization theory, post/colonial and decolonial theory and the work that has been done to mesh these bodies of knowledge into the study and practice of intercultural communication in diverse contexts. Some graduate coursework in intercultural/global communication preferred but not required. Credit Hours: 3

CMST548 - Intercultural Training Intercultural Training Introduction to communication theories and practices informing the training of individuals and groups anticipating extensive interactions with persons from differing cultural communities. The course provides content and learning opportunities aimed toward the design, development, and evaluation of effective, ethical, culture-specific, and culture-general intercultural training programs. Students who are taking or have taken CMST 448 Intercultural Training are ineligible to enroll. Credit Hours: 3

CMST551 - Seminar: Continental Philosophy in Communication Studies Critical examination of emerging and enduring themes in communication theory and praxis developed as a human science by such continental theorists as Arendt, Barthes, Cixous, Benjamin, Foucault, Habermas, Kristeva, and/or Merleau-Ponty, as well as those such as Butler and Ronell and others influenced by this tradition. Focus on elements of their work that deal specifically with approaches to communication. May be repeated (up to six hours) with change of topic area. Topics announced prior to each offering. Prerequisite: CMST 501 or consent of instructor. Credit Hours: 3

CMST555 - Tourism, Culture, and Communication This course explores contemporary tourism in a broad context of intercultural communication, rhetoric, performance, and cultural studies. Emphasis is placed on examining tourism as a popular leisure pursuit, a booming multinational industry, and also as a complex medium of transnational communication and performance that transforms daily life and culture. Students will be asked to not only study tourism but also engage in some local tourist activities as part of the experiential learning process. Students who are taking or have taken CMST 455 Tourism, Culture, and Communication are ineligible to enroll. Credit Hours: 3

CMST561 - Studies in Small Group Communication Studies of group action, interaction and leadership designed to apply small group theory and communication theory. Emphasis on the nature of group

communication as exemplified in the laboratory model or the discussion/conference model. Students may repeat enrollment to a total of six hours. Credit Hours: 3

CMST562 - Philosophy of Human Communication (Same as PHIL 562) Study of selected topics in the philosophical study of communication. May be repeated with change in topic area. Topics announced prior to each offering. Credit Hours: 3

CMST563 - Studies in Interpersonal Communication An investigation of recent theories and empirical research concerning interpersonal communication. Emphasis will be placed on analyses of relational development, maintenance and change in the contexts of working relations, friendships and families. Both analytic and quantitative perspectives on interactional processes will be considered. Credit Hours: 3

CMST564 - Issues in Family Communication Survey of theories, research methods, and/or creative representations of communication in family contexts. Emphasis is on describing family communication as a process; parent-child and sibling communication across the lifespan; as well as intercultural, gendered, and sociopolitical influences on various family structures and contexts. May be repeated (up to six hours) with change of topic area. Credit Hours: 3

CMST570 - Performance Methodologies The examination of performance methodologies for exploring human communication. Particular attention is given to generating and reporting performance knowledge. Credit Hours: 3

CMST571 - History and Criticism in Performance Studies A study of social and critical trends in performance studies with emphasis on their historical development. Credit Hours: 3

CMST572 - Theory and Criticism in Performance Studies A study of the theoretical trends in performance studies and literary criticism. Credit Hours: 3

CMST573 - Performance Criticism An examination of the theoretical and practical issues surrounding the evaluation of artistic performances for interpretation, rhetoric, theatre, journalism, film, and television students interested in developing their critical skills. Credit Hours: 3

CMST574 - Studies in Performance An exploration of selected current topics in the field of performance studies. May be repeated for a total of six hours. Prerequisite: twelve hours of performance studies courses or consent of instructor. Credit Hours: 3

CMST576 - Performance Art The study and creation of postmodern performance. Particular attention is given to performance artists in the theatrical tradition. Prerequisite: nine hours of performance studies or consent of instructor. Credit Hours: 3

CMST580 - Issues in Organizational Communication Advanced study and applications related to specific issues in organizational communication. Topics announced prior to each offering. Credit Hours: 3

CMST582 - Public Relations in Sports and Recreation Public Relations in Sports and Recreation Explores the role of public relations within sports and recreation organizations and the relationship between these industries and the media. Students will plan and conduct a fund-raising event, may attend athletic competitions, and learn about careers in the sports and recreation fields. Students who have completed CMST 482 are ineligible to enroll. Credit Hours: 3

CMST583 - Communication Skills for Career Development This course is designed for graduate communication students who want to apply the knowledge, skills, and abilities developed during their course of study to career development scenarios. This course uses project-based learning and offers learners the opportunity to enhance their ability to use communication tools and techniques to improve their career portfolios. It also provides coaching and consulting services from a communication perspective. Students who are taking or have taken CMST 483 Communication Skills for Career Development are ineligible to enroll. Credit Hours: 3

CMST584 - Social Media and Digital Communication Advanced application of contemporary theories in communication studies, particularly those related to principles of rhetoric and persuasion, in digitally mediated environments. Course topics cover the generation, management, and consumption of digital communication within social media and other Web platforms. This includes writing content strategy plans and study of tools used to curate, analyze, and interpret digital documents and information. Students

who are taking or have taken CMST 484 Social Media and Digital Communication are ineligible to enroll. Credit Hours: 3

CMST585 - Public Relations Ethics Study of ethical communication practices within the framework of the public relations profession. This course teaches the Public Relations Society of America Code of Ethics and prepares students to construct their own ethical guidelines for communicating professionally. Individual projects and group case studies are used to familiarize students with many of the ethical dilemmas faced by public relations professionals. Students who are taking or have taken CMST 485 Public Relations Ethics are ineligible to enroll. Credit Hours: 3

CMST586 - Special Topics in Public Relations An exploration of selected, current topics in public relations. Topics vary and are announced in advance. Students may repeat up to 6 hours as the topic varies. Students who are taking or have taken CMST 486 Special Topics in PR are ineligible to enroll. Credit Hours: 3

CMST590A - Graduate Practicum-Performance A supervised experience using communication skills. Emphasis on the development of performance skills in performance studies. Special approval needed from the instructor. Credit Hours: 1-3

CMST590B - Graduate Practicum-Debate A supervised experience using communication skills. Emphasis on the development of skills in debate. Special approval needed from the instructor. Credit Hours: 1-3

CMST590C - Graduate Practicum-General A supervised experience using communication skills. Special approval needed from the instructor. Credit Hours: 1-3

CMST593 - Research Problems in Communication Independent research study with a theoretical focus under the tutorial supervision of a member of the graduate faculty. May be taken twice for a maximum of 6 credit hours. Special approval needed from the instructor and program advisor. Credit Hours: 1-3

CMST595 - Research Report One to three hours required of all non-thesis students writing a research paper. Graded S/U or DEF only. Credit Hours: 1-3

CMST596 - Professional Practice in Communication Studies Project-based course for MA students pursuing a coursework only degree path as an alternative to a thesis or research report. Students in this course will work with the instructor to create a final project showcasing their research and communication skills. Credit Hours: 3-9

CMST598 - Proseminar in Human Communication An open forum offered each semester for the systematic discussion of contemporary research in the field of communication arts and studies. Specific content is determined by participating faculty and students. Topics will usually be related to current faculty research or dissertations in progress in the department. Graded S/U only. Credit Hours: 0

CMST599 - Thesis Minimum of three hours to be counted toward a Master's degree. Credit Hours: 1-6

CMST600 - Dissertation Minimum of 24 hours to be earned for the Doctor of Philosophy degree. Credit Hours: 1-16

CMST601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

CMST699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Communication Studies Faculty

Auxier, Randall E., Professor, Ph.D., Emory University, 1992; 2000. Symbol theory and semiotics, philosophy of communication, history of rhetoric and philosophy, popular culture.

Bardhan, Nilanjana, Professor, Ph.D., University of Ohio, 1998; 1998. Intercultural communication and public relations.

Bhati, Sakshi, Assistant Professor, Ph.D., Kansas State University, 2024; 2023. Leadership and public relations.

Engstrom, Craig L., Associate Professor, Ph.D., Southern Illinois University Carbondale, 2010; 2015. Organizational communication, institutional theory, rhetoric, training and development, social media.

Gingrich-Philbrook, Craig, Professor, Ph.D., Southern Illinois University, 1994; 1998. Performance studies, queer theory, continental philosophy, performance art.

Gray, Jonathan M., Associate Professor, Ph.D., Louisiana State University, 1999; 1999. Rhetorical theory and criticism, popular culture, communication pedagogy, folklore, cultural studies, and performance.

Ivey, Christina, Assistant Professor, Ph.D., University of Nebraska-Lincoln, 2016; 2023. Communication pedagogy, gender and religion, queer and feminist rhetorics.

Pensoneau-Conway, Sandra L., Associate Professor, Ph.D., Southern Illinois University Carbondale, 2006; 2012. Critical communication pedagogy, qualitative methods, communication and identity.

Swafford, Shelby, Lecturer, Ph.D., Southern Illinois University, 2023. Activist performance, reproductive justice, feminist and queer theory, health and disability studies, and autoethnographic and archival methods.

Walker, Rebecca, Associate Professor, Ph.D., Louisiana State University, 2011; 2012. Performance and culture, performance and technology, performance and art, history of performance studies, rhetoric and pop culture, visual rhetoric, culture jamming, tourism and performance.

Young, Justin, Assistant Professor of Practice, M.S., Murray State University, 2003. Public relations, new media, film, video games.

Emeriti Faculty

Hinchcliff-Pelias, Mary, Associate Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1982; 1983.

Langsdorf, Lenore, Professor, Emerita, Ph.D., State University of New York at Stonybrook, 1977; 1990.

Lanigan, Richard L., Professor. Emeritus, Ph.D., Southern Illinois University Carbondale, 1969; 1974.

Pelias, Ronald J., Professor, Emeritus, Ph.D., University of Illinois, 1979; 1981.

Pineau, Elyse, Associate Professor, Emerita, Ph.D., Northwestern University, 1990; 1990.

Smith, William D., Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1964; 1961.

Stucky, Nathan, Professor, Emeritus, Ph.D., University of Texas-Austin, 1988; 1990.

Computer Science

The School of Computing offers a graduate program leading to the Master of Science and Doctor of Philosophy degree in computer science. For admission procedures to these degree programs refer to the Graduate School or School of Computing websites.

A nonrefundable $65 application fee must be submitted with the Graduate School's online application for Admissions to Graduate Study in Computer Science. Applicants must pay this fee by credit card.

Decisions concerning the admission of students to and retention of students in the graduate program will be made by the School of Computing faculty subject to the requirements of the Graduate School.

Master of Science (M.S.) in Computer Science

Admission

The evaluation of applicants for admission is based primarily on the student's academic record with particular attention being given to past performance in relevant undergraduate coursework. Applicants are expected to have a substantial background in undergraduate computer science courses covering high level and assembly language programming, data structures, computer organization, logic design as well as discrete mathematics, calculus, and linear algebra. The applicant is expected to have completed coursework in the above subject areas prior to admission. Normally, a GPA of at least 3.0/4.0 on the entire last undergraduate GPA earned at the time of application is required by the School of Computing.

Requirements

A student who has been admitted to the graduate program in Computer Science can meet the requirements for the Master of Science degree by completing 30 hours of graduate credit subject to the following constraints:

1. Students must take six credit hours of Computer Science coursework from the approved courses for each of the following three categories:
    - Computer Science Theory: CS 508, CS 526, CS 528, CS 545, CS 547, CS 549, CS 551, CS 552, CS 580, CS 510, CS 533, CS 534, CS 553, CS 555, CS 586
    - Software Development/Engineering: CS 507, CS 517, CS 518, CS 542, CS 583, CS 587, CS 520, CS 585
    - Computing Systems Technologies: CS 500, CS 504, CS 506, CS 509, CS 505, CS 513, CS 519, CS 521, CS 523, CS 524, CS 527, CS 529, CS 502, CS 541, CS 514, CS 525, CS 530, CS 534, CS 536, CS 540 (This requirement accounts for at least 18 hours of the required 30 hours of total graduate credit.)
    - Additional courses may be allowed as appropriate, subject to Graduate Program Director approval.
2. If a student believes they need to take a course from another academic unit at the University in order to gain specific knowledge for their thesis or project work, they must request approval from the Graduate Program Director prior to registering for such a course. The request must include an explanation of why the course is necessary for their program. Approval will be granted only if the justification is deemed adequate. No more than three hours of credit toward the 30 credit hour requirement will be given, and such courses must be at the 500-level only.
3. Students are required to choose either a thesis or non-thesis program:
    - **Thesis Option:** A student must complete six credit hours of CS 599, Thesis, in 3-credit hour segments taken for two semesters and 24 credit hours of lecture courses. The student is eligible to take the course CS 598 (must be in industry only). This CS 598 course will be considered equivalent to three credit hours of thesis (subject to the approval of the supervising faculty).
    - **Non-Thesis Option:** A student must take 27 credit hours of lecture courses. In addition, the student will take CS 598, Graduate Project, under the supervision of a faculty member.

Accelerated Master's Degree

The Accelerated MS degree program allows motivated and high-achieving undergraduate students to complete a program leading to a Bachelor of Science and a Master of Science degree in Computer Science in five years. During the junior year, a student working with a faculty advisor will develop a plan of study consistent with the student's interests and goals. To complete this five-year plan, 141 credit hours of study is required. Nine credit hours are awarded to both the undergraduate and graduate degree. Twenty-one additional hours of graduate level courses (500-level) are required to fulfill the graduate degree.

Doctor of Philosophy (Ph.D.) in Computer Science

Admission

Subject to meeting the admission requirements of the Graduate School, admission requirements for the Ph.D. in Computer Science consist of:

1. A master's degree in computer science or a related field with a minimum GPA of 3.25/4.0.
2. Graduate Record Examination (GRE) general test scores. It is recommended that results from the GRE subject area in computer science or a related area be included.
3. In exceptional cases, high achieving students with only bachelor degrees will be admitted to the program. Each student, in addition to the Ph.D. in Computer Science program course requirements, must complete at least 15 credit hours of computer science graduate courses approved by the Graduate Program Director, with a minimum accumulated GPA of 3.25/4.0 in those courses. If a specific course, or its equivalent, is already part of the student's academic background, an alternate course will be submitted.

Each applicant is reviewed and evaluated on an individual basis. The evaluation of applicants for admission is based primarily on the student's academic record and area of research interest. Application materials should include evidence of scholarly ability and/or achievement (e.g. awards, scholarships, work experience, recommendation letters, and published research papers). Only those who best meet the research goals and objectives of the Ph.D. in Computer Science will be selected for admission.

Requirements

The student must fulfill the requirements for the Qualifying Examination within three years of enrollment in the doctoral program. The Qualifying Examination is organized and administered by the student's academic advisor. The faculty prepares a written test based on at least two areas of concentration related to the student's intended dissertation area. Questions will be drawn from regularly scheduled 500-level graduate courses at SIUC. The grade for the exam will be on a Pass or Fail basis for each subject area. If a student fails to pass any subject area of the written examination, a second chance is given for the failed topic test. Students who fail the Qualifying Examination after two attempts will be dismissed from the Ph.D. in Computer Science program.

To fulfill the course requirements of the Ph.D. in Computer Science program, the student must complete at least 24 credit hours of 500-level lecture courses and 24 credit hours of CS 600 Dissertation research, all of which are subject to the following constraints:

1. The coursework must include two one-credit hour seminar courses, six credit hours from an approved list of computer science 500-level lecture courses, and six elective credit hours of CS 500-level lecture courses.
2. The student must file a request with the School of Computing to appoint a dissertation committee to supervise the remaining doctoral work. This committee will consist of five graduate faculty members, one or two of whom will be from a graduate program outside the School of Computing, one preferably from outside this University. The student's dissertation advisor will serve as the chair of this committee.
3. Each student should complete a course of study as determined by the student's dissertation committee.
4. The course of study must include a minimum of six credit hours of 500-level courses from academic programs other than computer science. These courses must be selected from a list approved by the School of Computing.
5. Having passed the qualifying exams and after completion of most of the course requirements, a student will begin working on a dissertation proposal. The next step will be a Preliminary Examination consisting of an oral test on the student's proposed research topic. The student will pass the Preliminary Examination only if the members of the committee, with at most one exception, judge the performance of the student's oral examination to be satisfactory. In the event the student's performance is unsatisfactory, the committee will reschedule the exam for a later time. A student who fails the reexamination will be dismissed from the Ph.D. in Computer Science program.
6. A student will be officially admitted to candidacy for the Ph.D. in Computer Science after passing the Preliminary Exam and upon completion of all coursework. The student must then complete 24 credit

hours of dissertation credit, restricted to nine hours per semester. When the research is complete and the dissertation is written, a final oral examination will take place to determine if the research conducted is worthy of the Ph.D. in Computer Science degree. The dissertation must conform to high literary and scholastic standards and comply with all the relevant requirements of the Graduate School. The dissertation must represent original research of good quality. From the dissertation, the candidate should publish (or have accepted for publication) a minimum of two articles in peer-reviewed journals. The candidate must be listed as the primary author of at least one of these journal articles.

7. Each candidate must pass a final oral exam over the candidate's dissertation, conducted by the candidate's dissertation committee. The dissertation will be accepted provided the dissertation advisor and at least three of the other four members of the committee so agree
8. Degree requirements, graduation, and time limits are subject to the general guidelines of the Graduate School.

Computer Science Courses

CS401 - Computer Architecture Review of logical circuit design. Hardware description languages. Algorithms for high-speed addition, multiplication and division. Pipelined arithmetic. Implementation and control issues using PLA's and microprogramming control. Cache and main memory design. Input/Output. Introduction to interconnection networks and multiprocessor organization. Prerequisite: CS 320 with a grade of C or better or graduate standing. Credit Hours: 3

CS406 - Basic Linux System Administration This course will be an introduction to the administration of Linux systems, with emphasis on security for networked systems. Topics to be covered include: installation and configuration of Linux distributions, typical maintenance activities, and security measures for networked systems. Students will have access to lab machines for hands on practice. Prerequisite: CS 306 with a grade of C or better or graduate standing. Credit Hours: 3

CS491 - Special Topics Selected advanced topics from the various fields of computer science. Credit Hours: 1-6

CS492 - Special Problems Individual projects involving independent work. Special approval needed from the instructor. Credit Hours: 1-6

CS493 - Seminar Supervised study. Preparation and presentation of reports. Special approval needed from the instructor. Credit Hours: 1-6

CS500 - Computer Architecture Review of logical circuit design. Hardware description languages. Algorithms for high-speed addition, multiplication and division. Pipelined arithmetic. Implementation and control issues using PLA?s and microprogramming control. Cache and main memory design. Input/Output. Introduction to interconnection networks and multiprocessor organization. Students who have completed CS 401 are ineligible to enroll. Prerequisite: CS 320 with a grade of C or better or graduate standing. Credit Hours: 3

CS501 - Advanced Computer Architecture Hardware and software elements of multiprocessors, multicomputers, pipeline and array machines, data flow architecture and other state-of-the-art architectures. Design principles related to machine structures, interconnection networks, control software and hardware, data storage and access. Prerequisite: CS 401. Credit Hours: 3

CS502 - Computer Networks Design and analysis of computer communication networks. Topics to be covered include queuing systems, data transmission, data link protocols, topological design, routing, flow control, security and privacy, and network performance evaluation. Prerequisite: CS 330 with a grade of C or better or graduate standing; CS 306 recommended. Students who have completed CS 440 are ineligible to enroll. Credit Hours: 3

CS503 - Fault-Tolerant Computing Systems An introduction to different aspects of fault-tolerance in computing systems. Redundancy techniques with an emphasis on information redundancy, software

fault-tolerance, coding techniques, algorithm-based fault-tolerance, fault-tolerant interconnection network architecture, DFT techniques, and quantitative evaluation methods. Prerequisite: CS 401. Credit Hours: 3

CS504 - Autonomous Mobile Robots This course is a comprehensive introduction to modern robotics with an emphasis on autonomous mobile robotics. Fundamental of sensors and actuators as well as algorithms for top level control are discussed. Multi-robotics and human-robot interaction issues are explored. A group project is an integral part of this course. Students who have completed CS 404 are ineligible to enroll. Prerequisite: CS 330 with a grade of C or better or graduate standing. Credit Hours: 3

CS505 - Computer Security A broad overview of the principles, mechanisms, and implementations of computer security. Topics include cryptography, access control, software security and malicious code, trusted systems, network security and electronic commerce, audit and monitoring, risk management and disaster recovery, military security and information warfare, physical security, privacy and copyrights, and legal issues. Prerequisite: CS 306 with a grade of C or better or graduate standing. Students who have completed CS 410 are ineligible to enroll. Credit Hours: 3

CS506 - Basic Linux System Administration This course will be an introduction to the administration of Linux systems, with emphasis on security for networked systems. Topics to be covered include: installation and configuration of Linux distributions, typical maintenance activities, and security measures for networked systems. Students will have access to lab machines for hands on practice. Students who have completed CS 406 are ineligible to enroll. Prerequisite: CS 306 with a grade of C or better or graduate standing. Credit Hours: 3

CS507 - Advanced Linux/UNIX Programming This course builds on the knowledge gained in CS 306, to prepare students to do advanced development on Linux/UNIX platforms. The topics studied are critical for achieving high performance in large-scale, high-load networked software systems. These topics include development techniques such as profiling, concurrent programming and synchronization, network programming for high-load servers, advanced I/O alternatives, and IPC such as shared memory. The course will involve the study of code from Open Source projects like Apache and Nginx. The focus will be on the C language, but other languages will also be considered. Students must complete a significant network software project. Prerequisites: CS 306 & CS 335 with grades of C or better, or graduate standing with C language & Linux system programming experience. Students who have completed CS 407 are ineligible to enroll. Credit Hours: 3

CS508 - Applied Cryptography This course is a comprehensive introduction to modern cryptography, with an emphasis on the application and implementation of various techniques for achieving message confidentiality, integrity, authentication and non-repudiation. Applications to Internet security and electronic commerce will be discussed. All background mathematics will be covered in the course. Prerequisite: CS 330 with a grade of C or better and MATH 221 or graduate standing. Students who have completed CS 408 are ineligible to enroll. Credit Hours: 3

CS509 - Ethical Hacking This course will explore the various means that an intruder has available to gain access to computer resources. We will investigate weaknesses by discussing the theoretical background, and whenever possible, actually performing the attack. We will then discuss methods to prevent/reduce the vulnerabilities. This course is targeted specifically for Certified Ethical Hacking (CEH) exam candidates, matching the CEH exam objectives with the effective and popular Cert Guide method of study. Prerequisite: CS 202 or equivalent with a grade of C or better. Students who have completed CS 409 are ineligible to enroll. Credit Hours: 3

CS510 - Wireless and Network Security Advanced security concepts of distributed systems and wireless networks are presented. Topics include IEEE 802.11 security, Wireless Encryption and Authentication, Key Management in Networks, Distributed Denial of Service Attacks, Routing Security, Intrusion Detection and Mobile Code Security. Prerequisite: CS 410 with a grade of C or better or consent of the instructor. Credit Hours: 3

CS511 - Formal Specification of Programming Languages A survey of modeling techniques and Meta languages for the formal specification of the syntax and semantics of high-level programming languages. Prerequisite: CS 311. Credit Hours: 3

CS512 - Declarative Programming An advanced level course on nonprocedural programming with emphasis on logic programming, pure functional programming, and the characteristics of the declarative

style common to these two paradigms. Topics include logic programming, functional programming, implementation consideration for each along with current research topics in the areas. Prerequisite: CS 311. Credit Hours: 3

CS513 - Digital Forensics Cybersecurity has become a ubiquitous concern well beyond finding solutions to post-mortem threat analysis. The course provides a broad overview of security objectives and will cover fundamentals in confidentiality, integrity, and availability. Lectures will offer a broad range of topics on digital forensics. Students will be trained for an investigation mindset. Contemporary tools and techniques for digital forensics and investigations are reviewed. Security for stationary and mobile platforms are foci of current course in both forensic and active modes. There will be multiple hands-on homework and laboratories as well as a practical project as integral part of this course. Students who have completed CS 413 are ineligible to enroll. Prerequisite: CS 330 with a grade of C or better or graduate standing. Credit Hours: 3

CS514 - Advanced Operating Systems Rigorous treatment of advanced topics in operating systems. Multiprocessors and distributed operating systems. Highly concurrent machines. Performance analysis of memory management and scheduling algorithms. Recovery techniques in distributed computation. Security in operating systems. Prerequisite: CS 335 with a grade of C or better. Credit Hours: 3

CS515 - Computational Blockchain This course introduces fundamentals of modern blockchain-based systems as well as cryptocurrency applications. Topics for discussion include consensus and distributed computing, smart contracts, privacy and secrecy, and other relevant computational platforms. Non-currency applications of blockchains, and legal and social implications will be outlined. Students will be required to develop a term project. Prerequisites: CS 330 with grade of C or better or CS 410 or graduate standing. Credit Hours: 3

CS516 - Advanced Compilers A continuation of 416 including advanced topics in lexical and syntax analysis, error recovery, sematic analysis, code optimization and compiler compilers. Prerequisite: CS 416. Credit Hours: 3

CS517 - Programming Distributed Applications This course uses advanced features of the Java programming language to develop networked, distributed, and web-based applications. Topics covered include, but are not limited to, sockets, datagrams, the Java security model, threads, multi-tier architectures, Java RMI, Java database connectivity, and Java-based mobile agents. Prerequisite: CS 306 with a grade of C or better or graduate standing. Students who have completed CS 412 are ineligible to enroll. Credit Hours: 3

CS518 - Distributed Systems A top-down approach addressing the issues to be resolved in the design of distributed systems. Concepts and existing approaches are described using a variety of methods including case studies, abstract models, algorithms and implementation exercises. Students who have completed CS 420 are ineligible to enroll. Prerequisite: CS 335 with a grade of C or better or graduate standing. Credit Hours: 3

CS519 - Network Forensics With the proliferation of wireless networks, security is at odds with privacy and integrity. The course provides a broad overview of security strategies for wireless networks. Topics will range from intrusion detection and network security protocols to collaborative computing. Contemporary tools and techniques for wireless network security are reviewed. A hands-on project will be an integral part of this course. Students who have completed CS 415 are ineligible to enroll. Prerequisite: CS 330 with a grade of C or better or graduate standing. Credit Hours: 3

CS520 - Advanced Topics in Parallel & Distributed Computing An advanced treatment of parallel and distributed computing; review of hardware and software considerations for parallel computation; development and analysis of parallel algorithms (with particular attention to the communication and synchronization costs associated with parallel algorithms); effect of granularity on performance; a comparison of the parallel and distributed programming paradigms including a detailed study of the central features of each approach; software systems for distributed computing including exposure to one or more distributed programming environments; the direction of parallel computing as suggested by recent, high level parallel languages; parallelizing serial programs; parallelizing compilers; future directions of parallel and distributed computing systems. The course will include a student project. Prerequisite: CS 420. Credit Hours: 3

CS521 - Compiler Construction Introduction to compiler construction. Design of a simple complete compiler, including lexical analysis, syntactical analysis, type checking, and code generation. Students who have completed CS 416 are ineligible to enroll. Prerequisites: CS 306 and 311 each with a grade of C or better or graduate standing. Credit Hours: 3

CS522 - Artificial Intelligence I Search and heuristics, problem reduction. Predicate calculus, automated theorem proving. Knowledge representation. Applications of artificial intelligence. Parallel processing in artificial intelligence. Students who have completed CS 436 are ineligible to enroll. Prerequisites: CS 311 and CS 330 each with a grade of C or better or graduate standing. Credit Hours: 3

CS523 - Principles of Virtualization and Cloud Computing Cloud Computing (CC) represents a recent major strategic shift in computing and Information Technology. This course explores fundamental principles, foundational technologies, architecture, design, and business values of CC. Understanding will be reinforced through multiple angles including: analysis of real world case studies, hands-on projects and in-depth study of research developments. Students who have completed CS 425 are ineligible to enroll. Prerequisite: CS 330 with a grade of C or better or graduate standing. Credit Hours: 3

CS524 - Database Systems The course concentrates on the relational model, database design, and database programming. Topics include relational model, relational algebra, SQL, constraints and integrity, transaction support, concurrency control, database design, normalization, backup, recovery, and security. A comprehensive product-like project is an integral part of the course. Prerequisite: CS 330 with a grade of C or better or graduate standing. Students who have completed CS 430 are ineligible to enroll. Credit Hours: 3

CS525 - Security Issues in Cloud Computing This course offers a survey of security and privacy issues in Cloud Computing systems along with an overview of current best practices and available technologies. Threat model as well as practical applications of secure Cloud Computing are explored. Prerequisite: CS 410 or graduate standing. Credit Hours: 3

CS526 - Learning from Data An introduction to classical machine learning theory and practical techniques. Topics to be covered include computational learning theory (VC theory), linear classification and regression models, SVMs and kernel methods, decision trees, the bias-variance tradeoff, overfitting, and regularization. Prerequisite: CS 330 with a grade of C or better or graduate standing. Students who have completed CS 434 are ineligible to enroll. Credit Hours: 3

CS527 - Cyber-Physical Systems The goal of this course is to introduce and develop an understanding of the computing and communication for Internet of Things as a subset of Cyber-Physical systems. Connectivity among devices in our daily lives such as WiFi-enabled thermostats, smarts grids, and driverless cars is ushering in an era of sociality that transcends human social networks to machine to machine networks. Prerequisite: CS 306 with a grade of C or better or graduate standing. Students who have completed CS 431 are ineligible to enroll. Credit Hours: 3

CS528 - Machine Learning and Soft Computing An introduction to the field of machine learning and soft computing. It covers rule-based expert systems, fuzzy expert systems, artificial neural networks, evolutionary computation, and hybrid systems. Students will develop rule-based expert systems, design a fuzzy system, explore artificial neural networks, and implement genetic algorithms. Prerequisite: CS 330 with a grade of C or better or graduate standing. Students who have completed CS 437 are ineligible to enroll. Credit Hours: 3

CS529 - Natural Language Processing This course combines essential ideas from linguistics and artificial intelligence to for machine understanding and generation of language. We will cover language syntax, semantics, and pragmatics and discuss the applications such as information extraction, question answering and dialog systems. Machine learning is the main computational tool to solve NLP problems and will devote a part of the course to discussing ML approaches that model NLP tasks. Deep Neural Networks and their ability in learning representations are also part of our approach to NLP problems. We will discuss learning representations and learn about transformer-based architectures that help in learning rich representations. This course is suitable for students who are willing and able to learn abstract concepts, complete programming assignments, develop a project, and produce a term paper. Prerequisite: CS 330 with a grade of C or better. Credit Hours: 3

CS530 - Advanced Database Systems A detailed treatment of advanced topics in data base systems including, but not limited or restricted to, relational database theory, query optimization, recovery techniques, concurrency control, distributed database systems, security and integrity and database machines. Prerequisite: CS 430. Credit Hours: 3

CS531 - Security in Cyber-Physical Systems The course covers introductory topics in cyber-physical systems security. The goal is to expose students to fundamental security primitives specific to cyber-physical systems and to apply them to a broad range of current and future security challenges. Various tools and techniques used by hackers to compromise computer systems or otherwise interfere with normal operations are explored using tools that are unique to interacting with cyber-physical systems. Restricted to graduate standing or consent of the instructor. Credit Hours: 3

CS532 - Topics in Information Systems A detailed study of two or three topics relevant to information systems. Topics may include but are not limited to sorting, searching, information retrieval and automatic text processing, database security and encryption, distributed databases and data communication. Prerequisite: CS 430. Special approval needed from the instructor. Credit Hours: 3-6

CS533 - Data Mining and Big Data Analysis This course provides a series of comprehensive and in-depth lectures on the core techniques in data mining and knowledge discovery; addresses the unique issues of big data; and discusses potential applications of data mining particularly on big data analysis. Major topics include: data preparation, association mining, classification (and prediction), clustering, characteristics and challenges of big data, and strategies of big data mining and analysis. Prerequisites: CS 330 and CS 430 with grades of C or better or consent of instructor. Credit Hours: 3

CS534 - Big Data Management and Analytics This course provides comprehensive and in-depth discussions of big data management and analytics. Main subjects include computation and programming models, management and analytics algorithms, and platforms/frameworks especially designed for big data. The objective of this course is to equip students with the ability to understand, use, and build big data management and analytics systems or tools. Prerequisites: CS 430 with a grade of C or better or graduate standing. Credit Hours: 3

CS535 - Advanced Machine Learning The purpose of this course is for students to acquire in-depth knowledge of advanced aspects of machine learning. This course will cover topics including classification, clustering, the foundation of deep learning, convolutional Neural Networks, recurrent Neural Networks, and some other advanced topics-deep reinforcement learning and deep generative models. Students will learn the foundations of machine learning, deep learning, and develop skills for performing research to advance the state of knowledge in machine learning. Prerequisites: CS 434 or CS 437 with a grade of C or better. Concurrent enrollment in CS 434 or CS 437 is allowed. Credit Hours: 3

CS536 - Artificial Intelligence II Theorem proving, the Resolution Principle, strategies, and achievements. Program verification. Natural language processing. Other selected topics. Prerequisite: CS 436. Credit Hours: 3

CS537 - Advanced Topics in Expert Systems This course is designed to provide students with advanced topics in expert systems theory. Topics covered include: knowledge representation, methods of inference, reasoning under uncertainty, and inexact reasoning (fuzzy logic). A practical introduction to expert systems programming serves to reinforce and clarify the theoretical concepts. Prerequisite: CS 330 or consent of instructor. Credit Hours: 3

CS538 - Game Theory in Networks Game theoretic concepts apply whenever actions of several players are interdependent. This course will provide an introduction to classic game theory and strategic thinking including dominance, Nash equilibrium, and stability. Social choice, social learning, and online mechanism design are then discussed. We will examine how game theoretic concepts can be used in developing reasoning strategies, i.e., algorithms. Application of game theoretic framework to telecommunication and human networks is an integral part of this course. Restricted to graduate standing or consent of instructor. Credit Hours: 3

CS539 - Agents and Multiagent Systems This is an advanced treatment of fundamental concepts in the design of intelligent autonomous agents and agent systems. Classic agent theories, architectures,

algorithms, and languages are discussed. An agent-based project is an integral part of this course. Restricted to graduate standing or consent of instructor. Credit Hours: 3

CS540 - Advanced Computer Networks Topics include routing protocols used in internet; data compression techniques; telecommunication systems - its services, architecture and protocols; high speed networks; routing protocols in mobile ad-hoc networks; and a detailed performance analysis of different window flow control and congestion control mechanisms using queuing theory. Prerequisite: CS 440 with a grade of C or better, or consent of the instructor. Credit Hours: 3

CS541 - Mobile and Wireless Computing Concepts of mobile and wireless systems are presented. These concepts include, but are not limited to, Routing and Medium Access for Mobile Ad hoc and Wireless Sensor Networks, Mobile IP, Wireless LAN and IEEE 802.11. Hands-on group lab experience is an integral component in the course. Prerequisite: CS 330 with a grade of C or better or graduate standing, or consent of the instructor. Students who have completed CS 441 are ineligible to enroll. Credit Hours: 3

CS542 - Software Engineering Principles, practices and methodology for development of large software systems. Object-oriented principles, design notations, design patterns and coping with changing requirements in the software process. Experiences with modern development tools and methodologies. A team project is an integral part of this course. Prerequisite: CS 330 with a grade of C or better or graduate standing. Students who have completed CS 435 are ineligible to enroll. Credit Hours: 3

CS545 - Bioinformatics Algorithms This course is an introductory course on bioinformatics algorithms and the computational ideas that have driven them. The course includes discussions of different techniques that can be used to solve a large number of practical problems in biology. Prerequisite: CS 330 with a grade of C or better or graduate standing. Students who have completed CS 438 are ineligible to enroll. Credit Hours: 3

CS547 - Introduction to Graph Theory Graph theory is an area of mathematics which is fundamental to future problems such as computer security, parallel processing, the structure of the World Wide Web, traffic flow and scheduling problems. It also plays an increasingly important role within computer science. Topics include: trees, coverings, planarity, colorability, digraphs, depth-first and breadth-first searches. Prerequisite: MATH 349 with a grade of C or better. Students who have completed CS 447 are ineligible to enroll. Credit Hours: 3

CS549 - Introduction to Combinatorics This course will introduce the student to various basic topics in combinatorics that are widely used throughout applicable mathematics. Possible topics include: elementary counting techniques, pigeonhole principle, multinomial principle, inclusion and exclusion, recurrence relations, generating functions, partitions, designs, graphs, finite geometry, codes and cryptography. Prerequisite: MATH 349 with a grade of C or better. Students who have completed CS 449 are ineligible to enroll. Credit Hours: 3

CS551 - Theory of Computing The fundamental concepts of the theory of computation including finite state acceptors, formal grammars, Turing machines, and recursive functions. The relationship between grammars and machines with emphasis on regular expressions and context-free languages. Prerequisites: CS 311 and CS 330 each with a grade of C or better or graduate standing. Students who have completed CS 451 are ineligible to enroll. Credit Hours: 3

CS552 - Advanced Algorithm Design and Analysis An in-depth treatment of the design, analysis and complexity of algorithms with an emphasis on problem analysis and design techniques. Prerequisite: CS 330 with a grade of C or better or graduate standing. Students who have completed CS 455 are ineligible to enroll. Credit Hours: 3

CS553 - Formal Languages and Automata The Chomsky hierarchy of formal grammars and the corresponding classes of automata. Turing machines and basic concepts of computability. Recursive and recursively enumerable languages. Closure properties. Undecidable problems about Turing machines and context-free languages. Deterministic context-free languages and the construction of LR parsers. Prerequisite: CS 451. Credit Hours: 3

CS555 - Computability and Complexity Turing machines and other models of computation. Computable functions. Church's thesis. Solvable and unsolvable problems. Introduction to complexity theory including

the classes P and NP. Polynomial time approximation algorithms for NP-complete problems. Prerequisite: CS 451. Credit Hours: 3

CS570 - Linear Programming Introduction to finding extreme values of linear functionals subject to linear constraints. Topics include: recognition, formulation, and solution of real problems via the simplex algorithm; development of the simplex algorithm; artificial variables; the dual problem and duality theorem; complementary slackness; sensitivity analysis; and selected applications of linear programming. Prerequisite: MATH 221 with a grade of C or better. Students who have completed CS 472 are ineligible to enroll. Credit Hours: 3

CS571 - Optimization Techniques Introduction to algorithms for finding extreme values of nonlinear multivariable functions with or without constraints. Topics include: convex sets and functions; the arithmetic-geometric mean inequality; Taylor?s theorem for multivariable functions; positive definite, negative definite, and indefinite matrices; iterative methods for unconstrained optimization. Prerequisites: MATH 221 and MATH 250 with a grade of C or better. Students who have completed CS 471 are ineligible to enroll. Credit Hours: 3

CS572 - Advanced Topics in Numerical Analysis (Same as MATH 572) Selected advanced topics in Numerical Analysis chosen from such areas as: approximation theory; spline theory; special functions; wavelets; numerical solution of initial value problems; numerical solution of boundary value problems; numerical linear algebra; numerical methods of optimization; and functional analytic methods. Special approval needed from the instructor. Credit Hours: 1-12

CS575 - Numerical Analysis I Introduction to theory & techniques for computation with digital computers. Topics include: solution of nonlinear equations; interpolation & approximation; solution of systems of linear equations; numerical integration. Students will use MATLAB to study the numerical performance of the algorithms introduced in the course. Prerequisites: MATH 221 and MATH 250 with grades of C or better. Students who have completed in CS 475 are ineligible to enroll. Credit Hours: 3

CS580 - Computational Statistics II This course utilizes computational and graphical approaches to solve statistical problems. A comprehensive coverage on modern and classical methods of statistical computing will be given. Case studies in various disciplines such as science, engineering, and education will be discussed. Various topics such as numerical integration and simulation, optimization and maximum likelihood estimation, density estimation and smoothing as well as re-sampling will be presented. Students will be able to create graphical and numerical display based on their data analysis results using R programming language. Prerequisites: MATH 250 and CS 306 or CS 330 with a grade of C or better or graduate standing. Students who have completed CS 480 are ineligible to enroll. Credit Hours: 3

CS583 - Computer Graphics Principles and techniques of computer graphics. Interactive graphics software development using a modern graphics standard such as OpenGL. Topics include: primitives, transforms, clipping, modeling, viewing, texture, lighting and shading. Advanced rendering and modern graphics hardware. Prerequisite: CS 306 with a grade of C or better or graduate standing; MATH 150 and MATH 221 are recommended. Students who have completed CS 485 are ineligible to enroll. Credit Hours: 3

CS584 - User Interface Design and Development Problems and processes in the design of highly usable systems. Understanding stakeholders, requirements, tasks, prototyping, evaluation, guidelines and design process and heuristics. Interactive software concepts and implementation considerations. A group project is an integral part of this course. Prerequisite: CS 306 with a grade of C or better or graduate standing. Students who have completed CS 484 are ineligible to enroll. Credit Hours: 3

CS585 - Advanced Topics in Computer Graphics Study of computer graphics for realistic image synthesis. Object modeling and associated date structures. Advanced rendering techniques such as raytracing and radiosity. Efficiency considerations. Image composition and compression. Current advances and research problems in realistic computer graphics. Prerequisite: CS 485. Credit Hours: 3

CS586 - Pattern Recognition An introduction to the area of pattern recognition and data science. This course will cover basic and advanced theories, algorithms, and practical solutions of statistical pattern recognition. It covers bayesian learning, parametric and non-parametric learning, data clustering,

component analysis, boosting techniques, sequential data, reinforcement learning, and deep learning with neural networks. Credit Hours: 3

CS587 - Software Aspects of Game Development This course focuses on software implementation and development aspects of game production including: software process, system architecture, frameworks, entity management and interaction design, game design, production and business issues as well as technical foundations in graphics modeling and rendering, collision detection, physics, artificial intelligence, and multiplayer techniques. Prerequisite: CS 330 with a grade of C or better or graduate standing. Students who have completed CS 487 are ineligible to enroll. Credit Hours: 3

CS590 - Readings Supervised readings in selected subjects. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-6

CS591 - Special Topics Selected advanced topics from the various fields of computer science. Repeatable on different topics toward degree credit. Credit Hours: 1-3

CS593 - Seminar Preparation and presentation of reports. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-4

CS598 - Graduate Project A practical exercise in the design, implementation, documentation and deployment of a project. A project may be completed through internship, work/study, or a supervised project. For Ph.D. students only, an internship could include face-to-face or online teaching. Credit Hours: 3-9

CS599 - Thesis Special approval needed from the instructor. Credit Hours: 3-9

CS600 - Doctoral Dissertation Dissertation research. Hours and credit to be arranged by the student's academic advisor. Graded S/U only. Restricted to admission to Ph.D. in computer science program. Credit Hours: 1-9

CS601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or graduate project. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis or graduate project hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Computer Science Faculty

Ahmed, Khaled, Associate Professor, Computer Science, Ph.D., Tokyo Institute of Technology, 2004; 2019. Deep learning, big data, computer vision, parallel and distributed computing.

Bhattacharya, Ansuman, Assistant Professor, Radio Physics and Electronics, Ph.D., University of Calcutta, 2016; 2024. Broad areas of Networks and Network Security, especially, Next Generation Networks, Internet-of-Things, Cognitive Radio Networks, Software Defined Networks, Green Communication and Wireless Network Security.

Chen, Zhong, Assistant Professor, Mathematics and Computer Science, Ph.D., Wuhan University of Technology, 2015; 2023. Development, analysis, implementation, and experimental evaluation of big streaming data mining algorithms, deep learning techniques, and applications in healthcare and medical physics.

Gupta, Bidyut, Professor, Computer Science, Ph.D., University of Calcutta, 1986; 1988. Fault-tolerant computing, routing algorithms in computer networks, architecture design of P2P networks, P4P networks, Fog P2P networks.

Hexmoor, Henry, Professor, Computer Science, Ph.D., University of Buffalo, 1996; 2006. Artificial intelligence, Multi-agent systems, cognitive science, knowledge representation and reasoning, cybersecurity, blockchain.

Hossain, Md Belayat, Assistant Professor, Electronic & Computer Science, Ph.D., University of Hyogo, 2018; 2024. Machine Learning, Artificial Intelligence, Generative AI, Computer Vision, Medical Image Processing, and Healthcare Analytics.

Huang, Chun-Hsi, Professor and Director School of Computing, Computer Science, Ph.D., State University of New York at Buffalo, 2001; 2019. Extreme-scale computing and data analytics, computational biology, security and applied algorithmics.

Huang, Xiaolan, Assistant Professor, Computer Science, Ph.D., Southern Illinois University, 2017; 2019. Bioinformatics, big data analytics, machine learning, high performance computing.

Imteaj, Ahmed, Assistant Professor, Computer Science, Ph.D., Florida International University, 2022; 2022. Machine learning and optimization algorithms, distributed algorithms, federated learning, Internet-of-Things, blockchain and cybersecurity.

Jiang, Xiaopeng, Assistant Professor, Computer Science, Ph.D., New Jersey Institute of Technology, 2024; 2024. Machine Learning, Mobile Computing, Artificial Intelligence, Internect of Things.

Liu, Xiaoqing, Professor and Dean College of Engineering, Computing, Technology, and Mathematics, Computer Science, Ph.D., Texas A&M University, 1995; 2020. Cyber argumentation based social media and networking, data analytics based recommendation systems, service computing, cyber physical systems, software engineering, applied artificial intelligence, advanced computing and data applications.

Shahid, Abdur Rahman Bin, Assistant Professor, Computer Science, Florida International University, 2019; 2023. Cybersecurity, artificial intelligence, adversarial machine learning, cyber-physical systems, Internet of Things, Digital Twin, and blockchain.

Sinha, Koushik, Associate Professor, Computer Science, Ph.D., Jadavpur University, 2007; 2015. Mobile computing, wireless ad hoc and sensor networks, complex networks, social computing, crowdsourcing systems.

Tsatsoulis, Constantinos, Professor and Vice Chancellor for Research and Graduate School Dean, Electrical Engineering, Ph.D., Purdue University, 1987; 2022. Multiagent systems, case based reasoning, machine learning, and intelligent image analysis.

Emeriti Faculty

Carver, Norman F., III, Associate Professor, Emeritus, Computer Science, Ph.D., University of Massachusetts, 1990.

Che, Dunren, Professor Emeritus, Computer Science, Ph.D., Beijing University of Aeronautics and Astronautics, Beijing China, 1994.

Danhof, Kenneth J., Professor, Emeritus, Ph.D., Purdue University, 1969.

Hou, Wen-Chi, Professor, Emeritus, Ph.D., Case Western Reserve University, 1989.

Mark, Abraham M., Professor, Emeritus, Ph.D., Cornell University, 1947.

McGlinn, Robert J., Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1976.

Mogharreban, Namdar, Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1989.

Phillips, Nicholas C.K., Associate Professor, Emeritus, Ph.D., University of Natal, 1967.

Wainer, Michael S., Associate Professor, Emeritus, Ph.D., University of Alabama at Birmingham, 1987.

Wright, William. E., Professor, Emeritus, D.Sc., Washington University, 1972.

Counseling and Rehabilitation Education

The Counseling and Rehabilitation Education program offers graduate studies leading to the Master of Science degree with a concentration in Clinical Mental Health Counseling or Clinical Rehabilitation Counseling. The purpose of the graduate program is to prepare professional counselors to engage in professional practice and research in their program areas of interest. The program coursework meets the educational requirements to allow students to apply for certification and licensure in many but not all states. A certificate program that prepares students to sit for the Certified Alcohol Drug Counselor examination in Illinois is offered for graduate students who choose to take the required additional courses.

Mission

The Counseling and Rehabilitation Education (CARE) program promotes the professional development of graduate students to prepare them to provide ethical, culturally inclusive practices that sustain and empower those using counseling services. To meet the mission statement, faculty commit to:

1. Staff professionalism: pledging to maintain rigorous standards for education, training, and clinical practice.
2. Respect for others: demonstrating an appreciation for the uniqueness and cultural differences of each individual.
3. Relevance in teaching: learning experiences will reflect evidence-based practices; they will be relevant and purposeful.
4. Innovation in learning: Graduate students develop understanding through inquiry, use of new technologies, creative problem solving, and critical thinking skills.
5. Expanding graduate student potential: Learning experiences will promote the emotional, relational, and academic potential of all graduate students.

Objectives

Faculty in the program recognize the uniqueness of human beings and are dedicated to helping graduate students obtain the knowledge, skills, and experiences necessary to work with a wide range of clientele. Through a combination of course and clinical experiences, SIUC CARE graduates will demonstrate the behaviors and possess the attributes which are required of competent, professional counselors:

1. CARE graduates demonstrate the content knowledge and dispositions necessary to be effective counselors and social justice advocates in their specialty areas.
2. CARE graduates appropriately respond to the unique combination of cultural variables, including ability, age, beliefs, ethnicity, gender, gender identity, race, level of acculturation, and socioeconomic status, that influence the counseling process.
3. CARE graduates understand that human development occurs in critical contexts that are influenced by a person's race, ethnicity, religion, and factors such as poverty, loss, developmental and physical trauma, and access to resources.
4. CARE graduates conceptualize the career decision-making process as developmentally influenced, and individually determined.
5. CARE graduates value the influence of a strong working alliance built upon honesty and trust, in achieving success in the therapeutic relationship.
6. CARE graduates differentiate between theories of group counseling and utilize effective interventions and leadership skills in facilitating several types of groups.
7. CARE graduates possess an understanding of developmentally and culturally appropriate approaches to assessment and testing.
8. CARE graduates value the use of statistically supported, evidence-based psychoeducational and psychotherapeutic interventions in their practice.
9. CARE graduates who specialize in clinical mental health counseling promote the development of healthy coping capacities and support systems, for individuals who identify as a person with mental illnesses, to assist them in improving their quality of life.
10. CARE graduates who specialize in clinical rehabilitation counseling advocate for the removal of functional, environmental, and social barriers that impede self-sufficiency and reduce the quality of life, for persons who identify as an individual with a disability.

Competitive Admission

Students seeking admission to the M.S. in Counseling and Rehabilitation Education degree program must apply to and meet requirements for admission to the Graduate School and be approved by the CARE program faculty. The following are required to be considered for admission:

- Successful admission to the Graduate School.
- A written essay including a statement of professional goals.
- Three letters of recommendation, preferably including one from a recent instructor.
- GPA of 2.75 or better (A=4.00) on the entire last undergraduate GPA earned at the time of application.

The following is a summary of the CARE process for selecting new students for admittance to the CARE program:

- A review of completed applications by CARE tenure track faculty; faculty review form/ballot. Students who meet standards are given an interview. Students who do not meet entry standards are sent a letter specifying why they were not considered for entry at that time.
- Students participate in individual interviews with all faculty. Students respond to questions related to ethical responsibility, counseling identity, service orientation, social skills, and team work. Following interviews, the faculty compare their ratings of students and decisions on admissions are made. Students are advised when decisions will be made about their admission. Admittance is based on a majority vote from faculty.
- Those students who are not accepted will receive an explanation from the program, and will be advised of their right to appeal a decision for non-acceptance. Students who are not accepted are welcome to reapply the following year.

This program requires a nonrefundable $65 application fee that must be submitted with the application for Admissions to the Graduate School. Specific information about admissions processes, fees and paperwork may be obtained by contacting the CARE Admissions Coordinator via the School of Health Sciences, health.sciences@siu.edu; or the SIU Graduate School at gradscgl@siu.edu.

Retention

The CARE program follows the SIUC Graduate School policies on retention, remediation, and dismissal from the program. The CARE program also has a due process plan that students are familiarized with by their advisors. This information is also included in the CARE Student Manual.

The student is responsible for making arrangements to meet with their advisor every semester to review their academic plan. It is the student's responsibility to contact their advisor to report any challenges to their progress in the program. Faculty will be available to meet with the student on a regular basis to discuss progress and work closely with the student to address challenges to student's successful completion of the program requirements.

Students are required to maintain a 3.0 grade point average, receive an S in all clinical experience courses, and progressing toward their professional goals within the guidelines formulated in the advisement process. Failure to make progress or violations of school, college, or Graduate School regulations may result in dismissal from the program.

In the event a student is believed to be in violation of ethical or professional behavior that is a serious threat to client welfare, faculty or the clinical supervisor may prohibit the student from seeing clients pending initiation and completion of a faculty review. If the faculty determine that formal actions are needed, the review procedure moves directly to a formal hearing with the student. Lack of participation in this hearing by the student shall result in removal of the student from the program. Our remediation procedure is detailed in the Masters Student Handbook.

Specific information about programs and how to apply may be obtained by calling 618/536-7763 or contacting the School of Health Sciences, health.sciences@siu.edu.

Master of Science (M.S.) in Counseling and Rehabilitation Education

The M.S. in Counseling and Rehabilitation Education (CARE) offers two concentrations: clinical mental health counseling or clinical rehabilitation counseling. The course of study consists of a minimum of 61 credit hours and involves a blend of academic and clinical experiences.

As part of the CARE program, counseling students have a shared counseling identity. CARE students acquire the knowledge, skills, and expertise required to establish a successful career as a professional counselor in diverse settings such as agencies, group practices, substance abuse treatment centers, hospitals, residential treatment centers, and employee assistance programs. Additionally, they will take 12 credits of specialty courses in clinical mental health counseling or rehabilitation counseling. All students must complete required coursework with a minimum 3.0 grade point average, and earn at least 9 credits of clinical practice with satisfactory scores. Deferred grades (DEF) must be completed within one year.

M.S. in CARE Core Coursework

- CARE 461: Introduction to Substance Use Disorders & Behavioral Addictions (3 CH)
- CARE 500: Essential Interviewing and Counseling Skills for the Professional Helper (3 CH)
- CARE 505: Professional Counselor Identity and Ethics (3 CH)
- CARE 512: Developmental Processes Across the Lifespan (3 CH)
- CARE 514: Case Management and Treatment Planning (3 CH)
- CARE 541: Counseling Theory (3 CH)
- CARE 542: Career Development Procedures & Practices (3 CH)
- CARE 543: Group Theory & Practice (3 CH)
- CARE 544: Assessment & Testing (3 CH)
- CARE 545: Social Justice and Multicultural Counseling Practice (3 CH)
- CARE 547: Research and Evaluation in Counseling (3 CH)
- CARE 549: Mental Health Diagnosis and Pharmacology (3 CH)
- CARE 550: Pre Practicum (1 CH)
- CARE 548B: Counseling Practicum (3 CH)
- CARE 591: Internship in Counseling (6 CH)
- QUAN 506: Inferential Statistics (4 CH)

Clinical Mental Health Counseling Concentration

To specialize in clinical mental health counseling, a minimum of 12 credit hours is required in addition to the mandatory counseling coursework for the Master's Degree in Counseling and Rehabilitation Education.This concentration program aims to equip students with the skills and knowledge necessary to effectively assess, diagnose, and treat mental health disorders in a clinical setting. Students will also learn how to develop effective treatment plans, perform psychotherapy, and provide counseling services to individuals, couples, families, and groups.

The required program of study is:

- CARE 501: Introduction to Clinical Mental Health Counseling (3 CH)
- CARE 503: Introduction to Marriage, Couple, and Family Counseling (3 CH)
- CARE 535: Special Topics in Clinical Counseling (3 CH)
- CARE 546: Crisis Assessment & Counseling (3 CH)

Clinical Rehabilitation Counseling Concentration

The Concentration in Clinical Rehabilitation Counseling is designed to prepare students to work with individuals who are experiencing physical, developmental sensory, cognitive, and mental health disabilities, in a wide array of public, private and community funded work settings. The course of study for the Concentration in Clinical Rehabilitation Counseling consists of a minimum of 12 credit hours in addition to completion of the core counseling coursework required for the Master’s Degree in Counseling and Rehabilitation Education.

The required program of study is:

- CARE 551: Clinical Rehabilitation Counseling: Theory and Practice (3 CH)
- CARE 513: Medical and Psychosocial Aspects of Disability (3 CH)
- CARE 575: Clinical Rehabilitation Case Management (3 CH)
- CARE 533: Vocational Testing and Measurement (3 CH)

Licensure and Certification

The CARE program prepares students to apply for the following:

- National Certified Counselor (NCC). National Board for Certified Counselors. www.nbcc.org

- Illinois Licensed Professional Counselor. Illinois Department of Financial and Professional Regulation. https://idfpr.illinois.gov/
- Certified Rehabilitation Counselor. Commission on Rehabilitation Counselor Certification crccertification.com

Detailed information related to the educational requirements for licensure and certification is available at professionallicensure.siu.edu

Certificate in Substance Use Disorders and Behavioral Addictions

A sequence of courses is offered within the Counseling and Rehabilitation Education program for students interested in receiving a certificate as a substance use disorders and behavioral addictions counselor **(CADC)**. Students who complete the required course series and academic based internship will be eligible to sit for the CADC exam in Illinois. These courses cannot be used to replace any required courses for the CARE masters degree and they do not constitute a specialization under the CARE program. Students from other graduate programs related to behavioral health may also apply for this certificate program with approval from the CARE Program Director.

Students must complete 15 total credit hours of required coursework, and an academic discipline-based 500 hour internship (eight credit hours) in an approved clinical setting. The course sequence is:

- CARE 461: Introduction to Substance Use Disorders and Behavioral Addictions (3 CH)
- CARE 471: Treatment, Recovery and Relapse Prevention (3 CH)
- CARE 558: Substance Use Disorder Interventions for Special Populations (3 CH)
- CARE 566: Advanced Treatment, Recovery and Relapse Prevention (3 CH)
- One Approved Elective (3 CH)
- Internship (500 hours)

This Certificate Program is accredited by the Illinois Alcohol and Other Drug Abuse Professional Certification Association, Inc. (IAODAPCA), for the purpose of professional certification in Illinois.

Counseling and Rehabilitation Education Courses

CARE405 - Introduction to Aging and Rehabilitation (Same as GRON 405) Introduction to the field of aging, including social, political, economic and legal issues pertinent to an aging society and rehabilitation. Credit Hours: 3

CARE461 - Introduction to Substance Use Disorders and Behavioral Addictions Introduction to the field of substance use and behavioral addictions counseling with an overview of foundation topics underlying professional practice. This course will focus primarily on substance use and behavioral addiction models, medical and psychological consequences, drug classification systems, legislation, and other clinical and public policy issues that may be relevant to the field. Credit Hours: 3

CARE471 - Treatment, Recovery & Relapse Prevention A comprehensive examination of assessment, diagnosis, referral, and treatment processes for substance use disorders and behavioral addictions. The course will cover treatment provided in a variety of settings. Students will acquire skills to provide person-centered treatment, recovery and relapse prevention services, using evidence based practices. The ASAM and the DSM V will be featured as treatment tools. Students will utilize case formulations to gain experience in the treatment plan development and implementation process. Ethical practices will be emphasized. Credit Hours: 3

CARE500 - Essential Interviewing and Counseling Skills for the Professional Helper This course provides the foundation for counselors and other professionals-in-training for understanding the counseling process in a multicultural society including an orientation to wellness, the development of professional characteristics and behaviors that influence the helping process, and a mastery of the

essential interviewing and counseling skills. Restricted to Graduate Standing only. Concurrent enrollment allowed in CARE 541. Credit Hours: 3

CARE501 - Introduction to Clinical Mental Health Counseling This course provides an overview of the history, foundations, practices and ethical and legal issues relevant to clinical mental health counseling. The course does address specific skill attainment in areas of documentation, report writing and program evaluation skills. A grade of B or better required. Credit Hours: 3

CARE503 - Introduction to Marriage, Couple, and Family Counseling This course provides an overview of the history, foundations, practices, and ethical and legal issues relevant to marriage, couple, and family counseling. This course is a required course for clinical mental health and marriage, couple and family counseling and does address specific skill attainment for working with couples and families. A grade of B or better required. Prerequisite: CARE 541 with a grade of B or better. Credit Hours: 3

CARE505 - Professional Counselor Identity and Ethics Professional counseling requires a foundational understanding of the history of the profession, the various counseling specialty areas roles, the ethical standards of practice, use of ethical decision making models, legal, social and political issues and understanding needs of consumers through the lens of diversity and advocacy. Credit Hours: 3

CARE512 - Developmental Processes Across the Lifespan This course covers physical, intellectual, and social development across a person's life. It focuses on practical applications for counseling, education, and related services. Students will learn to apply human development theory and research to their clients and counseling profession. Prerequisite: CARE 541 with a grade of B or better. Credit Hours: 3

CARE513 - Medical and Psychosocial Aspects of Disability A review of the impact of disease and trauma on the human system with special attention on the effects physical limitations and socio-emotional correlates have on human functioning and the rehabilitation process. Special approval needed from the department. Credit Hours: 3

CARE514 - Case Management and Treatment Planning This course covers the various tasks associated with professional case management and treatment planning, emphasizing the importance of collaboration with professionals from diverse fields. Using case studies and role plays, students will explore intake and assessment, develop successful treatment plans, identify needs, make referrals, track progress, and ensure consistent care. Upon completion, students should be able to effectively manage the care of the whole person from initial contact through termination of services. Prerequisite: CARE 500, CARE 505 or concurrent enrollment with a grade of B or better. Credit Hours: 3

CARE533 - Vocational Testing and Measurement An extensive exposure to instruments designed for use with vocational rehabilitation clients. Administration and interpretation of a wide variety of instruments used to gain information to be used in planning for vocational development. Both didactic and experiential to include consideration of information obtained from interviews, tests, and other diagnostic techniques. Special approval needed from the instructor. Credit Hours: 3

CARE535 - Special Topics in Clinical Counseling This course delves into the latest research in clinical counseling, covering a wide range of topics to expand the students' grasp of more complex counseling problems and appropriate interventions. Upon completion of the course, students will possess a strong grasp of how to apply suitable counseling techniques to address varied client needs and circumstances. Prerequisites: CARE 500, 501, 541, or instructor permission with a grade of B or better. Credit Hours: 3

CARE541 - Counseling Theory This course presents an overview of current theories of counseling with a special focus on the philosophical assumptions, key concepts, techniques and practical applications of each approach. Each of the theories will be examined critically such that the student can begin to formulate an integrated personal theory of counseling. Prerequisite: CARE 500 with a grade of B or better or concurrent enrollment. Credit Hours: 3

CARE542 - Career Development Procedures & Practices This course provides an orientation to theoretical, economic, and informational aspects of career guidance. Students will acquire experience in the use of occupational assessment materials to facilitate client career exploration and decision making in counseling. Credit Hours: 3

CARE543 - Group Theory & Practice Focuses on the theory, functions, and techniques of group procedures appropriately applied to decision making, problem solving and resolution of conflict. Major emphasis is given to the dynamics of group behavior, the social-psychological interaction of small groups and their applications to group counseling. Dual emphasis is placed upon interpersonal self-understanding and the familiarity with group procedures. Prerequisite: CARE 500 with a grade of B or better. Credit Hours: 3

CARE544 - Assessment and Testing (Same as REHB 530) Principles and procedures for gathering appraisal and assessment information about people. Theoretical basis for describing and comparing individuals as well as assessing developmental stages and types will be covered. Particular emphasis will be the validity and reliability of data collection methods, interpretation of this information to individuals and procedures for selection of instruments. Credit Hours: 3

CARE545 - Social Justice and Multicultural Counseling Practice This course will place an emphasis on increasing student awareness of their own cultural values, beliefs and biases, in order to become aware of the clients worldview. These skills are the prerequisites of culturally appropriate diagnosis, assessment, and treatment. Prerequisites: CARE 500 and CARE 541, each with a grade of B or better. Credit Hours: 3

CARE546 - Crisis Assessment & Counseling This course is designed to give the counselor a theoretical and practical background in crisis preparation and intervention in a variety of settings. Students will examine relevant research and theory on crisis and resilience, reflect on their personal crisis experiences and begin to develop fundamental crisis intervention skills. This course is both applicable and practical in presentation. Credit Hours: 3

CARE547 - Research and Evaluation in Counseling (Same as REHB 593A) This course provides knowledge of the field of counseling research and specific methods for conducting and critically reading research as well as applications of needs assessment and program evaluation including using computers for data analysis and legal and ethical considerations in research and evaluation. Restricted to advanced standing in counselor education program or rehabilitation counseling program. Credit Hours: 3

CARE548B - Counseling Practicum Practice of individual and group counseling skills with different populations in varied settings. The professional settings depends on the student's interest area. Individual and group supervision are provided. A clinical fee will be assessed. Graded S/U only. Prerequisite: CARE 500, CARE 501, CARE 541, each with a grade of B or better or instructor permission. Restricted to students admitted to the CARE program or the CADC certificate program. Lab fee: $215. Credit Hours: 3

CARE549 - Mental Health Diagnosis and Psychopharmacology This course reviews the diagnostic criteria of the major disorders within the current edition of the DSM, as well as the etiology underlying these disorders. Comorbid conditions, differential diagnosis, and treatment modalities including psycho-pharmacological treatments are addressed. Prerequisites: CARE 500 and CARE 505, or consent of instructor. Credit Hours: 3

CARE550 - Pre Practicum The course specifically emphasizes the development of vital counseling skills, including establishing relationships, conducting basic assessments, setting goals, selecting interventions tailored to the client's needs, and assessing client outcomes. Mastering these skills is of utmost importance before entering the Field Practicum. The course offers a secure and encouraging atmosphere that fosters the acquisition and refinement of both theoretical knowledge and practical skills. Prerequisites: CARE 500 and 505 with a grade of B or better. Credit Hours: 1

CARE551 - Clinical Rehabilitation Counseling: Theory and Practice A didactic and experiential analysis of the underlying theory and techniques of individual and group counseling of individuals with disabilities. Special approval needed from the instructor. Credit Hours: 3

CARE558 - Substance Use Disorder Interventions for Special Populations This course provides a broad understanding of issues and trends in substance use disorder and behavioral addiction within a multicultural society. This course focuses on interventions that reflect the culture specific values and treatment needs of diverse clientele across the lifespan. Topics including the sociocultural challenges, internationality of identities, and culturally competency will be covered. Students who have completed REHB 458 are ineligible to enroll. Credit Hours: 3

CARE566 - Advanced Treatment, Recovery and Relapse Prevention This course builds on knowledge and skills gained in CARE 471 to include advanced case management, diagnosis, and testing and treatment techniques for youth, adults and families. The course includes a focus on co-occurring disorders, the practice of group work, crisis counseling; treatment settings, and pharmacological treatment. Students who have completed REHB 466 may not enroll. Prerequisite: CARE 471. Restricted to graduate standing. Credit Hours: 3

CARE575 - Clinical Rehabilitation Case Management The course will focus on documentation, planning, problem-solving processes, and management techniques associated with the vocational issues for individuals with disabilities. An emphasis is placed on overall goal of quality of life of individuals served. Special approval needed from the instructor. Credit Hours: 3

CARE591 - Internship in Counseling A total of 6 credits (in a minimum two semesters) of supervised internship at an approved site, for 600 clock hours (including 240 hours direct client service in individual, group, and/or family counseling). Internship provides advanced students opportunity to perform a variety of activities expected of a regular employed professional counselor, under supervision of on-site and faculty supervisors. Graded S/U. Prerequisites: CARE 543 and CARE 548B. Credit Hours: 1-3. Credit Hours: 1-3

CARE592 - Independent Study and Investigation For advanced graduate students. Topics of interest to the individual student are studied under supervision of a department staff member. Special approval needed from the department. Credit Hours: 1-6

Counseling and Rehabilitation Education Faculty

Nichols, Jane L., Assistant Professor and Program Director, Ph.D., Michigan State University, 2007; 2012. Interprofessional education, veterans issues, substance use disorders, cannabis use and pain.

Upton, Thomas, Professor, Ph.D., University of Iowa, 2000; 2000. Rehabilitation counseling, advances in rehabilitation, persons with brain injury, disability attitudes, and postsecondary educational accommodations.

Criminology and Criminal Justice

The Criminology and Criminal Justice program, which enjoys a national and international reputation for quality research and education, offers the Master of Arts degree and the Doctor of Philosophy degree in Criminology and Criminal Justice. The program focuses on analyzing criminal justice, social justice, and crime prevention problems and solutions. The program prepares its graduates with the analytic capabilities and problem-solving skills that enable them to succeed in professional careers in criminal justice and related agencies, in policy analysis and research, or in continued graduate or professional education in preparation for an academic career. The focus of the curriculum is theoretically driven, empirically-based criminal justice and crime prevention that takes a problem-solving approach.

Supplementing the academic program, there are opportunities for graduate students to work with faculty members who are conducting research. In addition, students may take Supervised Field Experience credit to blend practical experience with classroom education.

Admission to the Criminology and Criminal Justice Graduate Programs

The Criminology and Criminal Justice program and Graduate School applications form one combined application that should be submitted electronically. Students will be accepted for graduate study in Criminology and Criminal Justice only upon approval by the program as well as the Graduate School.

This program requires a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in Criminology and Criminal Justice. Applicants must pay this fee by credit card.

A more detailed description of the graduate program, as well as information about graduate assistantships and fellowships, may be obtained by contacting:

Office Support Specialist
School of Justice and Public Safety, Criminology and Criminal Justice
Faner Hall – Mail Code 4504
1000 Faner Drive
Southern Illinois University Carbondale
Carbondale, IL 62901

Master of Arts (M.A.) in Criminology and Criminal Justice

Admission

Full consideration for admission to the graduate program requires a grade point average of at least 2.70 (*A* = 4.00) on the entire last undergraduate GPA earned at the time of application and acceptance by the graduate program admissions committee. International applicants should consult the Graduate School web page for additional requirements, including satisfying the English language requirement.

Students who do not have an undergraduate degree in criminology or criminal justice should have a minimum of 12 credit hours in sociology, psychology, political science, or other social sciences for consideration. In cases where these criteria are lacking, additional selected undergraduate courses may be required for acceptance in this program.

Required Core Courses

All candidates for the Master of Arts degree in Criminology and Criminal Justice are required to complete four core courses:

- CCJ 500: Foundations of Criminal Justice (3 CH)
- CCJ 504: Criminological Theory (3 CH)
- CCJ 510A: Research in Criminology & Criminal Justice: Methods and Concepts (3 CH)
- CCJ 510B: Data Analysis & Interpretation (3 CH)

Thesis Option

A total of 30 credit hours is required for the thesis track of the M.A. in Criminology and Criminal Justice. A thesis is required. Students may take a total of six thesis credit hours (CCJ 599 [1-6 CH]); however, only three credit hours are counted towards the degree requirements. An oral defense of the student's thesis is required.

Course-Only Option

A total of 33 credit hours, inclusive of the core courses, is required for the course-only track of the Master of Arts degree in Criminology and Criminal Justice. Students will not be required to complete a thesis or non-thesis project nor will they enroll in non-thesis (CCJ 598) or thesis (CCJ 599) hours.

Accelerated Master's Program

The accelerated M.A. in Criminology and Criminal Justice program allows motivated and high achieving students to complete a program leading to an undergraduate Bachelor of Arts degree and Master of Arts degree with a major in Criminology & Criminal Justice in five years. Students must have completed CCJ 316 and CCJ 317 prior to their senior year. Nine credit hours are double counted toward an undergraduate and a master's degree. The option requires satisfactory completion of twelve credit hours in core Criminology & Criminal Justice courses: CCJ 500, CCJ 504, CCJ 510A, and CCJ 510B. The thesis or course-only option is required for degree completion. A student who chooses the thesis option must complete 18 elective credit hours, three of which can be thesis credit hours (CCJ 599 [1-6 CH]).

With the thesis option, an oral defense of the student's thesis is required. A student who chooses to complete the course-only option must complete 21 elective credit hours.

Doctor of Philosophy (Ph.D.) in Criminology and Criminal Justice

Admission

Admission to the doctoral program in Criminology and Criminal Justice requires a grade point average of at least 3.0 or better (*A* = 4.00) in all prior graduate coursework and the last 60 credit hours of undergraduate study. Applicants must submit scores on the Graduate Record Examination (GRE). Students with an M.A. degree in criminal justice or a related social science at the time of matriculation must still submit GRE scores. International applicants should consult the Graduate School web page for additional requirements, including satisfying the English language requirement.

Students are expected to have completed a master's degree in criminology and criminal justice, or students who do not have a master's degree in CCJ should have a minimum of 12 graduate credit hours in sociology, psychology, political science, or other social science discipline.

Advisement

Initial advisement will be given by the Graduate Program Director. As soon as possible, the student, in consultation with the Graduate Program Director, will request an appropriate member of the program's graduate faculty to serve as the student's academic adviser. It is the student's responsibility to develop, in consultation with their advisor, a plan of study leading to timely completion of coursework, the comprehensive examination(s), and a dissertation. This plan of study will be filed in the student's permanent file. Change of advisor should be filed with the Graduate Program Director.

Program of Study

Students admitted to the Ph.D. in Criminology and Criminal Justice program must have completed a master's degree. Completion of the Ph.D. in Criminology and Criminal Justice program requires completion of seven required courses, two professional development courses, plus five seminars. The Graduate School requires that a minimum of 24 credit hours be taken in residency at SIUC (courses on campus at SIUC and as a doctoral student) after admission to the program and prior to candidacy. Only six credit hours of dissertation may be counted toward the 24 credit hours in residence. Students may only take up to six dissertation credit hours prior to candidacy (other dissertation credit hours taken prior to candidacy will not count toward the degree). Students must take a total of 24 dissertation credit hours. Students who receive an M.A. from SIUC's CCJ program may have already satisfied the core and most of the toolkit seminar requirements; however, they must still meet the 24 credit hour residency requirement.

Core Courses

Doctoral students must complete three core courses that include:

- CCJ 500: Foundations of Criminal Justice (3 CH)
- CCJ 504: Criminological Theory (3 CH)
- CCJ 505: The Nature of Crime (3 CH)

Required Research Tools

The Ph.D. in Criminology and Criminal Justice is a research degree; students must learn the tools and methods of quantitative and/or qualitative research. Students must take four research tools courses that include:

- CCJ 510A: Research in Criminology & Criminal Justice: Methods and Concepts or approved equivalent - Students can petition to waive if already taken (3 CH)
- CCJ 510B: Data Analysis & Interpretation or approved equivalent - Students with prior graduate statistical courses may test to try to opt out of this requirement (3 CH)

- CCJ 510C: Advanced Multivariate Statistics or approved equivalent (3 CH)
- An additional research toolkit course approved by the student's advisor (3 CH)

Professional Development Courses

Doctoral students must complete two professional development courses that include:

- CCJ 525A: Research in Criminology & Criminal Justice (1 CH)
- CCJ 525B: Teaching in Criminology & Criminal Justice (1 CH)

Guided Electives

Guided electives should be chosen in consultation with the student's advisor to meet the career interests of the student. Students must take a minimum of five graduate seminars (minimum of 15 credit hours) based on interests and preparation for the comprehensive examination(s). Students may take independent study or directed readings credit hours for individualized instruction from faculty members on content not available in substantive courses (e.g., a specialized technique of analysis). Students are encouraged to consider the wide array of course offerings at SIU Carbondale.

Comprehensive Examinations

Comprehensive exam(s) are required to advance to candidacy. The faculty will define the timing, scope, and format of the examination system. A final copy of all examinations must be deposited with the program's Office Support Specialist. In the event of a revision or retake, only one revision or retake is permitted per exam.

Dissertation (24 Credit Hours)

Each candidate for the Ph.D. in Criminology and Criminal Justice degree must write a dissertation showing high attainment in independent, original scholarship and creative effort. A total of 24 credit hours is required. A maximum of 6 credit hours of dissertation credit taken prior to passing comprehensive examination(s) will count. The student must successfully defend orally their prospectus, giving the faculty two weeks to review the written prospectus before an oral defense, which shall be open to the public. A student may not hold a dissertation prospectus meeting before successful completion of the comprehensive examination(s).

A dissertation must be written under the direction and approval of a five-member committee of faculty possessing doctorates, one of whom must be from outside the Criminology and Criminal Justice program. The student must successfully defend orally their final draft of the dissertation, giving the faculty two weeks to review the dissertation before an oral defense, which shall be open to the public. The faculty are not required to meet for a prospectus or dissertation defense during holidays or summer months. The success of a final oral examination devoted primarily to a defense of the dissertation and open to the public will complete the requirements for the Doctor of Philosophy in Criminology and Criminal Justice degree. A final copy of the dissertation must be filed with the program and Graduate School.

Residency Requirement (24 Credit Hours)

The residency requirement for the doctorate must be fulfilled after admission to the doctoral program and before formal admission to doctoral candidacy, which occurs with successful completion of the comprehensive examination(s). The residency requirement is satisfied by completion of 24 credit hours of graduate credit on campus as a doctoral student within a period not to exceed four calendar years.

Criminology and Criminal Justice Courses

CCJ411 - Risk Assessment and Prediction in Criminal Justice An examination of the theories, application, and research relevant to the assessment and prediction of negative events and threats in the criminal justice system. The principles guiding the identification, classification, evaluation, and potential

interventions of high risk individuals and groups will be covered. The course also reviews the evidence of effectiveness associated with classification and assessment tools. Prerequisites: CCJ 101, CCJ 290, and (CCJ 316 or PSYC 211), or consent of instructor. Credit Hours: 3

CCJ415 - Prevention of Crime and Delinquency Multidisciplinary analysis of the functions, goals, and effectiveness of measures to forestall delinquency and crime. Etiology of delinquent behaviors as related to community institutions such as police, courts, corrections, mental health clinics, schools, churches, and citizen groups. Prerequisite: CCJ 101, CCJ 290 and (CCJ 316 or PSYC 211), or consent of instructor. Credit Hours: 3

CCJ418 - Criminal Violence An examination of historical, comparative, cultural and structural aspects of homicide, robbery, rape and assault. Explores patterns, trends and key correlates. Prerequisite: CCJ 101, CCJ 290 and (CCJ 316 or PSYC 211), or consent of instructor. Credit Hours: 3

CCJ460 - Women, Crime, and Justice (Same as SOC 461 and WGSS 476) A study of women as offenders, as victims, and as workers in the criminal justice system. Credit Hours: 3

CCJ461 - White-Collar Crime An examination of the physical and financial harm caused by wayward corporations and business employees from both theoretical and empirical perspectives. Emphasis is placed on ethics, theory, legal decision-making and the regulatory monitoring and control of illegal corporate activity. Credit Hours: 3

CCJ473 - Juvenile Delinquency (Same as SOC 473) An in-depth study of theories of delinquency, analytical skills useful in studying delinquent offenders, systematic assessment of efforts at prevention, and control and rehabilitation in light of theoretical perspectives. Prerequisite: CCJ 101, CCJ 290 and (CCJ 316 or PSYC 211), or consent of instructor. Credit Hours: 3

CCJ475 - Mass Supervision and Collateral Consequences Examination of trends and consequences in correctional supervision and incarceration. Emphasis on contributors to mass supervision, individual and broad effects of the policies, and differential impact on populations. Prerequisites: CCJ 101, CCJ 290 and (CCJ 316 or PSYC 211). Credit Hours: 3

CCJ480 - Effective Correctional Practices (Same as PSYC 480) Exploration and evaluation of correctional intervention strategies developed for the sentencing of adjudicated persons. Particular emphasis on examining empirical research literature on effective correctional practices, including programs currently implemented in institutional setting, alternatives to institutional corrections, and community based programs. Prerequisites: CCJ 101, CCJ 290, and (CCJ 316 or PSYC 211), or consent of instructor. Credit Hours: 3

CCJ492 - Contemporary Issues in Criminology and Criminal Justice A forum, geared toward 3rd Year and 4th Year students majoring in Criminology and Criminal Justice, that focuses on criminal justice issues of concern to students and faculty. May re-enroll for a maximum of 6 credits. (Maximum 3 semester hours per term). Prerequisite: CCJ 101, CCJ 290, (CCJ 316 or PSYC 211), or consent of instructor. Past topics include: Crime and Place, Consequences of Mass Incarceration, Myth-busting in Criminology and Criminal Justice, and Race and Crime. Credit Hours: 3

CCJ500 - Foundations of Criminal Justice An exploration of the nature and scope of the criminal justice process. Criminal justice operations and behavior are assessed in context of the major theoretical, historical, normative and organizational influences found in the field. Credit Hours: 3

CCJ504 - Criminological Theory Multidisciplinary study of biogenic, psychogenic and sociogenic explanations for criminal behavior relevant to policy-making and practice in criminal justice. Special approval needed from the instructor. Credit Hours: 3

CCJ505 - The Nature of Crime This course examines the extent, distribution, and correlates of criminal offending and patterns of crime. It emphasizes the review and application of recent empirical research to the development of theories on crime causation, as well as public policy and crime prevention programs. Credit Hours: 3

CCJ508 - Criminal Procedure An introduction to the procedural aspects of criminal law pertaining to police powers in connection with the laws of arrest, search and seizure, the exclusionary rule,

civil liberties, eaves-dropping, confessions, and related decision-making factors. Students who have completed CCJ 408 are ineligible to enroll. Credit Hours: 3

CCJ510A - Research in Criminology & Criminal Justice: Methods & Concepts Principles and methods of scientific inquiry are examined. Special emphasis is applied to research design and data collection issues. Credit Hours: 3

CCJ510B - Data Analysis & Interpretation Data management, univariate, bivariate, and multivariate analyses, and specialized concerns with criminal justice data are emphasized. Credit Hours: 3

CCJ510C - Advanced Multivariate Statistics The foundations of multivariate analysis, including assumptions about data distributions and regression diagnostics. Students will be introduced to various multivariate methods. Prerequisite: CCJ 510B or instructor permission. Credit Hours: 3

CCJ517 - Advanced Topics in Quantitative Research Detailed coverage of quantitative analytic procedures used in criminology and criminal justice. Specific topics covered will vary (students should consult instructor). Sample topics: advanced ordinary least squares, time series analysis, structural equation modeling, and analysis of limited dependent variables. Prior knowledge of correlation and regression is essential. Prerequisites: CCJ 510A and CCJ 510B, or instructor permission. Credit Hours: 3

CCJ518 - Qualitative Research Methods An introduction to qualitative research techniques (i.e., interviewing, ethnography, in situ observation, case studies). Emphasis is placed on the epistemological foundation for understanding the nature and purpose of these methods. Students are given opportunities to practice discussed techniques. Prerequisite: CCJ 510A or instructor permission. Credit Hours: 3

CCJ519 - Independent Study Independent research supervised by a faculty member in a selected area of criminal justice or criminology. Special approval needed from a faculty sponsor. May re-enroll for a maximum of nine credits. (Maximum 3 semester hours per term). Credit Hours: 1-3

CCJ520 - Readings in Criminology and Criminal Justice In-depth advanced readings in areas not covered in other graduate criminology and criminal justice courses. The student must submit a statement describing the topic and relevant reading materials to the faculty member sponsoring the student's readings. Must have approval of faculty sponsor. May re-enroll for a maximum of nine credits. (Maximum 3 semester hours per term). Credit Hours: 1-3

CCJ521 - Advanced Readings and Research This course is an opportunity for students to engage in high-level inquiry focusing on an area of specialization within criminology and criminal justice. Projects will draw upon areas of interest to the student. The aim of the course is to facilitate the development of a research project, including but not limited to non-thesis papers, theses, dissertations and other independent research efforts. Credit Hours: 3

CCJ525A - Research in Criminology & Criminal Justice Focuses on the development of research and publication skills for graduate students. The course is designed to introduce students to the various processes related to grant-writing and publication, as well as research dissemination. Credit Hours: 1

CCJ525B - Teaching in Criminology & Criminal Justice An examination of pedagogical literature and practices to develop teaching and instruction in criminology and criminal justice. Credit Hours: 1

CCJ540 - Seminar in Theory and Practice of Crime Prevention Recent crime prevention initiatives are examined, with emphasis on the following issues: historical development of the initiatives, their grounding in theories of crime and human behavior, their effectiveness, their unintended consequences, and the values they serve. Special approval needed from the instructor. Credit Hours: 3

CCJ550 - Seminar in Juvenile Justice and Delinquency An exploration of contemporary problems and policy issues in juvenile justice and juvenile delinquency. Special approval needed from the instructor. Credit Hours: 3

CCJ562 - Law and Social Control An in-depth examination of the major social science perspectives on law and extra-legal social control. Topics covered may include: theory, social change, law making, informal social control and international law. Credit Hours: 3

CCJ563 - Victims of Crime An examination of the extent and nature of victimization, theories about the causes of victimization, the effects of crime on victims and services available to deal with those effects, victims' experiences in the criminal justice system, the victims' rights movement, and alternative ways of defining and responding to victimization. Students who have completed CCJ 462 are ineligible to enroll. Credit Hours: 3

CCJ571 - Seminar in Punishment and Corrections Examines the theory and philosophy of punishment and the practice of corrections in the United States. Attention is given to the implications of competing penal philosophies, their viability and application in the correctional system. Special approval needed from the instructor. Credit Hours: 3

CCJ572 - Policing Communities A study of the theories underlying modern police reform, how these theories have altered practice, the challenges of implementing and sustaining police reform, and the outcomes of such efforts. Students who have completed CCJ 410 are ineligible to enroll. Credit Hours: 3

CCJ576 - Policy Analysis in Criminology and Criminal Justice Examination of the public policy process in criminology and criminal justice, and the role of policy analysis in the development, planning, and implementation of new and revised policies and programs. Credit Hours: 3

CCJ584 - Administration and Management in Criminal Justice Focuses on the development and history of administrative theory and its impact on management techniques involving administration of justice bureaucracies. Credit Hours: 3

CCJ587 - Seminar in Policing Multidisciplinary study of the philosophical premises, theoretical implications and functions of contemporary policing. Special approval needed from the instructor. Credit Hours: 3

CCJ592 - Advanced Seminar in Criminology and Criminal Justice Seminars of varied content for advanced students. May be repeated with different topics up to a maximum of six credits. Special approval needed from the instructor. Credit Hours: 3-6

CCJ595 - Supervised Field Experience Experience in law enforcement agencies, juvenile courts, probation and parole departments, correctional institutions, delinquency control programs and public or voluntary agencies. Orientation sessions precede placement. Student must submit internship application during the first thirty days of the preceding spring or fall semester. Graded S/U only. Only three credit hours may count toward post-baccalaureate studies in CCJ. Special approval needed from the instructor. Credit Hours: 1-6

CCJ598 - Non-Thesis Option Graded S/U or DEF only. Special approval needed from a faculty sponsor. Credit Hours: 3

CCJ599 - Thesis Graded S/U or DEF only. Special approval needed from a faculty sponsor. Credit Hours: 1-6

CCJ600 - Doctoral Dissertation Hours and credit to be arranged by director of graduate studies. Graded S/U or DEF only. Maximum of 24 hours used toward degree. Credit Hours: 1-12

CCJ601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Criminology and Criminal Justice Faculty

Cho, Sujung, Associate Professor, Criminal Justice, Ph.D., University of Cincinnati, 2015; 2017. Juvenile delinquency, bullying/peer victimization, cross-national and comparative criminology, advanced statistical methodology.

Giblin, Matthew J., Professor and Director of the School of Justice and Public Safety, Criminal Justice, Ph.D., Indiana University, 2004; 2005. Criminal justice theory, administration and management in criminal justice.

Hibdon, Julie, Associate Professor, Criminology, Law, and Society, Ph.D., George Mason University, 2011; 2012. Crime and place, environmental criminology, policing.

Hillyard, Daniel, Associate Professor, Law, Social Ecology, J.D., Ph.D., University of California, Irvine, 2001; 2002. Law and social change, law and social control, law and morality.

Kochel, Tammy Rinehart, Professor and Associate Dean of the College of Health and Human Sciences, Justice, Law, and Crime Policy, Ph.D., George Mason University, 2009; 2009. Police legitimacy and procedural justice, evidence-based policing strategies such as hot spots policing and focused deterrence, neighborhood ecology and collective efficacy.

Kroner, Daryl G., Professor, Psychology, Ph.D., Carleton University, 1999; 2008. Offender assessment, violent and criminal risk, correctional intervention, mentally ill offenders, criminal desistance.

Mullins, Christopher, Professor and Associate Dean of the College of Health and Human Sciences, Criminology and Criminal Justice, Ph.D., University of Missouri-St. Louis, 2004; 2008. Violence, atrocity violence, international criminal law and courts, historical criminology.

Narag, Raymund, Associate Professor, Criminal Justice, Ph.D., Michigan State University, 2013; 2012. Criminal victimization, youth violence, correctional administration, qualitative research

Pleggenkuhle, Breanne, Associate Professor, Criminology and Criminal Justice, Ph.D., University of Missouri-St. Louis, 2012; 2012. Corrections, gender, community context, reentry.

Reale, Kylie, Assistant Professor, Criminology, Ph.D., Simon Fraser University, 2022; 2023. Violence prevention and intervention, correctional policy, criminal careers, criminal investigations.

Terpstra, Brice, Assistant Professor, Criminology and Criminal Justice, Ph.D., Arizona State University, 2024; 2024. Behavioral health outcomes, mental illness and crime, life-course theory, community corrections.

Emeriti Faculty

Garofalo, James, Professor, Emeritus, Criminal Justice, Ph.D., State University of New York at Albany, 1978.

LeBeau, James L., Professor, Emeritus, Geography, Ph.D., Michigan State University, 1978.

McDermott, M. Joan, Associate Professor, Emerita, Criminal Justice, Ph.D., State University of New York at Albany, 1979.

Curriculum and Instruction

The School of Education offers three graduate degree programs in Curriculum and Instruction: the Master of Science in Education (M.S.Ed.) in Curriculum and Instruction, the Master in Teaching in Curriculum and Instruction Secondary Education (M.A.T.) and the Doctor of Philosophy (Ph.D.) in Education. Those pursuing the M.S.Ed. must select either one of the program areas in Curriculum and Instruction. Those pursuing the Ph.D. must select from one of the following program areas: curriculum, instruction, and assessment; human development and family studies; language, literacies, and culture; STEM education; or teacher leadership.

Endorsements

The School of Education also offers State of Illinois endorsements as reading teachers and K-12 reading specialists. Endorsement opportunities are available to M.S.Ed. in Curriculum and Instruction and Ph.D. in Education candidates as part of their specialty area preparation. Endorsements in specific secondary level courses (e.g., chemistry, physics, and psychology) are also available. All such endorsements are arranged through the state and may require additional course work as well as a state-level transcript analysis.

Admission

Applicants for graduate programs must submit admission forms for both the Graduate School and the School of Education. General requirements for admission to graduate programs are provided by the Graduate School. A selection and review committee in the School of Education also screens applicants on the basis of prior undergraduate and graduate work, grade point average, as well as standardized test scores, work experience, and letters of recommendation as needed. The committee may recommend admission for candidates with specific academic deficiencies if, in its opinion, a candidate's application materials demonstrate unusual professional promise.

Application materials may be obtained by addressing a request to: Coordinator of Graduate Studies, Curriculum and Instruction, Mail Code 4610, Southern Illinois University, 625 Wham Drive, Carbondale, IL 62901. Specific information may be obtained by calling 618-536-2441 or by emailing currinst@siu.edu. All programs require a nonrefundable $65 application fee that must be submitted with the application for Admission to Graduate Study in Curriculum and Instruction. Applicants must pay this fee by credit card.

Master of Science in Education (M.S.Ed.) in Curriculum and Instruction

The Master of Science in Education degree in Curriculum and Instruction requires the completion of a minimum of 36 credit hours of course work. The student must also meet Curriculum and Instruction core course requirements, research requirements, and elective requirements. No more than six credit hours earned at another institution may be accepted toward this degree. It is recommended that transfer courses be from institutions accredited by national organizations (i.e., CAEP, NCATE, or TEAC). All transfer credit hours must be approved by the coordinator of graduate studies.

Each candidate's program is planned in consultation with a faculty adviser with consideration for the student's interests, experience, and specialty area. Nondeclared graduate students are advised to consult with the School of Education Director of Graduate Programs concerning admission to the M.S.Ed. in Curriculum and Instruction program.

Admission and Retention

Admission to the M.S.Ed. in Curriculum and Instruction program requires a 2.7 or better (A = 4.00) on the entire last undergraduate GPA earned at the time of application. A TOEFL score of at least 550 (220 computerized score) is also required for international students and must be no more than two years old. Students must maintain an overall 3.0 graduate GPA to be retained in the M.S.Ed. in Curriculum and Instruction program. The progress of each student is reviewed periodically. Students who do not make satisfactory progress, or who violate the regulations of the program, school, or university may be dropped from the program.

Program Requirements

The M.S.Ed. in Curriculum and Instruction requires a professional core of 21 credit hours and five elective courses in a focus area. The professional core consists of: CI 500, Introduction to Research Methods in Education; CI 503, Introduction to the Curriculum; and CI 504, Systematic Approaches to Instruction; CI 514, Advanced Human Development and Learning; CI 519, The Study of Cultural Diversity in Education and Family Services; CI 544, Action Research Methods; and CI 594A-T, Practicum. All professional core courses must be completed with a grade of C or better, and an overall grade point average of 3.0 must be obtained for the professional core. Options for electives vary, depending on the student's professional interests, but must be approved by the student's academic advisor.

Master of Arts in Teaching (M.A.T.) in Curriculum and Instruction Secondary Education

SIUC's Master of Arts in Teaching (M.A.T.) in Curriculum and Instruction Secondary Education program is a degree program intended for persons who have successfully completed an undergraduate degree

(Bachelor of Arts, Bachelor of Science, or Bachelor of Fine Arts) in the liberal arts or sciences and desire to pursue licensure for teaching at the secondary school level. Those enrolled engage in a year-long internship (two semesters) in a public school setting while also completing University-based studies culminating in the Master's degree.The M.A.T. in Curriculum and Instruction Secondary Education is designed as a high-quality, technology-rich, accelerated teacher license program; time-to-degree is approximately fifteen (15) months, including one full academic year and two adjacent or contiguous summer sessions of course work. Those holding undergraduate degrees in teacher education are ineligible for this program.

M.A.T. in Curriculum and Instruction Secondary Education candidates select a subject area most compatible with coursework in the major content area that was completed during a bachelor's degree program. Secondary subject area options include:

- English Language Arts
- Mathematics
- Science-Biology
- Science-Chemistry
- Social Science-History

Upon graduation from the program, candidates will be licensed to teach in a school system in Illinois or in a state offering reciprocity. They will be broadly prepared in their content areas and will possess leadership experience pertinent to the public school setting. M.A.T. in Curriculum and Instruction Secondary Education candidates advance through the program as members of an interdisciplinary cohort of no more than 25 students and are required to work collaboratively within that cohort to investigate and make recommendations about school-based programs and issues using action research methodologies.

Admission

Admission to the M.A.T. in Curriculum and Instruction Secondary Education program is highly competitive. Applicants with undergraduate content area backgrounds in areas currently experiencing national teacher shortages will receive priority in admission decisions, but other applicants meeting admission requirements will be considered. In addition to materials required for general admission to the School of Education and the Graduate School, M.A.T. in Curriculum and Instruction Secondary Education applicants must submit: (1) a résumé; (2) original letters of reference from two persons familiar with the candidate's undergraduate performance or who can comment specifically about the candidate's ability to succeed in an accelerated graduate-level degree program; (3) an overall undergraduate grade point average of 2.75 or better (based on a 4.00 scale) at the time of application. In the case of graduate students who have completed 12 or more credit hours of graduate level course work, the graduate GPA is used, and it must meet or exceed 3.00 (based on a 4.00 scale).

M.A.T. in Curriculum and Instruction Secondary Education Admissions Committee members consider a candidate's undergraduate major, past performance in the content area for which licensure is sought, performance in other relevant course work, professional experience, strength of recommendations, test results, and any available anecdotal information in prioritizing candidates for acceptance to the program. In years where the number of qualified candidates exceeds the program's capacity to handle projected enrollment numbers, candidates may be asked to attend an interview for use in making final selection decisions. When space is available in any cohort, non-declared graduate students may be permitted to enroll in M.A.T. in Curriculum and Instruction Secondary Education courses offered during summer 1; continued enrollment in M.A.T. in Curriculum and Instruction Secondary Education related course work as a non-declared graduate student, however, is contingent on meeting or exceeding published admission criteria and obtaining full admission status. Contingent enrollment may be offered by the M.A.T. in Curriculum and Instruction Secondary Education Committee in extenuating circumstances but is not guaranteed and does not constitute a promise of admission to the M.A.T. in Curriculum and Instruction Secondary Education program.

Retention and Graduation

Students in the M.A.T. in Curriculum and Instruction Secondary Education program are expected to complete the degree in two intersession/summer terms and one academic year, although variations in this progression are occasionally necessary. To complete degree requirements within the normal 15 months sequence, candidates enroll in blocks of courses with the following suggested sequence. The

candidate must complete the appropriate state content test and the edTPA or equivalent state licensure requirements.

Intersession 1:

- CI 543: Fundamentals of Teaching and Learning (3 CH)

Summer 1:

- CI 500: Introduction to Research Methods in Education (3 CH)
- SPED 408: Characteristics and Methods for Teaching Exceptional Children (3 CH)
- CI 561: Disciplinary and Content Area Literacy Instruction for Secondary and Adult Education (3 CH)

Fall:

- CI 544: Action Research Methods (3 CH)
- CI 545: Literacy Instruction for Culturally and Linguistically Diverse Students (3 CH)
- EDUC 500: Clinical Experiences in Teaching (3 CH)
- Content Area Methods (3-6 CH)[1]
- Content Area Elective (3-4 CH)[1]

Spring:

- EDUC 501: M.A.T. Graduate Student Teaching (6 CH)
- Content Area Elective (3 CH)[1]

Intersession 2:

- CI 571: Secondary School Curriculum (3 CH)

Summer 2:

- CI 574: Advanced Teaching Methods (3 CH)
- CI 533: Instructional Leadership (Teacher Leadership) (3 CH)
- CI 549: New Literacies & Emerging Technologies in a Participatory Culture (3 CH)

To remain in the program, M.A.T. in Curriculum and Instruction Secondary Education candidates must maintain in a minimum overall grade point average of 3.00 and obtain successful summative evaluations at the completion of EDUC 500 and EDUC 501. To graduate, the candidate must: (1) prepare and share publicly a professional portfolio to demonstrate professional growth throughout the degree program; (2) achieve the equivalent of a 3.00 GPA in EDUC 500 and EDUC 501; and (3) successfully complete the edTPA or equivalent state licensure requirements.

[1]Content area methods and elective courses vary by area of concentration and credit hour assignment and must be approved by the M.A.T in Curriculum and Instruction Secondary Education Coordinator. In addition, they may or may not carry graduate credit, but are required for program completion and licensure.

Curriculum and Instruction Courses

CI401 - Designing Digital Games and Simulations This course focuses on the design and development of simulated environments (such as digital games and virtual worlds) and how they may be used for the delivery of online learning and instruction. The production process will focus on the use of suitable technologies and game development toolkits to create immediately usable prototypes for learning showcases. Credit Hours: 3

CI407C - Diagnostic Teaching Strategies for Classroom Teachers-Language Arts Diagnostic instruments and teaching techniques with an emphasis on understanding and teaching students underachieving. Prerequisite: CI 423 or consent of instructor. Credit Hours: 3

CI407E - Diagnostic Teaching Strategies for Classroom Teachers-Mathematics Diagnostic instruments and teaching techniques with an emphasis on understanding and teaching students underachieving. Prerequisite: CI 322 or consent of instructor. Credit Hours: 3

CI407F - Diagnostic Teaching Strategies for Classroom Teachers-Reading Diagnostic instruments and teaching techniques with an emphasis on understanding and teaching students who are underachieving. Prerequisite: ELED 432 and ELED 433 with grades of C or better or consent of instructor. Credit Hours: 3

CI409 - Curriculum Planning and Assessment in the Arts A graduate-level course designed to explore curriculum development for the visual and performing arts (e.g., drama, painting, drawing) and assessment strategies for the elementary and middle school level. Credit Hours: 1-3

CI410 - Creative Writing in the Public School Techniques of encouraging creative writings in the schools. Credit Hours: 2

CI412C - Improvement of Instruction in Early Childhood Education (Preschool-Grade 3)-Language Arts Examines recent findings, current practices, and materials used in early childhood education. Prerequisite: specialized methods course for the field of study selected by the student. Credit Hours: 3

CI412D - Improvement of Instruction in Early Childhood Education (Preschool-Grade 3)-Science Examines recent findings, current practices, and materials used in early childhood education. Prerequisite: specialized methods course for the field of study selected by the student. Credit Hours: 3

CI412E - Improvement of Instruction in Early Childhood Education (Preschool-Grade 3)-Mathematics Examines recent findings, current practices, and materials used in early childhood education. Prerequisite: specialized methods course for the field of study selected by the student. Credit Hours: 3

CI412F - Improvement of Instruction in Early Childhood Education (Preschool-Grade 3)-Reading Examines recent findings, current practices, and materials used in early childhood education. Prerequisite: specialized methods course for the field of study selected by the student. Credit Hours: 3

CI412G - Improvement of Instruction in Early Childhood Education (Preschool-Grade 3)-Social Studies Examines recent findings, current practices, and materials used in early childhood education. Prerequisite: specialized methods course for the field of study selected by the student. Credit Hours: 3

CI415 - Teaching Middle School Mathematics [Grades 4-8] Examines current approaches to middle school mathematics and the use of meaningful instructional materials, quantitative literacy, and technologies for problem solving. Students will share experiences and design activities for classroom use. Prerequisite: CI 322 and an overall GPA of at least 2.75, or consent of instructor. Credit Hours: 3

CI421 - Family Literacy Programs, Policies, and Practices This course offers an in-depth look at family literacy programs, policies, and practices. The course adopts a sociocultural underpinning to explore how family literacy can contribute to the literacy growth of families and re-center parents as their children's first teachers. Topics include family diversity and funds of knowledge, the basic components of family literacy programs, opportunities for literacy learning, professional development and program improvement, and advocacy. Participants will gain an understanding of family literacy in historical, educational, social, and political contexts. Credit Hours: 3

CI422 - Teaching Reading in the Elementary School Examination of the reading process with emphasis on the factors and conditions that affect reading. Emphasis also on the formulation of a philosophy of reading and its implications in relation to methods, materials, organizational procedures, and evaluation techniques. Enrollment restricted to consent of department. Credit Hours: 3

CI423 - Teaching Elementary School English Language Arts This course covers the oral and written communication processes with emphasis on the English language arts in the elementary school. Focus on the fundamentals of academic and social language of all users of English. Effective planning, delivery,

and assessment of literacy lessons align with the Illinois Common Core learning standards for writing, speaking and listening, and reading and that accommodate all learners in the elementary classroom, including English Language Learners (ELL) and students with Individualized Education Programs (IEP). Prerequisite: Communication Studies 101 or equivalent, C or better in CI 321 and CI 435, or consent of instructor. Note: Elementary Education majors must take CI 422 concurrently with this class. Credit Hours: 3

CI428 - Inquiry Skills for Teaching Junior and Senior High School Science The major focus will be the application of inquiry skills as used in all areas of science instruction at the junior and senior high school levels; students will be expected to demonstrate mastery of basic and integrated science process skills through conducting and reporting results of science investigations. Credit Hours: 3

CI429 - Instructional Methods for the Primary Child: Social Studies and Science Emphasis on creating optimum learning environments, planning for instruction, models of teaching, integrated learning and appropriate instructional methods in science and social sciences, grades 1-3. Concurrent enrollment in CI 430 required. Prerequisites: ECFS 318A,B, CI 324, or consent of instructor. Credit Hours: 3

CI430 - Instructional Strategies for the Primary Child: Mathematics Emphasis on creating optimum learning environments, integrated learning and appropriate instructional methods in the content area of mathematics, grades 1-3. Concurrent enrollment in CI 429 required. Prerequisite: ECFS 318A,B, CI 324, with grades of C or better, or consent of instructor. Credit Hours: 3

CI435 - Literature and Informational Texts for Children and Early Adolescents Students will engage with studies of various types of literature and informational texts as well as text exemplars from the common core initiative; analysis of literary qualities; selection of literature for various developmental needs of children in preschool, elementary school, and middle level settings; and research-based presentations of books and other media for use in various school settings. Prerequisite: C or better in English 101 and 102, and overall GPA of 2.75; or consent of instructor. Restriction: Admittance to the Teacher Education Program. Lab fee: $10. Credit Hours: 3

CI462 - Middle and Junior High School Programs Focuses on the development of middle and junior high school curriculum and the identification of instructional activities for early adolescents. Emphasis is placed on development of literacy strategies, developmentally appropriate teaching strategies, interdisciplinary unit planning, teaming, and technologies and materials appropriate for teaching early adolescents, ages 10-14. Prerequisite: EDUC 313 or consent of instructor. Credit Hours: 3

CI463 - Meeting the Social and Emotional Needs of Gifted Children Deals with strategies for meeting the social and emotional needs of gifted children in the classroom. In particular, this course focuses on low-incidence gifted students, including underachievers, minorities and females. The course will not only cover particular curriculum and instruction strategies designed for this population and will emphasis strategies for teachers to be more facilitative in assisting these students to accept and realize their potential. Prerequisite: CI 467 or consent of instructor. Credit Hours: 3

CI466 - Documenting Accomplished Teaching This course will help teachers understand and gain requisite skills for participation in the National Board for Professional Teaching Standards (NBPTS) certification process. As part of learning to understand and document NBPTS standards, teachers will describe, analyze and reflect on drafts of written commentaries, videotapes of small and large group lessons, and student work. Credit Hours: 3

CI467 - Methods and Materials in the Education of the Gifted Content focused on the most appropriate instructional strategies and materials to be utilized with the gifted. Time spent practicing teaching models, designing materials and developing teaching units. Emphasis placed on techniques for individualizing instruction for the gifted and talented students. Credit Hours: 3

CI473 - Teaching in Middle Level Schools Acquaints students with issues of teaching young adolescents and the role of teachers in connecting schools with community resources. Information from current area specialists and exemplary practitioners extend appropriate teaching strategies and supplement background knowledge on special topics related to social, emotional and physical development related to the curriculum. Prerequisite: CI 462, EDUC 313, or consent of instructor. Lab fee: $10. Credit Hours: 3

CI496 - Field Study Abroad Orientation and study before travel, readings, reports, and planned travel. Includes visits to cultural and educational institutions. Maximum credit hours in any term are 4. Credit Hours: 2-4

CI498C - Workshops in Education-Language Arts Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI498D - Workshops in Education-Science Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI498E - Workshops in Education-Mathematics Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI498F - Workshops in Education-Reading Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI498G - Workshops in Education-Social Studies Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI498I - Workshops in Education-Elementary Education Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI498J - Workshops in Education-The Middle School Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI498K - Workshops in Education-Secondary Education Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI498M - Workshops in Education-Instruction Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI498O - Workshops in Education-Environmental Education Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of

implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI498P - Workshops in Education-Children's Literature Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI498Q - Workshops in Education-Family Studies Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI498S - Workshops in Education-Gifted and Talented Education Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI498T - Workshops in Education-Teacher Education Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI500 - Introduction to Research Methods in Education The student will evaluate and synthesize research, demonstrate a basic understanding of research concepts and principles, and compare and contrast specific methods for conducting research. Credit Hours: 3

CI501 - Literacy Leadership for Education Professionals The course prepares education professionals to become literacy leaders and agents of change in school and community settings. CI 501 focuses on the historical perspectives of literacy instruction, research, and scholarship; pedagogical models; evaluation of curriculum, materials, and programs, and the knowledge to design, implement, lead, and evaluate effective professional develop programs. Restricted to consent of instructor. Credit Hours: 3

CI502 - Child Maltreatment Examines the many facets of child maltreatment including the impact on the child's development, the family dynamics and the communities' role. Emphasis is on current research in the field, as well as the roles and responsibilities of various professionals who work with children and their families. Credit Hours: 3

CI503 - Introduction to the Curriculum Deals with the nature, purposes and functions of curriculum planning and development; curriculum design and organization; curriculum implementation and maintenance; and curriculum evaluation as each component relates to the total curriculum. Credit Hours: 3

CI504 - Systematic Approaches to Instruction Gives graduate students an opportunity to investigate, discuss and apply systematic approaches to instruction. Special emphasis is given to that element of the instructional system, that allows for the integration of instructional media into the process. Credit Hours: 3

CI505 - Infant/Toddler Development This course is designed to be an overview of theoretical and research-based understandings of infant development. Principles of development as well as dynamics of human behavior and relations will be explored. A topical approach is taken to allow the understanding of how broad concepts of development apply to infant development. Credit Hours: 3

CI506 - Professional Services for Diverse Family Structures Case analysis of different family structures through seminar teams. Each team will be responsible for analysis of the interaction of the family structure and the economic, nutritional, and socializing activities carried out within the family-

household. Role and sources of assistance through current programs will be included. Special approval needed from the instructor. Credit Hours: 3

CI507 - The Impact of Public Policy on Family Life This course focuses on an analysis of policies that impact the lives of children and families and includes an overview of the legislative process at the local, state, and national levels. The course emphasizes practical ways in which we can become proactive and effective advocates for children and their families. Credit Hours: 3

CI508 - Systematic Observation and Analysis of Instruction Students will learn to use conferencing techniques and to construct and use valid and reliable systematic observation instruments to provide the basis for analysis and feedback about classroom instruction. Credit Hours: 3

CI509 - Foundations of Environmental Education Designed specifically to provide teachers, administrators and curriculum specialists with the knowledge and skills necessary to implement environmental education strategies in both elementary and middle schools. Includes work in ecological foundations, programs currently in use, unit designs, methods and research. One or two field trips may be required. Credit Hours: 3

CI512 - Literacy Instruction and Assessment in Elementary and Middle School Examines literacy as a developmental process. The course introduces students to best practices for instruction and assessment in elementary and middle level classrooms. Attention given to language and literacy demands in the content area as well as cultural and linguistic diversity in elementary and middle level classrooms. Restricted to admission to program or consent of instructor. Credit Hours: 3

CI513 - Emergent Literacy A study of early literacy. Explores the foundations of family literacy as the basis for continued development of reading and writing in kindergarten and the primary grades. Credit Hours: 3

CI514 - Advanced Human Development & Learning A graduate-level course designed to explore the theories that guide understanding about human development and learning. Overall goal is to understand how theories guide our understanding of development and learning and apply them to different contexts and development over the life-span. Students will learn how to take an analytical approach to their study of individuals and to translate this analysis into work with children and adults. Credit Hours: 3

CI515 - Advanced Remediation in Mathematics Strategies for the design of prescribed systematic instruction for correcting identified mathematics difficulties. Experience in designing and preparing materials for corrective purposes. Prerequisite: CI 407E or consent of instructor. Credit Hours: 3

CI516 - Teaching Mathematics in the Elementary School Master's degree level course, which acquaints the student with approaches to teaching, development of curriculum materials and authoritative positions on the mathematics of grades K-8. Emphasis on teaching aids, problem solving and recent developments at this level. Credit Hours: 3

CI517 - Early Childhood Programs: Organization and Administration Presents an overview of the organization and administration of programs for children ages three to eight with experiences in planning for operating and administering such programs. Prerequisite: CI 518 or consent of instructor. Credit Hours: 3

CI518 - Critical Issues in Early Childhood A survey of current problems and practices in early childhood education for children from three to eight years of age, with emphasis on reading in current research literature. Special approval needed from the instructor. Credit Hours: 3

CI519 - The Study of Cultural Diversity in Education and Family Services The student examines origins, characteristics of behavior, learning patterns, family constellations, and lifestyles of the diverse cultural groups in our community, state, and nation. Students will identify their own cultural background and biases; recognize diversity resulting from ethnic origin, gender, age, or disability; and experience ways of learning about cultures other than their own that promote constructive communication and integration into all aspects of schooling, teaching, and family services. Credit Hours: 3

CI520 - Action Research in Early Childhood (Same as CI 544) Major trends and current issues in research as they relate to child development and early childhood programs will be explored. Special emphasis will be placed on the relationship of research to professional preparation and practice.

Restricted to early childhood students who have taken all core courses for completion of the master's degree. Letter grade/DEF. Credit Hours: 3

CI521 - Advanced Diagnostic Teaching of Reading Emphasizes diagnostic teaching strategies that teachers and reading specialists employ when dealing with under achievement in reading. Students use informal and formal tests, observation and trial lessons to select instructional materials and activities appropriate to different reading/writing problems. Each student tutors persons while being supervised in the Clinical Center. Prerequisite: CI 512 or CI 513 or CI 561, CI 407F. Special approval needed from the instructor. Credit Hours: 4

CI522 - Integration of Technology in Mathematics and Science Teaching Integrating technology in Math and Science teaching. Technology may include calculators, computer software, computer-based laboratories, data collection devices, interactive manipulatives, and other internet resources. Special approval needed from the instructor. Credit Hours: 3

CI523 - Contemporary Language Arts This course is designed to support candidates in developing an orientation to language arts instruction in elementary and middle level classrooms. Students will examine the theories, methods, materials, and instructional procedures for a developmental language arts program that emphasizes integration of all language arts areas. Prerequisites: CI 512, CI 561 with grades of C or better or consent of instructor. Credit Hours: 3

CI524 - Methods and Assessments for Elementary and Middle School Social Science Curriculum A study of theory and practices of teaching and assessment practices for developing curricula in the elementary and middle school social sciences. Particular attention to be given to trends and issues in social sciences. Various social science models will be examined and evaluated for practical use. Students must demonstrate competencies and skills related to disciplinary literacies for the social sciences. Credit Hours: 3

CI525 - Integration of Technology into Mathematics Education [PreK-8] Technology use in mathematics teaching and learning, such as handheld calculators/computers; hands-on experience in teaching with easily learned tools for teaching/learning mental computation, computation, algebra, geometry, probability, statistics and use of software - e.g., Shapemakers, Geometer's Sketchpad, Excel, graphing calculators, computer-based laboratories, data collection devices, interactive websites and other internet resources. Credit Hours: 3

CI526 - Teaching Methods and Assessments in Elementary School Science Education Framed by research and theory addressing trends and issues in elementary school science, students will design and implement instruction. Various methods such as inquiry and place-based education for teaching and assessing students will be emphasized. Credit Hours: 3

CI527 - Advanced Family Studies Examination of the major theoretical approaches and current research in family development. Review the nature and value of theory to the study of the family and evaluate the use of theory in empirical research. Implications for policy. Credit Hours: 3

CI528 - Methods for Teaching Mathematics in the Preschool and Early Childhood Grades (Pre K-3) Acquaints the student with the learning characteristics of children and teaching methods at grades pre K-3. Emphasis on concrete manipulative teaching aids, learning readiness and diagnosis of learning difficulties. Credit Hours: 3

CI529 - Modern Approaches to Teaching Secondary School Mathematics (Same as MATH 511) Topics will include problem solving, applications of mathematics and teaching proofs in secondary school mathematics. Practical classroom use of materials will also be emphasized. Special approval needed from the instructor. Credit Hours: 3

CI530 - Teaching Problem Solving in School Mathematics Designed to acquaint teachers with problem solving processes, assessment practices, and how to integrate problem solving into their teaching. Emphasis is placed on teaching the process of problem solving and assessment. Restricted to graduate standing or consent of adviser. Credit Hours: 3

CI531 - Curriculum for Elementary & Middle Level Schools Designed to assist teachers and administrators in making curricular decisions for elementary and middle level schools based on

knowledge of educational foundations, standards, learning experiences, research, materials and methods, instructional programming and evaluation. Credit Hours: 3

CI533 - Instructional Leadership A study of research and related literature concerning the roles and responsibilities of various instructional leaders in public and private schools, professional development centers, state departments of education and college or university settings. Leadership styles and behaviors, especially as they apply to the academic circumstances and environments in specific case studies, are examined. Credit Hours: 3

CI534 - Organization of the Elementary School An analysis of types of elementary school organizations with special attention to influence of school organization upon the educational program. Application of research findings to selection and use of materials of instruction. Special consideration to classroom teachers' professional problems. Credit Hours: 3

CI535 - Reading and Language Arts Research Seminar Students survey current research in Reading and Language studies and present a research paper to the seminar participants. Prerequisite: CI 500, nine hours coursework in reading and language arts. Special approval needed from the instructor. Credit Hours: 3

CI536 - Partnerships and Mentoring the New Professional A study of the theories, practices and research of Professional Development Schools and other collaborative teacher education and school reform initiatives with special attention given to the issues of collaboration and cooperation, team building and consensus building, honoring diversity and change, and educators as problem solvers. Credit Hours: 3

CI539 - Leadership in Mathematics and Science An exploration of current literature in math and science leadership and the application of principles and skills necessary for mentoring instructional development in math and science. Special approval needed from the instructor. Credit Hours: 3

CI542 - Content Area and Disciplinary Literacy Instruction in Elementary and Middle School Course provides an exploration of the relationship between developmental literacy, content area, and disciplinary instruction. Presents an integrated approach for providing strategies to support students' literacy development while taking into account the language and literacy demands of discipline-specific learning. Exploration of various means for valuing and encouraging new literacy practices. Offers an examination of adaptations for culturally and linguistically diverse as well as exceptional learners. Prerequisites: CI 512, CI 513, or consent of instructor. Credit Hours: 3

CI543 - Fundamentals of Teaching and Learning First course in the Master of Arts in Teaching (M.A.T.) program sequence. Its focus is on development of a specific set of planning skills secondary level teachers need to appropriately design, implement, manage, and assess student learning. Credit Hours: 3

CI544 - Action Research Methods (Same as CI 520) The focus of the course is on learning about action research, learning to develop and use various data collection tools, developing an action research question, learning about and using various data analysis tools, developing a report, and presenting a research report to an audience of colleagues and peers. Prerequisite: CI 543 (required for MAT students) or consent of instructor. Letter grade/DEF. Credit Hours: 3

CI545 - Literacy Instruction for Culturally and Linguistically Diverse Students This course introduces students to issues related to first- and second-language development, language variation, cultural diversity, second-language instruction, English as a Second Language (ESL) and bilingual education, and culturally and linguistically responsive instruction. These topics will be explored in terms of student learning and teaching and prepare students to teach English language learners (ELLs), dialect speakers, and students from diverse cultural and linguistic backgrounds. The course will serve as an examination of contemporary language acquisition theory; overview of ELL reading research; exploration of methods for motivating and sheltering instruction for ELLs; and investigation of the impact of federal policies on the types of experiences ELLs are afforded. The course is required for students working toward the reading specialist endorsement. Credit Hours: 3

CI546 - Family and Community Literacies and Involvement This course provides students with the knowledge and skills needed to work successfully with families and parent groups in individual,

group, school and community settings. A socio-cultural perspective is evident as the focus will be on acknowledging and valuing the multiple literacies within families and communities, and strengthening adult-child relationships and parent-staff relationships in home, school, and community settings. An awareness of strategies in developing positive and supportive relationships with families of children, including the social, cultural, educational, health, economic, and political dimensions of community and family life, philosophical basis for family participation, family-centered services, and strategies for working with socially, culturally, and linguistically diverse families will be included. Prerequisite: CI 545. Credit Hours: 3

CI547 - Instructional Strategies and Curriculum Development for Adult Literacy and Education This course focuses on understanding adult learners and related practices in diverse adult educational and community contexts. It provides a philosophical, historical, and practical framework for adult literacy learning to include a critical analysis of policies, programs, practices and assumptions about adult learners that undergird the field of adult education. The course is taught through a sociocultural lens with an emphasis on instructional practices that are relevant to the lives and literacies of adult learners. Credit Hours: 3

CI548 - Current Trends and Critical Issues in Science Education Students will identify and analyze theories, problems, and methodologies at the forefront of science education research. Analyses will inform student proposals and peer reviews of potential studies in science education or a closely related field. Pre-requisite/Co-requisite: ERES 540 or instructor permission. Credit Hours: 3

CI549 - New Literacies & Emerging Technologies in a Participatory Culture This course explores the changing landscape of reading and writing as emerging technologies place new demands, challenges, and opportunities before readers and writers. Drawing from a socio-cultural perspective, this course aims to deepen students' understandings of the reading and writing processes with written, hyper, and multi-modal texts as well as strategies for supporting students' development in these processes. Particular emphasis will be on acknowledging and valuing the multiple literacies evident within families, communities, and contemporary society, and strengthening understanding of how best to support learners as they enact new literacy practices that rely upon emerging technologies. Techniques for incorporating new technologies into teaching, as well as the legal and ethical challenges for both teachers and students, will be examined. Prerequisite: CI 512, CI 513, or CI 561. Credit Hours: 3

CI550 - Language Development in Young Children Language and communicative development of young children is the focus of this course. Students will learn about both typical and atypical language development in the areas of phonology, syntax, morphology, semantics, and pragmatics. The relationship between language and other areas of development will be explored as will ways to support language development in young children. Students will observe, record, analyze samples of young children's communication. Credit Hours: 3

CI552 - Foundational Readings in Education and the Social Sciences The seminar course focuses on foundational readings in education and the social sciences. Students in the course identify, read, and discuss seminal readings that are frequently referenced in current scholarship and which have withstood argumentation and scholarly critique. Course experiences consists of intensive reading, discussions, and related injury projects. Credit Hours: 3

CI561 - Disciplinary and Content Area Literacy Instruction for Secondary and Adult Education This course is for secondary teachers and others who desire strategies to help students learn from texts. Special emphasis is on how to help students improve their ability to comprehend, study, and use texts and other print materials encountered in secondary schools and the workplace. This course focuses on theory, research, and methods to enable student engagement with texts, particularly content texts. Emphasis is on strategies for teaching vocabulary, comprehension, reasoning, and organization in specialty subject areas at the high school level, and fundamentally promotes differentiated instruction for diverse populations and the incorporation of technology. Credit Hours: 3

CI564 - Curriculum Development for Gifted Students Explorations of the knowledge and decision-making required to develop curriculum for gifted students, including philosophy, goals and objectives; designing and sequencing activities; curriculum models for gifted students; evaluation and modification of curriculum. Emphasis is placed on the development of curriculum to be used in schools for gifted students. Credit Hours: 3

CI566 - Instructional Strategies for Problem Solving The focus is on developing those teaching strategies, which will foster and enhance problem solving skills and heuristic thinking. Representative of these teaching skills would be inductive and deductive approaches, discovery and inquiry techniques, and questioning strategies. Credit Hours: 3

CI567 - Seminar in Children's Literature The focus of this course is the role of literature in literacy development. Emphasis on methods that support children as they learn to read using literature as a medium of instruction and interpretation that enriches and extends the curriculum. Prerequisite: CI 512, CI 513, CI 561, other foundational course, or consent of instructor. Credit Hours: 3

CI568 - Literature for Children and Young Adults in a Multicultural Society This course is designed to guide educators in the development of a framework from which they examine the impact of cultural, linguistic, and ethnic diversity in literature. As such, emphasis is placed on the development of a critical lens that embraces culturally sustaining practices for groups that have been traditionally underrepresented and inauthentically portrayed in texts. Entails introspection, examinations of bias, power, and privilege, and evaluation of texts. Prerequisite: CI 512 or CI 513 or CI 561, or consent of instructor. Credit Hours: 3

CI570 - Teaching and Learning NonFiction Sources for Adolescent and Adult Learners This graduate-level course will help students develop instructional materials and curricular designs using non-fiction resources for classrooms at the secondary level and beyond. Students will also have an opportunity to gather, analyze, corroborate, and synthesize student data for the purposes of planning instruction with an emphasis on informational sources such as written documents, images, and multimedia. Integrating technology for differentiating instruction, assessment, and content reading for the disciplines (with a specific focus on the social sciences) will also be emphasized. Credit Hours: 3

CI571 - Secondary School Curriculum An introductory course designed to explore the nature and development of the curriculum at the secondary school level. Historical perspective and foundations of curriculum are examined. Functional applications to the public secondary schools are emphasized. Credit Hours: 3

CI572 - Instruction and Assessment with Primary Sources In this course, students will have opportunities to create classroom assessments with artifacts and informational sources, analyze pupil data to inform instruction, learn ways to differentiate instruction to support critical thinking skills, develop local history and place-based curriculum, and participate in local field-based learning. Credit Hours: 3

CI573 - Perspectives on the Future and Its Schools Deals with the future development of education and social trends, which will influence that development. Emphasis is placed upon alternative models of education and their social bases. Credit Hours: 3

CI574 - Advanced Teaching Methods This course focuses on advanced instructional models and strategies designed to improve professional practice and student achievement. Teachers analyze teaching models and methods to examine the connections between theory and practice, vary instructional methods, and explore common applications of the models. Course goals center on developing instruction that enables teachers to differentiate instruction to meet the needs of diverse learners and engage students in learning content. The course is appropriate for teachers at all levels of education. Credit Hours: 1-3

CI575 - Critical Issues in Instructional Supervision Students will examine the history, nature and evolution of supervision for instructional improvement. Students will be introduced to concepts, theory and research findings from many fields of study that have implications for today's supervisory process. Supervisory assumptions and practices will be examined in light of current knowledge of teaching effectiveness. Credit Hours: 3

CI576 - Critical Issues in Teacher Education Students will examine critical issues, problems, and trends in teacher education. Emphasis is placed on strategies for clarifying the issues, solving the problems and examining the possible impact of the trends. Credit Hours: 3

CI577 - Seminar in International Mathematics in Education Deals with goals, contents, teaching methods, teacher training, curriculum development and research literature on mathematics education at the international level. Restricted to graduate standing or consent of adviser. Credit Hours: 3

CI578 - Advanced Study of Mathematics Education Study of the practical and theoretical development of mathematics curricula and instruction, and viewing mathematics curricula and instruction from philosophical and psychological perspectives. Restricted to advanced graduate study or consent of adviser. Credit Hours: 3

CI579 - Classic and Contemporary Literature for Young Adults This course includes an examination of landmark and contemporary literature for young adults. Students will critically evaluate young adult literature and the implications for classroom use. Emphasis will be placed on the use of young adult literature within the framework of current standards. Prerequisites: CI 512 or CI 513 or CI 561, another foundational literacy course, or consent of instructor. Credit Hours: 3

CI580 - Current Trends in Education Trends, issues, problems in education related to the student, program, school organization, staff, material and media, the school building, and the process of innovation and change. Credit Hours: 3

CI583 - Instructional Theory, Principles, and Practices Presentation of conceptual formulations and skills concerning instructional theory and principles; foundations of instruction; instructional systems and models; delivery processes (logistics), systems, and maintenance of quality control; and evaluation of teachers and students. Credit Hours: 3

CI584 - Curriculum Theory, Foundations, and Principles The course will emphasize the study of the perspectives on curriculum theory that have guided the development of curriculum practice in the United States. Students will critically examine these perspectives and utilize them to develop and defend positions on contemporary curriculum issues. Credit Hours: 3

CI585A - Topical Seminar A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Curriculum. Maximum of six hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI585B - Topical Seminar A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Supervision for instructional improvement. Maximum of six hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI585C - Topical Seminar A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Language arts. Maximum of six hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI585D - Topical Seminar A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Science. Maximum of six hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI585E - Topical Seminar A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Mathematics. Maximum of six hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI585F - Topical Seminar A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Reading. Maximum of six hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI585G - Topical Seminar A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and

analyzing are the following: Social studies. Maximum of six hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI585H - Topical Seminar A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Early Childhood education. Maximum of six hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI585I - Topical Seminar A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Elementary education. Maximum of six hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI585J - Topical Seminar A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: The Middle school. Maximum of six hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI585K - Topical Seminar A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Secondary education. Maximum of six hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI585M - Topical Seminar A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Instruction. Maximum of six hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI585O - Topical Seminar A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Environmental education. Maximum of six hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI585P - Topical Seminar A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Children's literature. Maximum of six hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI585Q - Topical Seminar A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Family studies. Maximum of six hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI585S - Topical Seminar A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Gifted and talented education. Maximum of six hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI585T - Topical Seminar A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Teacher education. Maximum of six hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI586 - Curriculum Design and Development Presentations concerning educational planning and curricular decision-making relating to curriculum: aims, goals, and objectives; nature of knowledge, disciplines, and subjects; curriculum structures: sequence and scope; substantive structural models; content and activity selection, product analysis and production; evaluation; and curriculum modification and change. Credit Hours: 3

CI589 - The Work of the Director of Curriculum and Instruction The role of the director of curriculum and instruction is the focus of this course. Such topics as the background, current status, and tasks and functions of the position are examined. Additionally, such broad areas of the director's role as

needs assessment, program planning and evaluation, and in-service education planning are covered. Prerequisite: CI 586 or ERES 530 or consent of instructor. Credit Hours: 3

CI590A - Independent Readings-Curriculum Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI590B - Independent Readings-Supervision for Instructional Improvement Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI590C - Independent Readings-Language Arts Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI590D - Independent Readings-Science Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI590E - Independent Readings-Mathematics Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI590F - Independent Readings-Reading Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI590G - Independent Readings-Social Studies Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI590H - Independent Readings-Early Childhood Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI590I - Independent Readings-Elementary Education Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI590J - Independent Readings-Middle School Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI590K - Independent Readings-Secondary Education Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI590M - Independent Readings-Instruction Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI590O - Independent Readings-Environmental Education Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI590P - Independent Readings-Children's Literature Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI590Q - Independent Readings-Family Studies Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI590S - Independent Readings-Gifted and Talented Education Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI590T - Independent Readings-Teacher Education Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI593A - Individual Research in Education-Curriculum The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI593B - Individual Research in Education-Supervision for Instructional Improvement The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI593C - Individual Research in Education-Language Arts The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI593D - Individual Research in Education-Science The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI593E - Individual Research in Education-Mathematics The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI593F - Individual Research in Education-Reading The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI593G - Individual Research in Education-Social Studies The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI593H - Individual Research in Education-Early Childhood The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI593I - Individual Research in Education-Elementary Education The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI593J - Individual Research in Education-Middle School The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI593K - Individual Research in Education-Secondary Education The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI593M - Individual Research in Education-Instruction The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI593O - Individual Research in Education-Environmental Education The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff.

Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI593P - Individual Research in Education-Children's Literature The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI593Q - Individual Research in Education-Family Studies The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI593S - Individual Research in Education-Gifted and Talented Education The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI593T - Individual Research in Education-Teacher Education The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

CI594A - Practicum-Curriculum For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor. Credit Hours: 2-9

CI594B - Practicum-Supervision for Instructional Improvement For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor. Credit Hours: 2-9

CI594C - Practicum-Language Arts For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor. Credit Hours: 2-9

CI594D - Practicum-Science For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor. Credit Hours: 2-9

CI594E - Practicum-Mathematics For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor. Credit Hours: 2-9

CI594F - Practicum-Reading For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may

involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor. Credit Hours: 2-9

CI594G - Practicum-Social Studies For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor. Credit Hours: 2-9

CI594H - Practicum-Early Childhood For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor. Credit Hours: 2-9

CI594I - Practicum-Elementary Education For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor. Credit Hours: 2-9

CI594J - Practicum-Middle School For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor. Credit Hours: 2-9

CI594K - Practicum-Secondary Education For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor. Credit Hours: 2-9

CI594M - Practicum-Instruction For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor. Credit Hours: 2-9

CI594O - Practicum-Environmental Education For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor. Credit Hours: 2-9

CI594P - Practicum-Children's Literature For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor. Credit Hours: 2-9

CI594Q - Practicum-Family Studies For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor. Credit Hours: 2-9

CI594S - Practicum-Gifted and Talented Education For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor. Credit Hours: 2-9

CI594T - Practicum-Teacher Education For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor. Credit Hours: 2-9

CI595A - Internship-Curriculum Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor. Credit Hours: 2-8

CI595B - Internship-Supervision for Instructional Improvement Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor. Credit Hours: 2-8

CI595C - Internship-Language Arts Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor. Credit Hours: 2-8

CI595D - Internship-Science Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor. Credit Hours: 2-8

CI595E - Internship-Mathematics Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor. Credit Hours: 2-8

CI595F - Internship-Reading Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor. Credit Hours: 2-8

CI595G - Internship-Social Studies Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of

eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor. Credit Hours: 2-8

CI595H - Internship-Early Childhood Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor. Credit Hours: 2-8

CI595I - Internship-Elementary Education Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor. Credit Hours: 2-8

CI595J - Internship-Middle School Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor. Credit Hours: 2-8

CI595K - Internship-Secondary Education Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor. Credit Hours: 2-8

CI595M - Internship-Instruction Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor. Credit Hours: 2-8

CI595O - Internship-Environmental Education Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor. Credit Hours: 2-8

CI595P - Internship-Children's Literature Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor. Credit Hours: 2-8

CI595Q - Internship-Family Studies Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor. Credit Hours: 2-8

CI595S - Internship-Gifted and Talented Education Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor. Credit Hours: 2-8

CI595T - Internship-Teacher Education Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of

eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor. Credit Hours: 2-8

CI597 - Problem-Based Learning for STEM Educators This course surveys the history and development of Problem-Based Learning (PBL) and its applications in Science, Technology, Engineering, and Mathematics (STEM) education and place-based education. Participants will discuss PBL principles and pedagogy and critique or create PBL modules with respect to national and state STEM education standards in support of K-12 classroom implementation, adaptation, assessment, and iterative design of PBL instruction or intervention. Credit Hours: 1-3

CI598 - Family Literacy Programs, Policies, and Practices This course offers an in-depth look at family literacy programs, policies, and practices. The course adopts a sociocultural underpinning to explore how family literacy can contribute to the literacy growth of families and re-center parents as their children's first teachers. Topics include family diversity and funds of knowledge, the basic components of family literacy programs, opportunities for literacy learning, professional development and program improvement, and advocacy. Participants will gain an understanding of family literacy in historical, educational, social, and political contexts. Credit Hours: 3

CI599 - Thesis Minimum of three hours to be counted toward a Master's degree. Restricted to admission to Master's degree program. Credit Hours: 1-6

CI600 - Dissertation Minimum of 24 hours for the Doctor of Philosophy degree. Credit Hours: 1-16

CI601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

CI699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Curriculum and Instruction Faculty

Bacon, Heidi R., Associate Professor, Language, Reading and Culture, Ph.D., University of Arizona, 2014. Adolescent and adult literacies, action research, qualitative research.

Bancroft, Senetta F., Professor, Curriculum and Instruction, Ph.D., The University of Akron, 2014. Secondary science education, chemical education.

Becker, Jerry P., Professor, Mathematics Education, Ph.D., Stanford University, 1967; 1979. Mathematics teacher education, curriculum development, problem solving and international mathematics education.

Bu, Lingguo, Professor, Mathematics Education, Ph.D., Florida State University, 2008; 2008. Modeling, design, and curricular development in STEM education.

Byfield, Lavern, Associate Professor, Elementary Education: Language/Literacy Studies, Ph.D., University of Illinois Urbana-Champaign, 2012; 2012. Language Arts instruction, English as a Second Language (ESL) instruction, bilingual education, culturally responsive pedagogy.

Fadde, Peter J., Professor, Instructional Research and Design, Ph.D., Purdue University, 2002; 2003. Online and blended learning, interactive multimedia, expert performance.

Henson, Harvey Jr., Assistant Professor, Science Education & Geology, Ph.D., Southern Illinois University, 2015; 2016. Science assessment, teacher professional development, preservice teacher efficacy, geohazards education, applied geophysics.

Lin, Cheng-Yao, Professor, Ph.D., University of Illinois, 2003; 2004. Mathematics education.

Loh, Christian Sebastian, Professor, Instructional Technology, Ph.D., University of Georgia, 2004; 2004, Expert performance, serious games analytics, performance improvement & assessment.

McIntyre, Christie, Associate Professor, Teacher Education, Ph.D., Georgia State University, 2007; 2001. Teacher leadership, early childhood education, and literacy.

Miller, Grant, Associate Professor, Curriculum & Instruction, Ph.D., Boston College, 2007; 2007. History education, media literacy, universal design for learning, place-based education, assessment literacy.

Mogharreban, Catherine N., Associate Professor, Ph.D., Southern Illinois University, 1990; 1998.

Pultorak, Edward Jr., Professor, Curriculum and Instruction, Ph.D., Indiana State University, 1988; 1988. Curriculum studies, teacher leadership, curriculum and instruction, instructional supervision.

Shelby-Caffey, Crystal V., Associate Professor, Curriculum & Instruction, Ph.D., Southern Illinois University, 2008. Literacy, culturally responsive pedagogy, new technologies, educational access, communities of color.

Thompson, Stacy D., Professor, Child Development, Ph.D., Iowa State University, 1998; 2005. Interventions for families and caregivers, fathers of infants born to adolescent mothers, sensory integration.

Emeriti Faculty

Barrette, Pierre P., Associate Professor, Emeritus, Ed.D., University of Massachusetts, 1971; 1978.

Bauner, Ruth E., Associate Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1978; 1956.

Bedient, Douglas, Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1971; 1969.

Boykin, Arsene O., Associate Professor, Emeritus, Ed.D., University of Illinois, 1964; 1972.

Campbell, James A., Associate Professor, Emeritus, Ph.D., Ohio State University, 1978; 1989.

Copenhaver, Ron, Associate Professor, Emeritus, Ed.D., Indiana University, 1979; 1978.

Coscarelli, William, Professor, Emeritus, Ph.D., Indiana University, 1977; 1986.

Dale, Doris C., Professor, Emerita, D.L.S., Columbia University, 1968; 1969.

Dixon, Billy G., Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1967; 1961.

Erickson, Lawrence, Professor, Emeritus, Ph.D., University of Wisconsin, 1972; 1984.

Gilbert, Sharon L., Associate Professor, Emerita, Ph.D., Ohio State University, 1988; 1988.

Hungerford, Harold R., Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1970; 1965.

Jackson, James, Associate Professor, Emeritus, Ph.D., University of Wisconsin, 1976; 1976.

Jackson, Michael, Professor, Emeritus, Ed.D., University of Florida, 1971; 1971.

Jones, Dan R., Associate Professor, Emeritus, Ed.D., Indiana University, 1978; 1978.

Karmos, Ann, Associate Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1975; 1975.

Killian, Joyce, Professor, Emerita, Ph.D., Pennsylvania State University, 1980; 1981.

Lamb, Morris L., Associate Professor, Emeritus, Ed.D., University of Oklahoma, 1970; 1970.

Malone, Willis E., Professor, Emeritus, Ph.D., Ohio State University, 1950; 1939.

Matthias, Margaret, Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1972; 1969.

McIntyre, D. John, Professor, Emeritus, Ed.D., Syracuse University, 1977; 1977.

Moore, Eryn E., Assistant Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1976; 1968.

Nelson, Joann N., Assistant Professor, Emerita, Ph.D., University of Illinois, 1980; 1982.

Norris, William, Associate Professor, Emeritus, Ed.D., Indiana University, 1973; 1977.

Pearlman, Susan F., Associate Professor, Emerita, Ph.D., University of Missouri-Columbia, 1987; 1989.

Post, Donna M., Associate Professor, Emerita, Ph.D., Pennsylvania State University, 1990; 1990.

Shepherd, Terry R., Associate Professor, Emeritus, Ph.D., University of Illinois, 1971; 1971.

Shrock, Sharon A., Professor, Emerita, Ph.D., Indiana University, 1978; 1984.

Smith, Lynn C., Associate Professor, Emerita, Ph.D., University of Georgia, 1984; 1984.

Solliday, Michael, Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1975; 1967.

Volk, Gertrude, Professor, Emerita, Ph.D., Southern Illinois University, 1983; 1987.

Waggoner, Jan E., Associate Professor, Emerita, Ed.D., Memphis State University, 1990; 1990.

Wise, Kevin C., Professor, Emeritus, Ed.D., University of Georgia, 1983; 1986.

Cybersecurity and Cyber Systems

The Master of Science degree in Cybersecurity and Cyber Systems is an interdisciplinary program offered through the School of Computing and the School of Electrical, Computer, and Biomedical Engineering.

Master of Science (M.S.) in Cybersecurity and Cyber Systems

Admission

Applicants with a bachelors degree in Computer Science, Engineering, Physics, Mathematics, Information Systems or equivalent degrees will be admitted directly as long as their GPA satisfies Graduate School requirements. The M.S. in Cybersecurity and Cyber Systems requires 30 credit hours. Students can select an area of study in cybersecurity or in cyber systems. For applicants lacking the required specific background, we offer conditional admission status until completing prerequisite courses.

Admission to the M.S. in Cybersecurity and Cyber Systems program is based on the following factors: grade point average of 2.75 or higher on a scale of 4.0 on the entire last undergraduate GPA earned at the time of application, class ranking, and faculty recommendation letters. Although GRE scores are not required for admission, they are important to qualify for the High Achievers Tuition Rate. See also tuition.siuc.edu/highachievers2.html. The minimum TOEFL score requirement for international applicants is 550 (paper-based) or 80 (computer-based).

The program requires a nonrefundable $65 application fee that must be submitted with the application for admissions to the M.S. program in Cybersecurity and Cyber Systems. Students must apply online and pay this fee by credit card. Please address any correspondence to “Master of Science Program in Cybersecurity and Cyber Systems,” 1230 Lincoln Drive, Southern Illinois University Carbondale, Carbondale, Illinois 62901, Mailcode 6603 or Mailcode 4511. Inquiries can be addressed to cyberms@siu.edu. For telephone inquiries please call 618-536-2364 or 618-536-2327, and refer to the Master of Cybersecurity and Cyber Systems Program. The facsimile numbers are 618-453-7972 and 618-453-6044.

Retention

Any student whose cumulative grade point average falls below 3.0 on courses that count towards the degree will be placed on academic probation. Any graduate student on academic probation whose grade point average remains below 3.0 on courses that count towards the degree for two consecutive semesters in which she or he is enrolled will be permanently suspended from the program, unless the program grants an exception.

Curriculum

The degree requires 3 courses from 3 key areas that will ascertain understanding of fundamentals and help build a solid foundation for the remainder of the program. These courses are listed below.

1. **Fundamentals in computer security**. This requirement will be completed by either CS 505 or ECE 504. Only one of these courses will count towards the degree.
2. **Fundamentals in systems programming**. This requirement will be completed by either CS 517 or ECE 536. Only one of these courses will count towards the degree.
3. **Fundamentals in network systems**. This requirement will be completed by either CS 502 or ECE 553. Only one of these courses will count towards the degree.

A student should then seek an area of study in either cybersecurity or cyber systems by selecting at least 5 elective courses in these areas. The lists of these courses are given below. A maximum of six credit hours from academic units outside the School of Computing and the School of Electrical, Computer, and Biomedical Engineering can be applied towards the degree.

In the area of cybersecurity, students must complete 4 courses in cybersecurity and 1 course in cyber systems. In the area of cyber systems, students must complete 4 courses in cyber systems and 1 course in cybersecurity. A fundamental area may be satisfied by a course that was taken prior to admission or a documented record of accomplishment in the subject matter content. In this case, the student must select an additional elective course either in cybersecurity or in cyber systems for each satisfied fundamental area. Students must take at least two CS/ECE five hundred level courses not cross listed to a four hundred level course. Students must take at least three ECE and at least three CS courses. Only three credit hours of ECE 592 or CS 598 can count towards the degree.

MS Thesis option: 6 credit hours of thesis in ECE or CS (ECE 599 or CS 599) may substitute for 6 credit hours in an area of study (cybersecurity or cyber systems).

The Master of Science degree program in Cybersecurity and Cyber Systems has an online option for the non-thesis track.

List of cybersecurity courses for the MS degree: CS 508, CS 509, CS 513, CS 519, ECE 502, ECE 517, ECE 518, ECE 519, CS 525, CS 531.

List of cyber system courses for the MS degree: ECE 509, CS 523, CS 541, ECE 575A, ECE 512, ECE 528, ECE 536, CS 540, ECE 541.

For program courses and faculty, refer to Electrical and Computer Engineering and Computer Science.

Cybersecurity and Cyber Systems Courses

CS401 - Computer Architecture Review of logical circuit design. Hardware description languages. Algorithms for high-speed addition, multiplication and division. Pipelined arithmetic. Implementation and control issues using PLA's and microprogramming control. Cache and main memory design. Input/Output. Introduction to interconnection networks and multiprocessor organization. Prerequisite: CS 320 with a grade of C or better or graduate standing. Credit Hours: 3

CS406 - Basic Linux System Administration This course will be an introduction to the administration of Linux systems, with emphasis on security for networked systems. Topics to be covered include: installation and configuration of Linux distributions, typical maintenance activities, and security measures for networked systems. Students will have access to lab machines for hands on practice. Prerequisite: CS 306 with a grade of C or better or graduate standing. Credit Hours: 3

CS491 - Special Topics Selected advanced topics from the various fields of computer science. Credit Hours: 1-6

CS492 - Special Problems Individual projects involving independent work. Special approval needed from the instructor. Credit Hours: 1-6

CS493 - Seminar Supervised study. Preparation and presentation of reports. Special approval needed from the instructor. Credit Hours: 1-6

CS500 - Computer Architecture Review of logical circuit design. Hardware description languages. Algorithms for high-speed addition, multiplication and division. Pipelined arithmetic. Implementation and control issues using PLA?s and microprogramming control. Cache and main memory design. Input/Output. Introduction to interconnection networks and multiprocessor organization. Students who have completed CS 401 are ineligible to enroll. Prerequisite: CS 320 with a grade of C or better or graduate standing. Credit Hours: 3

CS501 - Advanced Computer Architecture Hardware and software elements of multiprocessors, multicomputers, pipeline and array machines, data flow architecture and other state-of-the-art

architectures. Design principles related to machine structures, interconnection networks, control software and hardware, data storage and access. Prerequisite: CS 401. Credit Hours: 3

CS502 - Computer Networks Design and analysis of computer communication networks. Topics to be covered include queuing systems, data transmission, data link protocols, topological design, routing, flow control, security and privacy, and network performance evaluation. Prerequisite: CS 330 with a grade of C or better or graduate standing; CS 306 recommended. Students who have completed CS 440 are ineligible to enroll. Credit Hours: 3

CS503 - Fault-Tolerant Computing Systems An introduction to different aspects of fault-tolerance in computing systems. Redundancy techniques with an emphasis on information redundancy, software fault-tolerance, coding techniques, algorithm-based fault-tolerance, fault-tolerant interconnection network architecture, DFT techniques, and quantitative evaluation methods. Prerequisite: CS 401. Credit Hours: 3

CS504 - Autonomous Mobile Robots This course is a comprehensive introduction to modern robotics with an emphasis on autonomous mobile robotics. Fundamental of sensors and actuators as well as algorithms for top level control are discussed. Multi-robotics and human-robot interaction issues are explored. A group project is an integral part of this course. Students who have completed CS 404 are ineligible to enroll. Prerequisite: CS 330 with a grade of C or better or graduate standing. Credit Hours: 3

CS505 - Computer Security A broad overview of the principles, mechanisms, and implementations of computer security. Topics include cryptography, access control, software security and malicious code, trusted systems, network security and electronic commerce, audit and monitoring, risk management and disaster recovery, military security and information warfare, physical security, privacy and copyrights, and legal issues. Prerequisite: CS 306 with a grade of C or better or graduate standing. Students who have completed CS 410 are ineligible to enroll. Credit Hours: 3

CS506 - Basic Linux System Administration This course will be an introduction to the administration of Linux systems, with emphasis on security for networked systems. Topics to be covered include: installation and configuration of Linux distributions, typical maintenance activities, and security measures for networked systems. Students will have access to lab machines for hands on practice. Students who have completed CS 406 are ineligible to enroll. Prerequisite: CS 306 with a grade of C or better or graduate standing. Credit Hours: 3

CS507 - Advanced Linux/UNIX Programming This course builds on the knowledge gained in CS 306, to prepare students to do advanced development on Linux/UNIX platforms. The topics studied are critical for achieving high performance in large-scale, high-load networked software systems. These topics include development techniques such as profiling, concurrent programming and synchronization, network programming for high-load servers, advanced I/O alternatives, and IPC such as shared memory. The course will involve the study of code from Open Source projects like Apache and Nginx. The focus will be on the C language, but other languages will also be considered. Students must complete a significant network software project. Prerequisites: CS 306 & CS 335 with grades of C or better, or graduate standing with C language & Linux system programming experience. Students who have completed CS 407 are ineligible to enroll. Credit Hours: 3

CS508 - Applied Cryptography This course is a comprehensive introduction to modern cryptography, with an emphasis on the application and implementation of various techniques for achieving message confidentiality, integrity, authentication and non-repudiation. Applications to Internet security and electronic commerce will be discussed. All background mathematics will be covered in the course. Prerequisite: CS 330 with a grade of C or better and MATH 221 or graduate standing. Students who have completed CS 408 are ineligible to enroll. Credit Hours: 3

CS509 - Ethical Hacking This course will explore the various means that an intruder has available to gain access to computer resources. We will investigate weaknesses by discussing the theoretical background, and whenever possible, actually performing the attack. We will then discuss methods to prevent/reduce the vulnerabilities. This course is targeted specifically for Certified Ethical Hacking (CEH) exam candidates, matching the CEH exam objectives with the effective and popular Cert Guide method of study. Prerequisite: CS 202 or equivalent with a grade of C or better. Students who have completed CS 409 are ineligible to enroll. Credit Hours: 3

CS510 - Wireless and Network Security Advanced security concepts of distributed systems and wireless networks are presented. Topics include IEEE 802.11 security, Wireless Encryption and Authentication, Key Management in Networks, Distributed Denial of Service Attacks, Routing Security, Intrusion Detection and Mobile Code Security. Prerequisite: CS 410 with a grade of C or better or consent of the instructor. Credit Hours: 3

CS511 - Formal Specification of Programming Languages A survey of modeling techniques and Meta languages for the formal specification of the syntax and semantics of high-level programming languages. Prerequisite: CS 311. Credit Hours: 3

CS512 - Declarative Programming An advanced level course on nonprocedural programming with emphasis on logic programming, pure functional programming, and the characteristics of the declarative style common to these two paradigms. Topics include logic programming, functional programming, implementation consideration for each along with current research topics in the areas. Prerequisite: CS 311. Credit Hours: 3

CS513 - Digital Forensics Cybersecurity has become a ubiquitous concern well beyond finding solutions to post-mortem threat analysis. The course provides a broad overview of security objectives and will cover fundamentals in confidentiality, integrity, and availability. Lectures will offer a broad range of topics on digital forensics. Students will be trained for an investigation mindset. Contemporary tools and techniques for digital forensics and investigations are reviewed. Security for stationary and mobile platforms are foci of current course in both forensic and active modes. There will be multiple hands-on homework and laboratories as well as a practical project as integral part of this course. Students who have completed CS 413 are ineligible to enroll. Prerequisite: CS 330 with a grade of C or better or graduate standing. Credit Hours: 3

CS514 - Advanced Operating Systems Rigorous treatment of advanced topics in operating systems. Multiprocessors and distributed operating systems. Highly concurrent machines. Performance analysis of memory management and scheduling algorithms. Recovery techniques in distributed computation. Security in operating systems. Prerequisite: CS 335 with a grade of C or better. Credit Hours: 3

CS515 - Computational Blockchain This course introduces fundamentals of modern blockchain-based systems as well as cryptocurrency applications. Topics for discussion include consensus and distributed computing, smart contracts, privacy and secrecy, and other relevant computational platforms. Non-currency applications of blockchains, and legal and social implications will be outlined. Students will be required to develop a term project. Prerequisites: CS 330 with grade of C or better or CS 410 or graduate standing. Credit Hours: 3

CS516 - Advanced Compilers A continuation of 416 including advanced topics in lexical and syntax analysis, error recovery, sematic analysis, code optimization and compiler compilers. Prerequisite: CS 416. Credit Hours: 3

CS517 - Programming Distributed Applications This course uses advanced features of the Java programming language to develop networked, distributed, and web-based applications. Topics covered include, but are not limited to, sockets, datagrams, the Java security model, threads, multi-tier architectures, Java RMI, Java database connectivity, and Java-based mobile agents. Prerequisite: CS 306 with a grade of C or better or graduate standing. Students who have completed CS 412 are ineligible to enroll. Credit Hours: 3

CS518 - Distributed Systems A top-down approach addressing the issues to be resolved in the design of distributed systems. Concepts and existing approaches are described using a variety of methods including case studies, abstract models, algorithms and implementation exercises. Students who have completed CS 420 are ineligible to enroll. Prerequisite: CS 335 with a grade of C or better or graduate standing. Credit Hours: 3

CS519 - Network Forensics With the proliferation of wireless networks, security is at odds with privacy and integrity. The course provides a broad overview of security strategies for wireless networks. Topics will range from intrusion detection and network security protocols to collaborative computing. Contemporary tools and techniques for wireless network security are reviewed. A hands-on project will be

an integral part of this course. Students who have completed CS 415 are ineligible to enroll. Prerequisite: CS 330 with a grade of C or better or graduate standing. Credit Hours: 3

CS520 - Advanced Topics in Parallel & Distributed Computing An advanced treatment of parallel and distributed computing; review of hardware and software considerations for parallel computation; development and analysis of parallel algorithms (with particular attention to the communication and synchronization costs associated with parallel algorithms); effect of granularity on performance; a comparison of the parallel and distributed programming paradigms including a detailed study of the central features of each approach; software systems for distributed computing including exposure to one or more distributed programming environments; the direction of parallel computing as suggested by recent, high level parallel languages; parallelizing serial programs; parallelizing compilers; future directions of parallel and distributed computing systems. The course will include a student project. Prerequisite: CS 420. Credit Hours: 3

CS521 - Compiler Construction Introduction to compiler construction. Design of a simple complete compiler, including lexical analysis, syntactical analysis, type checking, and code generation. Students who have completed CS 416 are ineligible to enroll. Prerequisites: CS 306 and 311 each with a grade of C or better or graduate standing. Credit Hours: 3

CS522 - Artificial Intelligence I Search and heuristics, problem reduction. Predicate calculus, automated theorem proving. Knowledge representation. Applications of artificial intelligence. Parallel processing in artificial intelligence. Students who have completed CS 436 are ineligible to enroll. Prerequisites: CS 311 and CS 330 each with a grade of C or better or graduate standing. Credit Hours: 3

CS523 - Principles of Virtualization and Cloud Computing Cloud Computing (CC) represents a recent major strategic shift in computing and Information Technology. This course explores fundamental principles, foundational technologies, architecture, design, and business values of CC. Understanding will be reinforced through multiple angles including: analysis of real world case studies, hands-on projects and in-depth study of research developments. Students who have completed CS 425 are ineligible to enroll. Prerequisite: CS 330 with a grade of C or better or graduate standing. Credit Hours: 3

CS524 - Database Systems The course concentrates on the relational model, database design, and database programming. Topics include relational model, relational algebra, SQL, constraints and integrity, transaction support, concurrency control, database design, normalization, backup, recovery, and security. A comprehensive product-like project is an integral part of the course. Prerequisite: CS 330 with a grade of C or better or graduate standing. Students who have completed CS 430 are ineligible to enroll. Credit Hours: 3

CS525 - Security Issues in Cloud Computing This course offers a survey of security and privacy issues in Cloud Computing systems along with an overview of current best practices and available technologies. Threat model as well as practical applications of secure Cloud Computing are explored. Prerequisite: CS 410 or graduate standing. Credit Hours: 3

CS526 - Learning from Data An introduction to classical machine learning theory and practical techniques. Topics to be covered include computational learning theory (VC theory), linear classification and regression models, SVMs and kernel methods, decision trees, the bias-variance tradeoff, overfitting, and regularization. Prerequisite: CS 330 with a grade of C or better or graduate standing. Students who have completed CS 434 are ineligible to enroll. Credit Hours: 3

CS527 - Cyber-Physical Systems The goal of this course is to introduce and develop an understanding of the computing and communication for Internet of Things as a subset of Cyber-Physical systems. Connectivity among devices in our daily lives such as WiFi-enabled thermostats, smarts grids, and driverless cars is ushering in an era of sociality that transcends human social networks to machine to machine networks. Prerequisite: CS 306 with a grade of C or better or graduate standing. Students who have completed CS 431 are ineligible to enroll. Credit Hours: 3

CS528 - Machine Learning and Soft Computing An introduction to the field of machine learning and soft computing. It covers rule-based expert systems, fuzzy expert systems, artificial neural networks, evolutionary computation, and hybrid systems. Students will develop rule-based expert systems, design a fuzzy system, explore artificial neural networks, and implement genetic algorithms. Prerequisite: CS 330

with a grade of C or better or graduate standing. Students who have completed CS 437 are ineligible to enroll. Credit Hours: 3

CS529 - Natural Language Processing This course combines essential ideas from linguistics and artificial intelligence to for machine understanding and generation of language. We will cover language syntax, semantics, and pragmatics and discuss the applications such as information extraction, question answering and dialog systems. Machine learning is the main computational tool to solve NLP problems and will devote a part of the course to discussing ML approaches that model NLP tasks. Deep Neural Networks and their ability in learning representations are also part of our approach to NLP problems. We will discuss learning representations and learn about transformer-based architectures that help in learning rich representations. This course is suitable for students who are willing and able to learn abstract concepts, complete programming assignments, develop a project, and produce a term paper. Prerequisite: CS 330 with a grade of C or better. Credit Hours: 3

CS530 - Advanced Database Systems A detailed treatment of advanced topics in data base systems including, but not limited or restricted to, relational database theory, query optimization, recovery techniques, concurrency control, distributed database systems, security and integrity and database machines. Prerequisite: CS 430. Credit Hours: 3

CS531 - Security in Cyber-Physical Systems The course covers introductory topics in cyber-physical systems security. The goal is to expose students to fundamental security primitives specific to cyber-physical systems and to apply them to a broad range of current and future security challenges. Various tools and techniques used by hackers to compromise computer systems or otherwise interfere with normal operations are explored using tools that are unique to interacting with cyber-physical systems. Restricted to graduate standing or consent of the instructor. Credit Hours: 3

CS532 - Topics in Information Systems A detailed study of two or three topics relevant to information systems. Topics may include but are not limited to sorting, searching, information retrieval and automatic text processing, database security and encryption, distributed databases and data communication. Prerequisite: CS 430. Special approval needed from the instructor. Credit Hours: 3-6

CS533 - Data Mining and Big Data Analysis This course provides a series of comprehensive and in-depth lectures on the core techniques in data mining and knowledge discovery; addresses the unique issues of big data; and discusses potential applications of data mining particularly on big data analysis. Major topics include: data preparation, association mining, classification (and prediction), clustering, characteristics and challenges of big data, and strategies of big data mining and analysis. Prerequisites: CS 330 and CS 430 with grades of C or better or consent of instructor. Credit Hours: 3

CS534 - Big Data Management and Analytics This course provides comprehensive and in-depth discussions of big data management and analytics. Main subjects include computation and programming models, management and analytics algorithms, and platforms/frameworks especially designed for big data. The objective of this course is to equip students with the ability to understand, use, and build big data management and analytics systems or tools. Prerequisites: CS 430 with a grade of C or better or graduate standing. Credit Hours: 3

CS535 - Advanced Machine Learning The purpose of this course is for students to acquire in-depth knowledge of advanced aspects of machine learning. This course will cover topics including classification, clustering, the foundation of deep learning, convolutional Neural Networks, recurrent Neural Networks, and some other advanced topics-deep reinforcement learning and deep generative models. Students will learn the foundations of machine learning, deep learning, and develop skills for performing research to advance the state of knowledge in machine learning. Prerequisites: CS 434 or CS 437 with a grade of C or better. Concurrent enrollment in CS 434 or CS 437 is allowed. Credit Hours: 3

CS536 - Artificial Intelligence II Theorem proving, the Resolution Principle, strategies, and achievements. Program verification. Natural language processing. Other selected topics. Prerequisite: CS 436. Credit Hours: 3

CS537 - Advanced Topics in Expert Systems This course is designed to provide students with advanced topics in expert systems theory. Topics covered include: knowledge representation, methods of inference, reasoning under uncertainty, and inexact reasoning (fuzzy logic). A practical introduction to

expert systems programming serves to reinforce and clarify the theoretical concepts. Prerequisite: CS 330 or consent of instructor. Credit Hours: 3

CS538 - Game Theory in Networks Game theoretic concepts apply whenever actions of several players are interdependent. This course will provide an introduction to classic game theory and strategic thinking including dominance, Nash equilibrium, and stability. Social choice, social learning, and online mechanism design are then discussed. We will examine how game theoretic concepts can be used in developing reasoning strategies, i.e., algorithms. Application of game theoretic framework to telecommunication and human networks is an integral part of this course. Restricted to graduate standing or consent of instructor. Credit Hours: 3

CS539 - Agents and Multiagent Systems This is an advanced treatment of fundamental concepts in the design of intelligent autonomous agents and agent systems. Classic agent theories, architectures, algorithms, and languages are discussed. An agent-based project is an integral part of this course. Restricted to graduate standing or consent of instructor. Credit Hours: 3

CS540 - Advanced Computer Networks Topics include routing protocols used in internet; data compression techniques; telecommunication systems - its services, architecture and protocols; high speed networks; routing protocols in mobile ad-hoc networks; and a detailed performance analysis of different window flow control and congestion control mechanisms using queuing theory. Prerequisite: CS 440 with a grade of C or better, or consent of the instructor. Credit Hours: 3

CS541 - Mobile and Wireless Computing Concepts of mobile and wireless systems are presented. These concepts include, but are not limited to, Routing and Medium Access for Mobile Ad hoc and Wireless Sensor Networks, Mobile IP, Wireless LAN and IEEE 802.11. Hands-on group lab experience is an integral component in the course. Prerequisite: CS 330 with a grade of C or better or graduate standing, or consent of the instructor. Students who have completed CS 441 are ineligible to enroll. Credit Hours: 3

CS542 - Software Engineering Principles, practices and methodology for development of large software systems. Object-oriented principles, design notations, design patterns and coping with changing requirements in the software process. Experiences with modern development tools and methodologies. A team project is an integral part of this course. Prerequisite: CS 330 with a grade of C or better or graduate standing. Students who have completed CS 435 are ineligible to enroll. Credit Hours: 3

CS545 - Bioinformatics Algorithms This course is an introductory course on bioinformatics algorithms and the computational ideas that have driven them. The course includes discussions of different techniques that can be used to solve a large number of practical problems in biology. Prerequisite: CS 330 with a grade of C or better or graduate standing. Students who have completed CS 438 are ineligible to enroll. Credit Hours: 3

CS547 - Introduction to Graph Theory Graph theory is an area of mathematics which is fundamental to future problems such as computer security, parallel processing, the structure of the World Wide Web, traffic flow and scheduling problems. It also plays an increasingly important role within computer science. Topics include: trees, coverings, planarity, colorability, digraphs, depth-first and breadth-first searches. Prerequisite: MATH 349 with a grade of C or better. Students who have completed CS 447 are ineligible to enroll. Credit Hours: 3

CS549 - Introduction to Combinatorics This course will introduce the student to various basic topics in combinatorics that are widely used throughout applicable mathematics. Possible topics include: elementary counting techniques, pigeonhole principle, multinomial principle, inclusion and exclusion, recurrence relations, generating functions, partitions, designs, graphs, finite geometry, codes and cryptography. Prerequisite: MATH 349 with a grade of C or better. Students who have completed CS 449 are ineligible to enroll. Credit Hours: 3

CS551 - Theory of Computing The fundamental concepts of the theory of computation including finite state acceptors, formal grammars, Turing machines, and recursive functions. The relationship between grammars and machines with emphasis on regular expressions and context-free languages. Prerequisites: CS 311 and CS 330 each with a grade of C or better or graduate standing. Students who have completed CS 451 are ineligible to enroll. Credit Hours: 3

CS552 - Advanced Algorithm Design and Analysis An in-depth treatment of the design, analysis and complexity of algorithms with an emphasis on problem analysis and design techniques. Prerequisite: CS 330 with a grade of C or better or graduate standing. Students who have completed CS 455 are ineligible to enroll. Credit Hours: 3

CS553 - Formal Languages and Automata The Chomsky hierarchy of formal grammars and the corresponding classes of automata. Turing machines and basic concepts of computability. Recursive and recursively enumerable languages. Closure properties. Undecidable problems about Turing machines and context-free languages. Deterministic context-free languages and the construction of LR parsers. Prerequisite: CS 451. Credit Hours: 3

CS555 - Computability and Complexity Turing machines and other models of computation. Computable functions. Church's thesis. Solvable and unsolvable problems. Introduction to complexity theory including the classes P and NP. Polynomial time approximation algorithms for NP-complete problems. Prerequisite: CS 451. Credit Hours: 3

CS570 - Linear Programming Introduction to finding extreme values of linear functionals subject to linear constraints. Topics include: recognition, formulation, and solution of real problems via the simplex algorithm; development of the simplex algorithm; artificial variables; the dual problem and duality theorem; complementary slackness; sensitivity analysis; and selected applications of linear programming. Prerequisite: MATH 221 with a grade of C or better. Students who have completed CS 472 are ineligible to enroll. Credit Hours: 3

CS571 - Optimization Techniques Introduction to algorithms for finding extreme values of nonlinear multivariable functions with or without constraints. Topics include: convex sets and functions; the arithmetic-geometric mean inequality; Taylor?s theorem for multivariable functions; positive definite, negative definite, and indefinite matrices; iterative methods for unconstrained optimization. Prerequisites: MATH 221 and MATH 250 with a grade of C or better. Students who have completed CS 471 are ineligible to enroll. Credit Hours: 3

CS572 - Advanced Topics in Numerical Analysis (Same as MATH 572) Selected advanced topics in Numerical Analysis chosen from such areas as: approximation theory; spline theory; special functions; wavelets; numerical solution of initial value problems; numerical solution of boundary value problems; numerical linear algebra; numerical methods of optimization; and functional analytic methods. Special approval needed from the instructor. Credit Hours: 1-12

CS575 - Numerical Analysis I Introduction to theory & techniques for computation with digital computers. Topics include: solution of nonlinear equations; interpolation & approximation; solution of systems of linear equations; numerical integration. Students will use MATLAB to study the numerical performance of the algorithms introduced in the course. Prerequisites: MATH 221 and MATH 250 with grades of C or better. Students who have completed in CS 475 are ineligible to enroll. Credit Hours: 3

CS580 - Computational Statistics II This course utilizes computational and graphical approaches to solve statistical problems. A comprehensive coverage on modern and classical methods of statistical computing will be given. Case studies in various disciplines such as science, engineering, and education will be discussed. Various topics such as numerical integration and simulation, optimization and maximum likelihood estimation, density estimation and smoothing as well as re-sampling will be presented. Students will be able to create graphical and numerical display based on their data analysis results using R programming language. Prerequisites: MATH 250 and CS 306 or CS 330 with a grade of C or better or graduate standing. Students who have completed CS 480 are ineligible to enroll. Credit Hours: 3

CS583 - Computer Graphics Principles and techniques of computer graphics. Interactive graphics software development using a modern graphics standard such as OpenGL. Topics include: primitives, transforms, clipping, modeling, viewing, texture, lighting and shading. Advanced rendering and modern graphics hardware. Prerequisite: CS 306 with a grade of C or better or graduate standing; MATH 150 and MATH 221 are recommended. Students who have completed CS 485 are ineligible to enroll. Credit Hours: 3

CS584 - User Interface Design and Development Problems and processes in the design of highly usable systems. Understanding stakeholders, requirements, tasks, prototyping, evaluation, guidelines and design process and heuristics. Interactive software concepts and implementation considerations. A group

project is an integral part of this course. Prerequisite: CS 306 with a grade of C or better or graduate standing. Students who have completed CS 484 are ineligible to enroll. Credit Hours: 3

CS585 - Advanced Topics in Computer Graphics Study of computer graphics for realistic image synthesis. Object modeling and associated date structures. Advanced rendering techniques such as raytracing and radiosity. Efficiency considerations. Image composition and compression. Current advances and research problems in realistic computer graphics. Prerequisite: CS 485. Credit Hours: 3

CS586 - Pattern Recognition An introduction to the area of pattern recognition and data science. This course will cover basic and advanced theories, algorithms, and practical solutions of statistical pattern recognition. It covers bayesian learning, parametric and non-parametric learning, data clustering, component analysis, boosting techniques, sequential data, reinforcement learning, and deep learning with neural networks. Credit Hours: 3

CS587 - Software Aspects of Game Development This course focuses on software implementation and development aspects of game production including: software process, system architecture, frameworks, entity management and interaction design, game design, production and business issues as well as technical foundations in graphics modeling and rendering, collision detection, physics, artificial intelligence, and multiplayer techniques. Prerequisite: CS 330 with a grade of C or better or graduate standing. Students who have completed CS 487 are ineligible to enroll. Credit Hours: 3

CS590 - Readings Supervised readings in selected subjects. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-6

CS591 - Special Topics Selected advanced topics from the various fields of computer science. Repeatable on different topics toward degree credit. Credit Hours: 1-3

CS593 - Seminar Preparation and presentation of reports. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-4

CS598 - Graduate Project A practical exercise in the design, implementation, documentation and deployment of a project. A project may be completed through internship, work/study, or a supervised project. For Ph.D. students only, an internship could include face-to-face or online teaching. Credit Hours: 3-9

CS599 - Thesis Special approval needed from the instructor. Credit Hours: 3-9

CS600 - Doctoral Dissertation Dissertation research. Hours and credit to be arranged by the student's academic advisor. Graded S/U only. Restricted to admission to Ph.D. in computer science program. Credit Hours: 1-9

CS601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or graduate project. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis or graduate project hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

ECE494 - Diagnostic Ultrasound Diagnostic ultrasound is an ultrasound-based biomedical imaging technique used to visualize muscles, tissue, and many internal organs, to capture their size, structure and any pathological lesions. This course is an introduction to the principles and applications of biomedical ultrasound. This course will focus on fundamentals of acoustic theory, principles of ultrasonic detection and imaging, design and use of currently available tools for performance evaluation of diagnostic devices, and biological effects of ultrasound. Prerequisite: MATH 305 and ECE 355 with a grade of C or consent of instructor. Restricted to enrollment in ECE programs. Lab fee: $30 to help defray cost of equipment, supplies, and software licenses. Credit Hours: 3

ECE501 - Data Mining with R R programming language: Vectors, Matrices, Lists, Data Frames, Factors, Tables. Review of machine learning techniques: Numerical Regression, Logistic Regression, k-Nearest Neighbors, Decision Trees. ROC curves. Various application case studies. Restricted to graduate standing and consent of instructor. Students who have completed ECE 435 or BME 435 will not receive credit for this course. Credit Hours: 3

ECE502 - Network System Security Principles, design, and implementation of network systems security. Network security basics (computer networks and network security module), packet sniffing and spoofing, network security systems (firewall, virtual private network, and instruction detection systems), security tools (AES, Hash, RSA, and public key infrastructure), and advanced topics such as bitcoin and block chain. Students who have completed ECE 433 will not receive credit for this course. Restricted to graduate standing and consent of instructor. Credit Hours: 3. Credit Hours: 3

ECE503 - Modern Cryptography Probability and basic number theory, block ciphers and key-recovery security, pseudorandom functions, symmetric encryption, hash functions, message authentication codes, authenticated encryption, asymmetric encryption, digital Signatures, key distribution, lattice-based cryptography, identity-based encryption, zero-knowledge e techniques, introduction to quantum cryptography. Credit Hours: 3

ECE504 - Hardware and Software Aspects in the Internet of Things Fundamentals and importance of the Internet of Things (IoT). Sensors and hardware components of IoT systems. Design of energy-efficient IoT systems from circuit to system level. Connectivity in IoT, off-loading strategies, and federated learning concepts. Applications of IoT in smart cities, healthcare, agriculture, and augmented/virtual Reality. Prerequisites: ECE 329 and ECE 321 (or equivalent) with a grade of C or better or consent of instructor. Credit Hours: 3

ECE505 - Surgical Technologies Overview of the ordinary physiology of cells and tissues and the abnormal physiology associated with cancer and/or other major diseases. Role of surgeries in the practice of modern medicine with a special focus on cancer treatment and/or other important procedures. Environment of and people inside the operating room. Therapeutic and diagnostic tools and techniques available in the operating room. Open and minimally invasive surgeries. Introduction to image-guided surgeries. Imaging systems and contrast agents for image-guided surgeries. Introduction to robotic surgeries. Preclinical research, clinical research, and FDA-approval process. Prerequisite: ECE 355 (or equivalent). Credit Hours: 3

ECE506 - Biomedical Optics (Same as BME 506) Fundamental theories of light, including the wave theory of light and the particle theory of light; Fundamental interactions between light and matter, including reflection, refraction, absorption, scattering, fluorescence, and polarization; Biology of cells and tissues; Tissue optical properties; Tissue-targeted contrast agents; Coherence and interference; Light transport in turbid media; Diagnostic applications of light, including microscopy, spectroscopy, fluorescence imaging, fluorescence-lifetime imaging, optical coherence tomography, diffuse optical tomography, and/or biosensors; Therapeutic applications of light, including photodynamic therapy, photothermal therapy, and/or laser ablation. Prerequisites: ECE 355, MATH 251, and PHYS 205B, or equivalent, with a grade of C or better, or consent of instructor. Students who are taking or have taken BME 431 or ECE 451 are ineligible to enroll. Credit Hours: 3. Credit Hours: 3

ECE507 - Image Sensors (Same as BME 507) Fundamentals of semiconductor physics, including the use of doping and biasing to control electronic potentials in devices; Fundamentals of integrated circuits, including the design and fabrication of diodes, transistors, and interconnects; Fundamental interactions between light and matter, including reflection, refraction, and absorption; Structure and operating modes of photodiodes; Architectures and operating principles for charge coupled device (CCD) image sensors and complementary metal-oxide-semiconductor (CMOS) image sensors; Performance metrics for image sensors, including the noise floor, the full-well capacity, the quantum efficiency, and fixed pattern noise; Construction of color image sensors; Signal processing for image sensors, including color interpolation and color correction. Prerequisite: ECE 355 and PHYS 205B, or equivalent, with a grade of C or better, or consent of instructor. Students who are taking or have taken BME 453 or ECE 453 are ineligible to enroll. Credit Hours: 3. Credit Hours: 3

ECE508 - Computer Systems Security Principles of computer systems security. Vulnerabilities, attacks and defenses, cryptographic primitives, authentication, digital signature, access control. Software systems security: buffer overflow, virus, SQL injection. Networking security: denial of service attack, firewall and IDS, Wi-fi security. Hardware systems security: secure processing and secure co-processor. Cloud, edge and IoT security. Students who have completed ECE 434 will not receive credit for this course. Restricted to graduate standing in ECE or consent of instructor. Credit Hours: 3

ECE509 - Systems Reliability Combinatorial aspects of system reliability. Parallel, standby, n-modular redundancy. Common cause failures. Information coding techniques. Reliability optimization and

apportionment. Fault-tolerant computer design techniques. Students who have completed ECE 419 will not receive credit for this course. Restricted to graduate standing and consent of instructor. Credit Hours: 3

ECE510 - Hardware Designs and Architectures for AI Artificial intelligence (AI) is currently widely used in many advanced Machine learning (ML) applications. This course covers the fundamentals of design and implementation of hardware architectures for AI algorithms. Basic hardware building blocks will be introduced. It will also introduce the emerging memristor-crossbar array (MCA) as a computing platform for implementing neural network architectures. Students will gain hands-on experience through mixed-signal simulations and validation techniques. Students will be assigned a team project which applies concepts and tools learned from this course. Prerequisites: ECE 327 and ECE 345 with grades of C or better. Students who have completed ECE 410 will not receive credit for this course. Project-based fee: $35 to help defray cost of software licenses and computers in the lab. Credit Hours: 3

ECE511 - Software Hardware Co-design for Deep Neural Networks Analysis of deep learning techniques such as deep feedforward networks, regularization, optimization algorithms, convolutional networks, and sequence modeling. Utilization of machine learning frameworks such as Tensorflow and Pytorch. Investigation of hardware architectures for machine learning applications such as GPUs, TPUs, and systolic arrays. Students will also work on a semester-based project utilizing the latest advancements in deep neural networks. Students that have completed ECE 411 are not eligible to enroll in ECE 511 as the courses cover similar topics to an extent. Credit Hours: 3

ECE512 - Wireless Networks Compared to infrastructure based wireless communication systems, ad hoc wireless networks present several unique advantages. Thus, it has been widely studied as an important wireless communication paradigm. This graduate level course first introduces several widely adopted wireless communication technologies and then presents the concept, structure, and principles of ad hoc wireless networks. The course also introduces the details of several popular ad hoc wireless networks including mobile ad hoc networks, delay tolerant networks, wireless sensor networks, and connected vehicle networks. Novel applications in those networks will also be introduced. The course work will include paper and literature review, presentations, assignments, and a project that will enable students to be familiar with ad hoc wireless networks. NS2 will be used for student project in this course. Students can gain experience on NS2. Students who have taken ECE 412 are ineligible to enroll. Project-based fee: $10 to help defray cost of equipment. Credit Hours: 3

ECE513 - Digital VLSI Design Principles of the design and layout of Very Large Scale Integrated (VLSI) circuits concentrating on the CMOS technology. MOS transistor theory and the CMOS technology. Characterization and performance estimation of CMOS gates, CMOS gate and circuit design. Layout and simulation using CAD tools. CMOS design of datapath subsystems. Design of finite state machines. Examples of CMOS system designs. Laboratory experience in CMOS VLSI design. Restricted to enrollment in ECE program. Students who have taken ECE 423 are ineligible to enroll. Project-based fee: $35 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE514 - Design of Embedded Systems Introduction of modern embedded system application, platform architecture and software development. Principles of embedded processor architecture, operating systems and networking connectivity. Design and optimize in terms of system power, security and performance. Lecture and laboratory. Students who have taken ECE 424 will not receive credit for this course. Prerequisites: Courses equivalent to ECE 296, ECE 296L, ECE 321, ECE 329, with grades of C or better or consent of instructor. Lab fee: $10 to help defray cost of equipment. Credit Hours: 3

ECE515 - Three Dimensional Integration Systems This course introduces the design of three dimensional VLSI integration systems, including through-silicon-via (TSV) process, characterization and modeling, 3D IC systems design, mixed signal simulation, data management, testing, process, variation, thermal and reliability challenges, as well as review of 3D system design examples. Laboratory experience in design tools (Cadence Virtuoso and Liberate, AMS simulator). Prerequisite: ECE 345 and ECE 423 with a grade of C or better. Restricted to enrollment in ECE program. Credit Hours: 3

ECE516 - Implementation of VLSI Systems with HDL This course is dedicated for advanced Digital VLSI architecture and system implementation for high performance and low power digital signal processing applications. Application-specific processors and architectures to support real time processing of signal processing systems will be studied. Hands-on experience of using state-of-the-art CAD tools on designing such kind of VLSI architecture and systems. Upon completion of this course, students will

entail large HDL-based implementation of a complete VLSI system. Students who have taken ECE 426 are ineligible to enroll. Prerequisite: ECE 327 with a grade of C or better. Project-based fee: $35 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE517 - Edge Computing Analysis of IoT architectures and core IoT modules, integration of sensors and data acquisition systems, power-aware optimizations, and embedded operating systems. Investigation of cloudlet topologies and services, edge to cloud protocols, and security. Special focus will be given on data analytics and machine learning in the cloud and the edge. Credit Hours: 3

ECE518 - Advanced Hardware Security and Trust Cryptographic systems and hardware. Advances in physically unclonable functions. Random number generators. Watermarking. Hardware metering. Side channel attacks including fault injection and power analysis. Types of hardware Trojan attacks (forms and sizes). Detection of hardware Trojans. Hardware tampering and obfuscation. Countermeasures against hardware attacks and hardware authentication. Counterfeit circuits: detection and avoidance. Trust issues in FPGAs. JTAG security and trust. SoC security requirements and secure design. Prerequisite: ECE 418 or graduate standing. Credit Hours: 3

ECE519 - Advanced Computer Security with Machine Learning This course covers the principles and practices of advanced computer systems security using machine learning. The principles encompass topics such as machine learning for computer security, cryptography, software and network security, as well as security and privacy in machine learning applications. The practical component consists of a series of hands-on labs aimed at achieving data confidentiality, authenticity, and integrity, along with exploring various attacks and their countermeasures. Restricted to graduate standing in ECE or consent of instructor. Credit Hours: 3

ECE520 - VLSI Design and Test Automation Principles of the automated synthesis, verification, testing and layout of Very Large Scale Integrated (VLSI) circuits concentrating on the CMOS technology. Resource allocation and scheduling in high-level synthesis. Automation of the logic synthesis for combinational and sequential logic. The physical design automation cycle and CMOS technology considerations. Fault modeling and testing. Timing analysis. Laboratory experience using commercial tools for synthesis and layout. Students who completed ECE 425 can't take ECE 520. They are similar. Prerequisite: ECE 327 with a C- or better or enrollment in ECE graduate programs. Project-based fee: $30 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE521 - Fault-Tolerant Computer Design Concepts of error detection, location and correction in digital systems. Codes for error detection and correction. Models and simulations of faults. Design of tests for combinatorial and sequential circuits. Testability. Design of digital systems with testability. Prerequisite: ECE 423, ECE 425 or consent of instructor. Restricted to enrollment in ECE program. Credit Hours: 3

ECE522 - VLSI Circuit Testing Theoretical and practical aspects of production testing of VLSI circuits. Relations between physical defects and fault models. Procedures for generating test inputs. Design modifications for test application and theory of built-in self-test. Prerequisite: ECE 425 or ECE 520 with a minimum grade of C or consent of instructor. Restricted to enrollment in ECE program. Project-based fee: $25 to help defray cost of software licenses. Credit Hours: 3

ECE523 - Low Power VLSI Design Source of power dissipation, technology impact on power dissipation, low power circuit techniques, energy recovery, synthesis of low power circuits, low power components. Prerequisite: ECE 423 or ECE 513 with a minimum grade of C or consent of instructor. Restricted to enrollment in ECE program. Project-based fee: $35 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE524 - Synthesis and Verification of Digital Circuits Binary decision diagrams, finite state machines and finite automata. Design automation concepts in logic level synthesis, optimization and verification for combinational as well as sequential logic. Technology mapping. Prerequisite: ECE 425 or ECE 520 with a minimum grade of C or consent of instructor. Restricted to enrollment in ECE program. Project-based fee: $35 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE525 - Advances in Physical Design Automation Advances in the automation of VLSI layouts with emphasis on recent developments in deep submicron, FPGA and MCM technologies. Floor planning, placement, routing objectives in high performance designs using deep submicron technology. Timing analysis in the presence of crosstalk. FPGA architectures and design with dynamically reconfigurable

FPGAs. Physical design automation for MCMs. Prerequisite: ECE 425 or ECE 520 with a minimum grade of C or consent of instructor. Restricted to enrollment in ECE program. Project-based fee: $35 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE526 - Network Processing Systems Design Protocol processing, packet processing algorithms, classification and forwarding, queuing theory, switching fabrics, network processors, network systems design tradeoffs. Prerequisite: ECE 422 and ECE 429 or consent of the instructor. Restricted to enrollment in ECE program. Credit Hours: 3

ECE527 - Integrated Interconnection Networks Importance of interconnection networks and networks-on-chip (NOCs). Specifications and constraints. Topology, routing, flow control, deadlock, livelock, arbitration, allocation, performance analysis, simulation. Restricted to enrollment in ECE program. Credit Hours: 3

ECE528 - Programmable ASIC Design Principle and practice of designing and implementing Application-Specific Integrated Circuits (ASIC). Field Programmable Gate Arrays (FPGA). Timing analysis, timing closure and managing difference clock domains in ASIC design. Complex arithmetic circuits. Digital signal processing (DSP) circuits. FPGA microprocessors. Students who have taken ECE 428 are ineligible to enroll. Project-based fee: $50 to help defray cost of equipment and consumable items. Credit Hours: 3

ECE529 - Computer Systems Architecture Principles of performance evaluation, processor microarchitecture, instruction-level parallelism, static and dynamic pipeline considerations. Superscalar processors. Multiprocessor systems. Memory hierarchy design, cache design. Mutual exclusion and synchronization mechanisms. Students who have taken ECE 429 are ineligible to enroll. Restricted to enrollment in ECE program. Credit Hours: 3

ECE530 - Engineering Data Acquisition (Same as ENGR 530) Theory of data acquisition and measurement systems. Criteria for selection of data acquisition hardware and software, instruments, sensors and other components of scientific and engineering experimentation. Methods for sampled data acquisition, signal conditioning, interpretation, analysis and error estimation. Restricted to enrollment in ECE program. Project-based fee: $60 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE531 - Mixed-Signal VLSI Design Analysis and design of mixed-signal integrated circuits. Digital to analog converter (DAC). Analog to digital converter (ADC). Sigma-delta data converters. Performance analysis of signal chains containing both analog and digital signal processing functions. Prerequisite: ECE 446 with a minimum grade of C. Restricted enrollment in ECE program. Project-based fee: $60 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE532 - Programming Parallel Processors Multi-core architecture, threads, thread execution models, thread priority and scheduling, concurrency, multi-threaded programming models, synchronization, performance measurement and local balance, software tools for multi-threaded programming. Restricted to ECE students or consent of advisor. Students who have taken ECE 432 are ineligible to enroll. Project-based fee: $20 to help defray cost of equipment. Credit Hours: 3

ECE533 - Speech Processing (Same as BME 533) Fundamentals of speech production system, signal analysis of speech, speech coding, linear prediction analysis, speech synthesizing, and speech recognition algorithms. Students who have taken ECE 474 are ineligible to enroll. Prerequisite: MATH 250, ECE 355 with grades of C or better or consent of instructor. Credit Hours: 3

ECE534 - Biomedical Signal Analysis (Same as BME 536) The nature of biomedical signals. Electricity in living tissue. Biomedical signal processing and modeling. Modeling and simulation of biomedical systems. Prerequisite: MATH 250, ECE 355 with a grade of C or better or consent of instructor. Project-based fee: $20 to help defray cost of software licenses. Credit Hours: 3

ECE535 - CMOS Radio-Frequency Integrated Circuit Design Introduction of RF IC, passive RLC Networks, passive IC components, MOS Transistors, distributed systems, Smith Chart and S-Parameters, introduction to Band-width estimation, biasing and voltage reference, basic High Frequency Amplifiers, introduction to: noise in RF IC, Low Noise Amplifiers, Power Amplifiers, Phase-Locked Loops and

Oscillators. Lecture and laboratory. Students who have taken ECE 440 are ineligible to enroll. Lab fee: $35 to defray the cost of software licenses and equipment. Credit Hours: 3

ECE536 - Embedded Systems Programming Advanced software concepts and techniques to develop complex software projects on embedded systems. Concepts and techniques include system calls, structure of operating systems, advanced dynamic memory management, cross-compilation, scheduling techniques, and resource management. Students who have completed ECE 430 cannot take ECE 536. They are similar. Credit Hours: 3

ECE537 - Integrated Photonics Fundamentals of electromagnetic theory, waveguides, photonic structures including photonic crystals and integrated micro-ring resonator, numerical simulations of photonic integrated circuits using the beam propagation method, finite-difference time-domain method, rate equations, and fabrication processes. Prerequisite: ECE 441 or consent of instructor. Restricted to enrollment in ECE program. Credit Hours: 3

ECE538 - Medical Instrumentation: Application and Design (Same as BME 518) This course introduces ECE graduate students to the field of medical instrumentation. Medical instrumentation is the application of advanced engineering technology to problems in biology and medicine. The course focuses on fundamentals of instrumentation systems, sensors, amplifiers, and signal precondition. In addition, the course also includes design and applications of medical instrumentation, biopotential measurement, biomedical signal processing, and other related topics. Students who have completed ECE 438 or BME 438 will not receive credit for this course. Prerequisite: MATH 305 and ECE 355 with a grade of C or better, or consent of instructor. Restricted to enrollment in ECE programs. Project-based fee: $45 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE539 - Diagnostic Ultrasound Diagnostic ultrasound is an ultrasound-based medical imaging technique used to visualize muscles, tissue, and many internal organs, to capture their size, structure and any pathological lesions. This course is an introduction to the principles and applications of biomedical ultrasound. This course will focus on fundamentals of acoustic theory, principles of ultrasonic detection and imaging, design and use of currently available tools for performance evaluation of diagnostic devices, and biological effects of ultrasound. Students who have taken BME 439 or ECE 494 cannot receive credit for this course. Prerequisite: MATH 305 and ECE 355 or equivalent courses with a grade of C or consent of instructor. Restricted to enrollment in ECBE programs. Project-based fee: $30 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE540 - CMOS Radio-Frequency Integrated Circuit Design II High frequency amplifier design techniques, noise in RF IC and CMOS low noise amplifiers (LNA), mixers, oscillators, PLLs, frequency synthesizers, power amplifiers, an overview of wireless architectures. Prerequisite: ECE 440 or ECE 535 or equivalent. Lab fee: $50 to defray the cost of software licenses and equipment. Credit Hours: 3

ECE541 - Quantum Information Processing and Devices Fundamentals of information theory: uncertainty and information, thermodynamics of information. Quantum information processing: essential quantum mechanics of states, measurements and Bell's theorem, operations, and their representations as matrices; quantum Shannon theory (von Neumann entropy); quantum entanglement. Quantum cryptography. Various quantum algorithms and computational complexity. Building blocks: qubits and qubit operations, quantum machines. Decoherence, quantum error correction, and fault tolerance. Physical realization and quantum devices: double quantum dot charge qubit, Rabi oscillations of an excitonic qubit, Quantum dot spin-qubits, Photonic quantum computing, Superconducting qubits. Prerequisite: Familiarity with electronic and photonic devices, information theory, theoretical computer science, or quantum mechanics will be beneficial. Credit Hours: 3

ECE542 - Photonics and Devices Ray optics, wave optics, beam optics, polarization of light, Fourier optics, fiber optics, electro-optics, nonlinear optical media, acousto-optics, and photonic switching. Students who have completed ECE 441 cannot receive credit for this course. Prerequisite: ECE 375 (or equivalent) with a grade of C or better or consent of instructor. Project-based fee: $50 to help defray the cost of equipment and consumables. Credit Hours: 3

ECE543 - Advanced Analog Integrated Circuit Design Analysis and design of CMOS analog integrated circuits. Circuit noise analysis. Low-voltage high-performance operational amplifiers. Voltage and current reference circuits. Integrated analog filter circuits. Micropower circuits. Prerequisite: ECE 446 or ECE 546

with a minimum grade of C or consent of instructor. Restricted to enrollment in ECE program. Project-based fee: $35 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE543A - Bioelectronics and Biosensors (Same as BME 528) The sources of electrical signals in biological systems. Methods and types of sensors for sensing bioelectrical signals, including amperometric, potentiometric, piezo-electric, impedance, and FET based biosensors. Interface between biosensors and electronics for sensor signal condition and data acquisition. Precision electronics for biosensor signal acquisition, including potentiostat, current, charge, capacitance and impedance sensing circuit, lock-in amplifier. Prerequisite: ECE 345 or equivalent with a grade of C or better. Students who have completed ECE 442 or BME 418 will not receive credit for this course. Credit Hours: 3. Credit Hours: 3

ECE544 - Optical Imaging and Photonics (Same as BME 544) Geometrical optics, including refraction and reflection; Physical optics, including interference, diffraction, and polarization; Optical aberrations, including causes and effects; Fourier optics, with applications to imaging; Light sources, including LEDs and lasers; Photodetectors, including photodiodes and image sensors; Lens systems; Microscopes. Students who are taking or have taken ECE 448 or BME 448 are ineligible to enroll. Prerequisites: ECE 355, MATH 251, and PHYS 205B, or equivalent, with a grade of C or better, or consent of instructor. Lab fee: $125 to help defray the cost of equipment, supplies, and software packages. Credit Hours: 3. Credit Hours: 3

ECE544A - Computer Vision This course covers fundamental and advanced topics in computer vision. Computer vision applications, image formation, image processing and filtering, deep learning, computer recognition and matching, 3D computer vision, motion and video. Students who have taken ECE 444 or BME 444 will not receive credit for this course. Prerequisite: ECE 355 with a minimum grade of C- or consent of instructor. Restricted to enrollment in ECE program. Credit Hours: 3. Credit Hours: 3

ECE545 - Advanced Semiconductor Devices Technology drivers: Moore, More-Moore, and More-than-Moore trends. Case Study: Integrated health monitoring systems, 3-D SoCs. Review of Solid-State Theory: electronic, magnetic, optical and thermal properties of semiconductors. Energy Related Devices: solid-state lighting, solar cells, thermoelectric devices, piezoelectric devices, energy storages and supercapacitors. Optoelectronic and Photonic Devices: Imagers, LEDs, OLEDs, Lasers, LCDs, thin-film transistors (TFTs). Sensors and Detectors. Microwave and Terahertz Devices. Prerequisite: ECE 447 or ECE 423 or ECE 446 or PHYS 425 or PHYS 430 or instructor consent. Credit Hours: 3

ECE545A - VLSI Design for Manufacturability and Process Control VLSI manufacturing: oxidation, photolithography, etching, doping; process integration and monitoring; Yield modeling. Design for manufacturability (DFM): Sources and impact of variability; Lithography aware design; Stress and related variations in FinFETs and beyond; Design solutions for analog systems, parametric fluctuations in digital systems, interconnects, compensation and limiting the degrees of freedom; Criticality-aware DFM. Process control: patterns, multivariate and supervisory control; Statistical experimental design; Process modeling and equipment diagnosis. Prerequisite: familiarity with physics of semiconductor devices (e.g., ECE 447 or ECE 423 or PHYS 425 with a grade of C or better, or instructor consent). Credit Hours: 3

ECE546 - Analog Circuit Design Analysis and design of electronic circuits, both discrete and integrated. Computer-aided circuit design and analysis. Design of amplifier and filter circuits. Circuit stability analysis and frequency compensation techniques. Restricted to enrollment in ECE program. Students who have taken ECE 446 are ineligible to enroll. Project-based fee: $10 to help defray cost of equipment. Credit Hours: 3

ECE547 - Semiconductor Devices Semiconductor industry and Moore's law. Review of quantum mechanics of atoms. From atoms to crystals: energy bands, effective mass and density-of-states. Semiconductor statistics. Carrier transport phenomena. PN junctions. Schottky junctions. Bipolar junction transistors (BJTs). MOSFETs: capacitance-voltage and current-voltage characteristics, threshold voltage, scaling and short-channel effects, SPICE models. CMOS process integration. Basic optoelectronic devices: LEDs and solar cells. Lecture and laboratory. Students who have taken ECE 447 are ineligible to enroll. Prerequisite: ECE 345 or equivalent. Project-based fee: $25 to help defray cost of software licenses. Credit Hours: 3

ECE548 - Quantum Phenomena and Devices Introduction: Classical Phenomena and Devices. Why Quantum Devices? Current Picture: Academia and Industry. Essential Statistical Mechanics. Essential

Quantum Mechanics. Quantum Theory of Electrons: Quantization, Tunneling, Quantum Interference, Quantum Hall Effect, Scattering and Broadening, Dephasing and Shot Noise. Coulomb Blockade. Quantum Optics. Collective Phenomena and Spin. Relativistic Quantum Phenomena. Quantum Phase Transition. Quantum Computation. Prerequisite: ECE 447 or ECE 423 or ECE 446 or PHYS 425 or PHYS 430 with C or better or instructor consent. Credit Hours: 3

ECE549 - Fiber Optic Communications Fundamentals of step index and graded index fiber waveguides using geometrical optics and Maxwell's equations. Other topics include design criteria, practical coupling techniques, discussion of optical sources and detectors used in light-wave communications, system examples, characterization and measurement techniques. Prerequisite: ECE 447 or ECE 448 or consent of instructor. Restricted to enrollment in ECE program. Credit Hours: 3

ECE550 - Nanoscale VLSI Devices Review of fundamental principles of semiconductor devices. NanoTransistor: Charge-based devices-MOSFETs, non-ideal, atomistic, and quantum effects in nanoscale MOSFETs, charge-coupled devices. Advanced MOSFETs: FinFETs, SOI, SiGe and III-Vs, carbon nanotubes, graphene and 2-D semiconductors, nanowires. High electron mobility transistors (HEMTs), HBTs, and power MOSFETs. Compact and SPICE models for MOS devices. VLSI interconnects, parasitic elements, 3-D integration and reliability issues. Non-charge based devices-tunnel FETs, spin-based devices. NanoMemory: EEPROM and Flash, phase change memory, memristors, magnetic and ferroelectric, spin-torque devices, DRAM and ZRAM cells. TCAD simulation of semiconductor devices. Prerequisite: ECE 447 or ECE 423 or ECE 446 or PHYS 425 or PHYS 430 with a C or better or instructor consent. Project-based fee: $25 to help defray cost of software licenses. Credit Hours: 3

ECE551 - Probability and Stochastic Processes for Engineers Axioms of probability, random variables and vectors, joint distributions, correlation, conditional statistics, sequences of random variables, stochastic convergence, central limit theorem, stochastic processes, stationarity, ergodicity, spectral analysis, and Markov processes. Restricted to graduate student status. Students who have taken BME 351 or ECE 351 cannot receive credit for this course. Restricted to enrollment in ECBE. Project-based fee: $20 to help defray cost of software licenses. Credit Hours: 3

ECE552 - Signal Detection and Estimation Estimation theory: parameter estimation, minimum variance unbiased estimators, sufficient statistics, Cramer-Rao lower bound, best linear unbiased estimators, maximum likelihood estimators, least squares, Bayesian estimation, maximum a posteriori estimators, minimum mean square error estimators, linear minimum mean square error estimators, Wiener filtering. Detection theory: hypothesis testing, likelihood ratios, Neyman-Pearson detection, Bayesian hypothesis testing, matched filtering, multiple hypothesis testing, sequential detection, composite hypothesis testing, uniformly most powerful tests, generalized likelihood-ratio tests. Prerequisite: ECE 551 or consent of instructor. Restricted to enrollment in ECE program. Credit Hours: 3

ECE553 - Computer Network System Architecture Principles of Computer Networks. Protocols and system level implementations. Socket programming, router and switching fabric architecture, security and packet classification techniques, multimedia networking and QoS. Restricted to enrollment in ECE program. Students who have taken ECE 422 are ineligible to enroll. Project-based fee: $10 to help defray cost of equipment. Credit Hours: 3

ECE554 - Broadband Wireless Communications Statistical models for broadband wireless channels: angular, delay, Doppler and spatial domain characterizations, near/far-field propagation characteristics, spatial non-stationary propagation, and spatial wide-band fading. Broadband channel estimation, hybrid beamforming/detection and massive multi-antenna (MIMO) techniques. Millimeter-wave, terahertz, and holographic communication models. Reconfigurable/reflective intelligent surfaces and performance analysis. Broadband modulation multiple access techniques: index modulation, orthogonal time frequency space modulation, and orthogonal/non-orthogonal multiple access techniques. Prerequisites: ECE 315 and ECE 355 or consent of instructor. Restricted to EE or CEGR majors or consent of instructor. Credit Hours: 3

ECE555 - Introduction to Information Theory and Channel Coding Entropy and Mutual Information. Channel Capacity. Gaussian Channel. Linear Block Codes. Convolutional Codes. Advance Channel Coding Techniques. Students who have taken ECE 476 are ineligible to enroll. Restricted to enrollment in ECE program. Credit Hours: 3

ECE556 - Digital Communications Digital communication signals and systems characterization. Deterministic receiver design. Probabilistic receiver design. Error control coding. Communication over band limited channels. Prerequisite: ECE 551 or consent of the instructor. Restricted to enrollment in ECE program. Credit Hours: 3

ECE557 - Computational Electronics Elements of computational science/engineering. High-performance clusters and software tools for HPCs. Essential numerical methods. Review of solid-state theory. Fundamental physics of charge transport in semiconductor VLSI devices. Numerical solution of Poisson's and carrier continuity equations in semiconductor devices. Boltzmann transport equation and Monte Carlo solutions. Electronic bandstructure calculations using the tight-banding formalism. Introduction to NEGF formalism. Commercial and non-commercial semiconductor device modeling tools. Prerequisite: Familiarity with physics of semiconductor devices (e.g., ECE 447 or ECE 423 or PHYS 425 with a grade of C or better, or instructor consent). Project-based fee: $25 to help defray cost of software licenses. Credit Hours: 3

ECE558 - Digital Image Processing I Scope and applications of digital image processing, digital image fundamentals, intensity transformations and spatial filtering, filtering in the frequency domain, image segmentation, basics of color image processing. Students who have taken ECE 458 are ineligible to enroll. Prerequisite: ECE 355 with a minimum grade of C- or consent of instructor. Project-based fee: $30 to help defray cost of equipment. Credit Hours: 3. Credit Hours: 3

ECE559 - Reinforcement Learning A graduate level course on the theory and practice of Reinforcement Learning. The course covers topics such as finite and infinite horizon Markov decision processes, multi-armed bandit problem, dynamic programming, approximate dynamic programming, value and policy iteration, Q-learning, Monte Carlo methods, and stochastic approximation. Prior knowledge of machine learning and optimal control is helpful but not required. Credit Hours: 3

ECE559A - Biomedical Microelectromechanical Systems The course is designed to introduce students with fundamentals of MEMS and its applications. The emphasis will be on physical principle in sensors and corresponding fabrication techniques, with supplemental discussion of the state-of-art applications in industry and research. Students will learn to analyze and design systems by solving regular homework problems and active participation during lectures and in-class examples. Topics: Introduction of MEMS (Chapter 1), fundamentals of microfabrication and nanofabrication, fundamentals of physics in sensors, a case study of electrostatic sensing, microfluidics and biomedical applications, projects. Prerequisites: MATH 251, PHYS 205A, PHYS 205B each with a grade of C or better, or consent of instructor. Students who have completed BME 419 or ECE 459 will not receive credit for this course. Project-based fee: $50 to help defray cost of equipment and commodities. Credit Hours: 3

ECE560 - VLSI Material and Device Characterization Introduction to semiconductors. Materials for modern VLSI: crystals, tubular and monolayer materials, organic materials, heterostructures, wafers and notations. VLSI unit processes, contacts and interconnects, integration and packaging. Spontaneous formation and ordering of nanostructures. VLSI device characterization: wafer mapping, line width and contact resistance, measurement of MOS parameters, defect characterization using DLTS, carrier mobility and lifetime measurements. Optical characterization, electron beam microscopy, particle and X-ray techniques. Reliability and lifetime measurements: failure statistics and modes, hot carriers, NBTI, oxide integrity, electromigration and electrostatic discharge. Power dissipation and cooling. Prerequisite: Familiarity with physics of semiconductor devices (e.g., ECE 447 or ECE 423 or PHYS 425 with a grade of C or better, or instructor consent). Credit Hours: 3

ECE561 - Mechatronics and Embedded Control Components of mechatronics systems, mathematical modeling, system identification, numerical tools for design and analysis, single-loop controller design, embedded systems, data acquisition and signal conditioning, sensors, actuators, networked control. This course includes lab session. Students who have taken ECE 456 are ineligible to enroll. Lab fee: $35 to help defray the cost of software licenses. Credit Hours: 3

ECE562 - Microwave Engineering I Electromagnetic theory, analysis, design, fabrication, measurement and CAD applied to passive networks at microwave frequencies. Topics include: Transmission lines, Waveguides, Impedance matching, Tuning, Resonators, Scattering parameters, the Smith Chart. Lecture and Laboratory. Students who have taken ECE 479 are ineligible to enroll. Prerequisite: ECE 375 or

equivalent. Restricted to enrollment in ECE program. Project-based fee: $100 to help defray cost of software licenses. Credit Hours: 3

ECE563 - Advanced Image Sensors Pixel- and system-level design of charge coupled device (CCD) and complementary metal-oxide-semiconductor (CMOS) image sensors; Image processing pipelines for CCD and/or CMOS image sensors; Sources of nonlinearity and non-uniformity in image sensors, including photodiodes and amplifiers; Sources of noise in image sensors, including photon shot noise, dark shot noise, reset (kTC) noise, flicker (1/f) noise, and quantization noise; Materials used in image sensors, including silicon and indium gallium arsenide; Sources of resolution loss in image sensors, including crosstalk; Methods for evaluating image sensors; Technologies and techniques for moving beyond intensity-based imaging, including spectral imaging, polarization imaging, volumetric imaging, temporal imaging, and/or light-field imaging. Prerequisite: BME 453 or ECE 453 with a grade of C or better, or consent of instructor. Credit Hours: 3

ECE564 - Optimal Control Optimization techniques for linear and nonlinear systems. Variational calculus. Dynamic programming. Pontryagin's maximum principle. Hamilton-Jacobi theory. Linear regulator. Bang Bang control, minimum time control, singular control. Discrete variational calculus. Combined estimation and control. Computational methods in optimal control. Prerequisite: ECE 456 or consent of instructor. Restricted to enrollment in ECE program. Credit Hours: 3

ECE565 - Nonlinear Control Systems Analysis and design of nonlinear dynamical systems. Topics include: nonlinear differential equations, stability, Lyapunov stability analysis, stability of perturbed systems, linearization, and central manifold theorem. Stabilization, feedback linearization, and controller design methods such as backstepping and sliding mode control. Credit Hours: 3

ECE566 - Linear Systems Theory Introduction to the structure and analysis of linear dynamical systems in time domain. Linear algebra review, solutions of linear differential equations, state-space representations, state transition matrix, and time varying systems. Introduction to fundamental mathematics of linear spaces and linear operator theory. Structural properties of linear systems such as controllability, observability, and stability. Design and synthesis of controllers and state observers for linear systems. Linear quadratic regulatory theory and Kalman filter. Credit Hours: 3

ECE567 - Modern Biomedical Imaging (Same as BME 567) Diagnostic x-ray imaging. Tomographic imaging. Ultrasound imaging. Magnetic resonance imaging (MRI). Optical imaging. Signal and noise characteristics. Image quality evaluation. Three-dimensional image reconstruction algorithms. Students who have taken ECE 467 or BME 467 cannot receive credit for this course. Prerequisite: MATH 305 and ECE 355 with a grade of C- or better, or consent of instructor. Restricted to enrollment in ECE program. Project-based fee: $30 to help defray cost of software licenses and equipment. Credit Hours: 3. Credit Hours: 3

ECE568 - Introduction to Machine Learning for Engineering Applications Basic machine learning concepts: Model selection, feature scaling, bias-variance trade-off, regularization, Performance metrics and validation techniques, Probability and statistics review. Supervised learning: Linear/non-linear regression and logistic regression, Generalized linear models, Generative learning models, Bayes decision theory, Naive Bayes classifier, Nearest neighbor classifiers, Hidden-Markov models, Support vector machines, Kernel methods, Bagging, Boosting. Unsupervised Learning: Clustering: K-means, Expectation-maximization, Anomaly detection, Dimensionality Reduction: Principal components analysis, transform techniques. Basics of reinforcement learning and deep learning. Restricted to 4th Year or graduate standing. Students who have taken ECE 469 cannot receive credit for this course. They are similar. Credit Hours: 3

ECE568A - Digital Signal Processing This course introduces graduate students to the field of digital signal processing, which is an area of science and engineering that has developed rapidly. The course topics include discrete-time signals and systems analysis, z-transform, discrete Fourier transform, fast Fourier transform algorithms, digital filter design, and other related topics. Students who have completed ECE 468A will not receive credit for this course. Prerequisite: ECE 355 with a grade of C or better, or consent of instructor. Project-based fee: $20 to help defray cost of equipment. Credit Hours: 3

ECE569 - Biomedical Instrumentation (Same as BME 538) Basic concept of Medical instrumentation, basic sensors and principles, amplifiers, biopotential electrodes, blood pressure and sound, measurement of respiratory system, chemical biosensors, Cellular measurements, Nervous system measurements,

magnetic resonance imaging. Prerequisites: PHSL 410A or CHEM 444 or consent of instructor. Restricted to enrollment in ECE program. Lab fee: $45 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE570 - Principles of Communication Systems This course covers principles of communication systems. Topics include representation of signals and systems, amplitude modulation, angle modulation, probability theory and random processes for communication system designs, transition from analog to digital and pulse code/delta modulation, baseband digital transmission, digital band-pass transmission techniques, introduction to information theory and coding, wireless channel modeling, cellular systems and performance analysis. Lectures and laboratory projects. Prerequisites: ECE 315 and ECE 355 or consent of instructor. Students having passed ECE 478 are not eligible to enroll. Credit Hours: 3

ECE570A - Wireless Communication Systems This course covers fundamentals of wireless communication systems. Topics include wireless system architectures, channel modeling, introduction to cellular systems, digital modulation and multiple-access techniques, introduction to multiantenna techniques, performance analysis, wireless physical layer security, future trends in wireless communications. Prerequisites: ECE 315 and ECE 355 with a grade of C or better or consent of instructor. Students who have completed ECE 471 will not receive credit for this course. Project-based fee: $20 to help defray cost of software and equipment. Credit Hours: 3

ECE571 - Advanced Wireless Communication This course covers advanced topics in wireless communications. Topics include wireless system architectures, wireless channel modeling, cellular systems and co-channel interference, advanced digital modulation and multiple-access techniques, massive MIMO, mm-wave communications, performance analysis, radio resource allocation and optimization, wireless physical layer security, enabling technologies for 5G. Restricted to enrollment in ECE program or consent of instructor. Project-based fee: $20 to help defray cost of software licenses. Credit Hours: 3

ECE572 - Neural Networks (Same as BME 572) Anatomy and physiology of the cerebral cortex, Feed-forward Networks, Linear Associator, Multilayer Perceptrons, Feedback Networks, Hopfield Networks, ART. Applications to pattern recognition, robotics, image processing, and speech processing. Optical and electronic implementations. Students who have taken BME 470 or ECE 470 cannot receive credit for this course. Prerequisite: MATH 305 with a C or better or consent of instructor. Credit Hours: 3

ECE573 - Field and Waves II Time-harmonic electromagnetic fields in dielectric and lossy media, transmission lines, antennas and resonators. Techniques include duality, image theory, reciprocity and integral equations. Boundary value problems solved for several frequently encountered symmetries. Prerequisite: ECE 477. Restricted to enrollment in ECE program. Credit Hours: 3

ECE574 - Nonlinear Optics Coupled-mode-analysis applied to nonlinear wave interactions, harmonic generation, parametric amplification, backward wave amplifiers, backward oscillation in laser systems, phase conjugation and multiple-wave mixing systems, Pockel and Kerr effects, and electro-optical modulations in optical communication systems. Prerequisite: ECE 375 or consent of instructor. Restricted to enrollment in ECE program. Credit Hours: 3

ECE575 - Antennas I Analysis, design, fabrication, measurement and CAD applied to basic antenna types. Fundamental parameters. Friis transmission equation. Impedance and pattern measurements. Resonant microstrip and wire antennas. Arrays and line sources. Lecture and laboratory. Students who have taken ECE 472 are ineligible to enroll. Prerequisite: ECE 375 or equivalent. Restricted to enrollment in ECE program. Project-based fee: $120 to help defray cost of software licenses. Credit Hours: 3

ECE575A - Cyber Security for Digital Health This course introduces students to cyber security for digital health applications. Introduction to cyber security and cyber-attack surface, cyber security for electronic health records, cyber security for medical information, security and identity based on characteristics of face recognition and fingerprint recognition, cyber security for networked medical devices and healthcare facilities, cyber security for wearable or implantable devices. Students who have competed ECE 475 will not receive credit for this course. Prerequisite: MATH 251 with a minimum grade of C- or consent of instructor. Credit Hours: 3. Credit Hours: 3

ECE576 - Numerical Electromagnetics Numerical solution of electromagnetic problems by methods that include finite element, integral equation, moment, spectral domain and finite difference. Examination of

electromagnetic problems and their solutions in current literature. Prerequisite: ECE 573. Restricted to enrollment in ECE program. Credit Hours: 3

ECE577 - Antennas II Analysis, design and CAD of antennas. Numerical methods. Broadband, traveling-wave, frequency independent, electrically-small, aperture and microstrip antenna types. Prerequisite: ECE 472. Restricted to enrollment in ECE program. Credit Hours: 3

ECE578 - Digital Image Processing II Full-color image processing, image noise and degradation models, image restoration, inverse filtering, Wiener filtering, geometric transformations, image compression models, error-free compression, lossy compression, compression standards, dilation and erosion, opening and closing operations, morphological filtering, boundary descriptors, regional descriptors, principal components, vision-based pattern recognition. Prerequisite: ECE 558. Restricted to enrollment in ECE program. Credit Hours: 3

ECE579 - Microwave Engineering II Analysis and design of passive and active devices at microwave frequencies. Topics include: power dividers, couplers, filters, ferrite devices, noise, noise effects in detectors, mixers, modulators, amplifier and oscillator design, and an introduction to microwave systems. Prerequisite: ECE 479. Restricted to enrollment in ECE program. Credit Hours: 3

ECE579A - Terahertz Devices and Applications THz band. Interaction of THz with matter, THz system components. Generation and detection of THz signals: photoconductive antenna, optical rectification, electro-optical sampling, quasi-phase-matching crystals, photo-mixers. Terahertz quantum cascade lasers: intersubband transitions, quantum dots photodetector, thermal detectors, device design and modeling. THz in 2D materials: Graphene and TMDs. Terahertz optics: metamaterials, photonic crystals, plasmonics. THz imaging: tomography, medical diagnostics. Spectroscopy: atoms, molecules, nanostructures. Nondestructive evaluation and security checks. THz wireless systems and THz in space. Prerequisite: familiarity with physics of semiconductor devices (e.g., ECE 447 or ECE 423 or PHYS 425 with a grade of C or better, or instructor consent). Credit Hours: 3

ECE580 - Seminar Study and formal presentation by students of selected research in electrical and computer engineering. Restricted to students in the graduate program in Electrical and Computer Engineering. Special approval needed from the instructor. Credit Hours: 1

ECE581 - Wind and Solar Energy Power Systems The course introduces students to wind and solar energy power systems. Planning of wind generation; and operation of wind generators, mechanical and electrical design, power conditioning, control and protection. Planning, operation and design of electric solar plants; power conditioning, control and protection. Students who have taken ECE 481 are ineligible to enroll. Credit Hours: 3

ECE582 - Power Electronics This course offers a comprehensive overview of power electronics devices and circuits, covering both foundational and advanced concepts. The primary objective is to equip students with design methodologies and analytical tools crucial for the efficient conditioning and management of electrical power. Topics include semiconductor power materials and devices, power converters, converter dynamics and control, switched mode power supply, and the use of machine learning for design optimization. Real-world applications in clean energy, electrification, electric vehicles, computing, display, and solid-state lighting will be covered. Fabrication and packaging of power electronics modules will also be discussed. Students will also engage in hands-on design projects using industry-standard TCAD software. Students who have received credit for ECE 482 will not receive credit for this course. Prerequisite: ECE 345 with a grade of C or better, or instructor consent. Project/design fee: $65 to help defray cost of software licenses. Credit Hours: 3

ECE583 - Electric Drive Systems Course content is roughly 1/3 power electronics, 1/3 applied control and 1/3 electric machinery and focuses on analysis, simulation, and control design of electric drive based speed, torque, and position control systems. Advanced topics depending on the semester are taught. Students who have taken ECE 483 are ineligible to enroll. Project-based fee: $65 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE584 - Electric and Hybrid Vehicles This course provides a comprehensive overview of modern all electric vehicles. It also touches on hybrid and plug-in hybrid vehicles. Topics include design analysis of vehicle components, trends in state-of-the-art power electronics materials, devices, and converters, battery and energy storage technologies, and the interaction of vehicles with the power grid. Key

technical aspects with appropriate level of mathematical formulations and engineering design guidelines will be discussed. Essential features of autonomous driving system architecture and the associated hardware and software requirements will also be covered. Using industry-standard TCAD design software, students will work on a comprehensive design project or research paper on a topic of interest such as: i) emerging electric motors, ii) high-performance lithium ion batteries, iii) high-breakdown voltage power electronic converters. Students who have completed ECE 484 will not receive credit for this course. Prerequisite: Familiarity with electronic devices and circuits and electric motors or instructor consent. Project/design fee: $65 to help defray cost of software licenses. Credit Hours: 3

ECE585 - Power Systems Stability and Control Fundamentals of power system stability, synchronous machine modeling and simulation, transient and small signal stability, control and protection, power system stabilizers, voltage stability, voltage collapse, concepts and devices of flexible ac transmission, mid-term and long-term stability. Credit Hours: 3

ECE586 - Computational Methods in Power Systems The course covers advanced methods for the computation and analysis of power systems. Topics: circuit graph theory and network matrices, computation of electromagnetic transients, computation of power flows and faults, computation of system stability, stochastic methods in power systems, load forecasting, state estimation, unit dispatch. The course uses power system software. Lecture. Restricted to enrollment in the ECE program. Credit Hours: 3

ECE586A - Clean Electric Energy History and future of energy resources and their use as a component of electrical systems. Fossil fuels and renewable energy sources. Environmental and economical impacts of various energy sources. Electric energy generating plants and distributed generation. Design of hybrid renewable energy systems. Students who have completed ECE 486 will not receive credit for this course. Prerequisite: ECE 385 with a grade of C or better, or consent of instructor. Credit Hours: 3. Credit Hours: 3

ECE587 - Modern Power Systems Operation This course provides students with a comprehensive picture of the techniques used in modern power systems operation. The course introduces central "terminal" characteristics for thermal and hydroelectric power generation systems, along with new optimization techniques for tackling "real-world" power systems operating problems. The topics include: analysis of different bidding strategies in competitive electricity markets, prediction of load and price, analysis of power systems security, different methods of optimal power flow, analysis of power systems uncertainty and reliability, economic dispatch, and unit commitment analysis. Project-based fee: $65 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE587A - Power Systems Analysis Modeling and analysis of electric power systems. Topics covered: AC power, generators, power transformers, transmission line parameters and steady state operation, computation of power flows. The course uses power system analysis software. Students who have completed ECE 487 will not receive credit for this course. Prerequisite: ECE 385 with a grade of C or better, or consent of instructor. Credit Hours: 3. Credit Hours: 3

ECE588 - Power System Engineering The course covers topics involving the design and operation of a power system. Topics: symmetrical and unsymmetrical power system faults, power system protection design, transient stability of power generators, power system economic operation, power system control, transient operation of transmission lines. The course uses power system software. Lecture. Students who have taken ECE 488 are ineligible to enroll. Credit Hours: 3

ECE589 - Electric Power Distribution Design of primary and secondary distribution networks. Load characteristics. Voltage regulation. Metering techniques and systems. Protection of distribution systems. Special topics related to power distribution. Students who have taken ECE 489 are ineligible to enroll. Prerequisite: ECE 235. Credit Hours: 3

ECE592 - Special Investigations in Electrical Engineering Individual advanced projects and problems selected by student or instructor. Restricted to graduate standing. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593A - Advanced Topics in Electrical Engineering-Antennas and Propagation Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering.

This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593B - Advanced Topics in Electrical Engineering-ASIC Design Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593C - Advanced Topics in Electrical Engineering-Communications Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593D - Advanced Topics in Electrical Engineering-Computer Architecture Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593E - Advanced Topics in Electrical Engineering-Control Systems Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593F - Advanced Topics in Electrical Engineering-Design Automation Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593G - Advanced Topics in Electrical Engineering-Digital Design Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593H - Advanced Topics in Electrical Engineering-Digital Testing and Verification Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593I - Advanced Topics in Electrical Engineering-Electromagnetic Fields and Waves Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593J - Advanced Topics in Electrical Engineering-Embedded Systems Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593K - Advanced Topics in Electrical Engineering-Medical Imaging Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593L - Advanced Topics in Electrical Engineering-Mixed-Signal Testing and Design Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593M - Advanced Topics in Electrical Engineering-Nanotechnology Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course

is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593N - Advanced Topics in Electrical Engineering-Network Systems Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593O - Advanced Topics in Electrical Engineering-Photonics Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593P - Advanced Topics in Electrical Engineering-Physical Design Automation Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593Q - Advanced Topics in Electrical Engineering-Power Electronic Converters and Drive Systems Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593R - Advanced Topics in Electrical Engineering-Power Quality Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593S - Advanced Topics in Electrical Engineering-Power System Control and Protection Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593T - Advanced Topics in Electrical Engineering-Renewable Energy Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593U - Advanced Topics in Electrical Engineering-RF and Microwave Systems Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593V - Advanced Topics in Electrical Engineering-Signal Processing Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593W - Advanced Topics in Electrical Engineering-Software Engineering Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593X - Advanced Topics in Electrical Engineering-Wireless Systems Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE595 - Communication Skills for Engineering Graduate Students This course prepares graduate engineering students to communicate technical information to various audiences and for various purposes. Principles and strategies are applied to theses, dissertations, scholarly presentations, and other engineering documents such as lab reports, user manuals, business correspondences, job

application materials, and engineering ethics. Research tools and software programs prepare students to deliver oral presentations on current engineering topics. Restricted to graduate standing. Does not count toward the hours required for graduation in the ECE program. Restricted to enrollment in ECE program. Credit Hours: 3

ECE596 - Principles of Biomedical Engineering (Same as BME 596) Principles of biomechanics, biomaterials, electrophysiology, modeling, instrumentation, biosignal processing, medical imaging, and biomedical optics. Professional moral and ethical issues in biomedical research and development. Students who have taken ECE 460 are ineligible to enroll. Prerequisite: MATH 250 with a grade of C or better or consent of instructor. Credit Hours: 3

ECE599 - Thesis Credit Hours: 1-6

ECE600 - Doctoral Dissertation Dissertation research. Hours and credit to be arranged by director of graduate studies. Graded S/U only. Restricted to Admission to PhD program in Electrical and Computer Engineering. Credit Hours: 1-16

ECE601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Cybersecurity and Cyber Systems Faculty

AlSobeh, Anas, Assistant Professor, Computer Science, Ph.D., Utah State University, 2015; 2023. Software engineering, web technology/services, machine learning, artificial intelligence, and cybersecurity analysis.

Imboden, Thomas, Associate Professor, Information Technology, M.S., DePaul University, 2007; 2008. Networking, cybersecurity.

Sissom, James D., Associate Professor, Information Technology, M.P.Ad., Southern Illinois University Carbondale, 1996; 2003. E-learning, data analytics, higher ed information technology.

Woodward, Belle S., Associate Professor, Information Technology, M.A., Webster University, 1997; 2004. Privacy, ethics and technology, women in computing.

Yang, Ning, Assistant Professor, Information Technology, Ph.D., Southern Illinois University, 2020; 2020. Security of internet of things, emerging networking technologies for connected vehicles, machine learning for security.

Doctor of Medical Science

The Doctor of Medical Science (DMSc) degree is offered by the School of Medicine Department of Physician Associate Medicine. All of the courses in the DMSc degree are specific to PAs. Course activities are examined from the perspective of PAs in clinical practice and PA education. The program utilizes online learning activities and offers the choice of an education or clinical practicum.
The DMSc program at Southern Illinois University will prepare medical professionals who are thought leaders working in health care, higher education, research and innovative industries, as well as public and private agencies. These PA leaders will be thoroughly grounded in knowledge base, research paradigms, practical applications, and the ethical/legal implications of their respective career paths. The DMSc program will provide a balanced mix of theory, research, and practical application in the areas of medical practice, education, and leadership.

Admission

To be considered for enrollment in the program, applicants must have a master's degree in PA studies or equivalent from a PA program accredited by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) and either be in clinical practice or an educator in a PA program in the United States or Canada. Applicants must also possess an unrestricted state license to practice as a Physician Assistant where applicable. **Direct entry** is available to PAs who received a bachelor's degree in PA Studies or equivalent during the era of this being the professional standard and are NCCPA certified, and to PAs with a master's degree in PA studies or equivalent with a P/F grade standard and are NCCPA certified. This program requires a non-refundable $75 application fee (subject to change without notice by the SIU Board of Trustees) that must be submitted with the application for admission to graduate study in the DMSc program.

Bridge Pathway

The Doctor of Medical Science (DMSc) Bridge is a streamlined pathway designed to recognize the prior advanced clinical and professional accomplishments of Physician Assistants/Associates (PAs). The DMSc Bridge offers a reduced 21-credit hour curriculum, in contrast to the standard 37-credit hour curriculum, by waiving the Clinical Practicum course series requirement. This waiver acknowledges the significant advanced clinical training and experience applicants bring through one or more of the following:

1. Completion of a PA postgraduate **Residency**
2. Completion of a PA postgraduate **Fellowship**
3. Earned a **Certificate of Added Qualifications (CAQ)** with NCCPA in any specialty
4. Graduation from the **SIU Master of Science in Physician Assistant Studies (MSPA)** program within the previous **five years**

Applicants to the DMSc Bridge must meet all standard admission requirements for the SIU Doctor of Medical Science program. In addition, applicants must have **at least one of the four** qualifications provided above.

Degree Requirements

Students selected for the DMSc can begin study in either the Spring or Summer session. Those accepted will be notified prior to the selected session of entry. The curriculum consists of online courses and activities, a longitudinal practicum or education series, and a scholarly project course and project submission.
Clinical Track: DMSC 510, DMSC 520, DMSC 530, DMSC 540, DMSC 550, DMSC 560, DMSC 561, DMSC 562, DMSC 563, DMSC 571, DMSC 572, DMSC 573, DMSC 574
Education Track: DMSC 510, DMSC 520, DMSC 530, DMSC 540, DMSC 550, DMSC 560, DMSC 561, DMSC 562, DMSC 563, DMSC 581, DMSC 582, DMSC 583, DMSC 584

Curricular Guide
The course sequence will be delivered over 5 units of instruction. The general course sequencing for a summer start is:

Unit 1 (9 weeks)

DMSC 510: Organizational Behavior and Leadership (3 CH)
DMSC 560: Performance Improvement in Clinical Practice (3 CH)

Unit 2 (9 weeks)

DMSC 520: Healthcare Administration (3 CH)
DMSC 561: Scholarly Project I (1 CH)
DMSC 571: Advanced Clinical Practicum I (4 CH) -OR-
DMSC 581: PA Education Practicum I (4 CH)

Unit 3 (9 weeks)

DMSC 550: Disaster Medicine (3 CH)
DMSC 562: Scholarly Project II (1 CH)
DMSC 572: Advanced Clinical Practicum II (4 CH) -OR-
DMSC 582: PA Education Practicum II (4 CH)

Unit 4 (9 weeks)

DMSC 540: Global Health (3 CH)
DMSC 573: Advanced Clinical Practicum III (4 CH) -OR -
DMSC 583: PA Education Practicum III (4 CH)

Unit 5 (10 weeks)

DMSC 530: Healthcare Law (3 CH)
DMSC 563: Scholarly Project III (1 CH)
DMSC 574: Advanced Clinical Practicum IV (4 CH) -OR-
DMSC 584: PA Education Practicum IV (4 CH)

Doctor of Medical Science Courses

DMSC510 - Organizational Behavior and Leadership This course provides students with foundational studies in organizations and leadership practices. This course concentrates on fostering skills in the development, organization, and maintenance of effective teams. Topics will include organizational change, roles, conflict, leadership styles, and effective implementation strategies with emphasis on healthcare and educational organizations. Credit Hours: 3

DMSC520 - Healthcare Administration This course provides students with foundational studies in finance, resource allocation, and administration. The course concentrates on fostering skills in practical approaches to improving healthcare within an ethical framework and management style. Topics will include identifying and reviewing existing literature; critically examining existing programs, policies, and structures; and addressing the needs of patients, staff, board members, policymakers, and other stakeholders. Credit Hours: 3

DMSC530 - Healthcare Law This course provides students with an introduction to the study of legal and policy issues in healthcare. This course concentrates on the role of the PA within healthcare in the United States. Topics may include foundational and complex legal issues, leadership roles, and professional relationships in the healthcare system, access issues, quality of healthcare, and patient protections. Credit Hours: 3

DMSC540 - Global Health This course provides students with an introduction to global health issues. This course concentrates on key infectious diseases, determinants of health, delivery structures, and the PA role in global health strategies. Topics will include acute and chronic disease, infectious disease, maternal/child health, and the effects of poverty on health, cultural issues, as well as established international models and case studies. Credit Hours: 3

DMSC550 - Disaster Medicine This course provides students with an overview of the clinical aspects of disaster medicine. This course concentrates on the role of PAs in disaster medicine and established programs in this discipline. Topics will include health issues, epidemiology, and clinical research within disaster medicine, with emphasis on the leadership roles of PAs. Credit Hours: 3

DMSC560 - Performance Improvement in Clinical Practice This course introduces the student to key principles of evidence-based research and performance improvement. This course concentrates on scientific research and performance improvement in medical practice. Topics include research design, methodology, ethics, and critical appraisal of the medical literature, and quality performance to achieve

patient-centered clinical outcomes. During this course, students will begin to develop the proposal of their scholarly project. Credit Hours: 3

DMSC561 - Scholarly Project I In this course, students are introduced to the framework of the scholarly project. This course concentrates on evidence-based research as it applies to the scholarly project. Topics include project development, the proposal process, revisions, and submission of their scholarly project proposal. Students will work closely with their faculty advisor as they progress through this process. Approval of the project is accomplished prior to completion of this course. Emphasis of the scholarly project is on clinical practice, the PA profession, or PA education. Prerequisite: DMSC 560 with a grade of C or concurrent enrollment in DMSC 560. Credit Hours: 1

DMSC562 - Scholarly Project II In this course, students delve into the process of inquiry and literature review. This course concentrates on the application of concepts and methods from previous courses. Topics include synthesis of research, application of knowledge, and writing for future publication or presentation at professional conferences as the student develops and works on their scholarly project. Prerequisite: DMSC 561 with a grade of C or better or concurrent enrollment in DMSC 561. Credit Hours: 1

DMSC563 - Scholarly Project III In this course, students focus on the final preparation and submission of the scholarly project. This course concentrates on finalizing the project for submission to the DMSc program. Topics include the requirements in content, research, format, and relevancy of the scholarly project, as well as preparing the project for submission for publication in a professional journal or presentation at a professional conference. Final project grades are assigned by the student's faculty advisor. Prerequisite: DMSC 562 with a grade of C or better or concurrent enrollment in DMSC 562. Credit Hours: 1

DMSC571 - Advanced Clinical Practicum I This course will provide intensive clinical exposure in a chosen clinical specialty to further the student's clinical practice. Students will apply advanced and specialized medical knowledge beyond general practice. The basic mission of the SIU SOM PA Program is to graduate PA's who will be competent primary care providers, able to serve populations in medically underserved areas. Students in the Clinical Practicum course will be asked to define educational milestones related to patient encounters that involve rural or underserved populations. These clinical objectives will encourage students to gain the unique perspective related to healthcare issues of this patient population. This course will be the first in the series, with the aim to provide intensive clinical exposure in a chosen clinical specialty to further the student's clinical practice. Credit Hours: 4

DMSC572 - Advanced Clinical Practicum II This course will be the second session of the Advanced Clinical Practicum and will continue to provide intensive clinical exposure in a chosen clinical specialty to further the student's clinical practice. Students will apply advanced and specialized medical knowledge beyond general practice. Prerequisite: DMSC 571 with a grade of C or better or concurrent enrollment in DMSC 571. Credit Hours: 4

DMSC573 - Advanced Clinical Practicum III This course will be the third session of the Advanced Clinical Practicum and will continue to provide intensive clinical exposure in a chosen clinical specialty to further the student's clinical practice. Students will apply advanced and specialized medical knowledge beyond general practice. Prerequisite: DMSC 572 with a grade of C or better or concurrent enrollment in DMSC 572. Credit Hours: 4

DMSC574 - Advanced Clinical Practicum IV This course will be the fourth session of the Advanced Clinical Practicum and will continue to provide intensive clinical exposure in a chosen clinical specialty to further the student's clinical practice. Students will apply advanced and specialized medical knowledge beyond general practice. Prerequisite: DMSC 573 with a grade of C or better or concurrent enrollment in DMSC 573. Credit Hours: 4

DMSC581 - PA Education Practicum I Learning Theories and Methodology: This is first in the longitudinal PA Education Practicum, which provides opportunities for development as a faculty member and/or clinical preceptor. Fellows will explore adult learning theories, such as problem-based learning (PBL), social cognitive theory, reflective practice, and transformative learning to improve their institution's student learning outcomes through the practicum experience. Because SIU is a PBL leader in medical education, emphasis will be placed on PBL methodology, facilitator techniques, learner-centered

education, and group dynamics. Fellow will also define professional goals and begin obtaining multi-source evaluations of their Practicum work. Credit Hours: 4

DMSC582 - PA Education Practicum II Student Assessment Essentials: This course is the second of the PA Education Practicum and provides exposure in various student assessment techniques to apply in the practicum setting. These include formative and summative evaluations employing multiple modalities, such as standardized patient encounters, multiple choice exams, reflection, lab exams, demonstration, and oral examinations. Fellows will apply concepts from medical and educational literature to improve student assessment at their institution during the practicum experience. Fellows will build on knowledge from the DMS 981 Practicum course and continue multi-source evaluations of their work. Prerequisite: DMSC 581 with a grade of C or better or concurrent enrollment in DMSC 581. Credit Hours: 4

DMSC583 - PA Education Practicum III Program Evaluation: This course is the third of the PA Education Practicum and provides intensive PA educational experience with regard to program evaluation concepts in the medical education setting. Models of program assessment to be studied include the objectives-oriented approach, management and/or participant approaches, and the utilization-focused approach to apply program evaluation concepts to the practicum setting. Fellows will review accreditation standards applicable to their practicum setting, and lead a portion of the institution's continuous self-assessment process. Fellows will build on knowledge from the DMS 982 Practicum course and continue multi-source evaluations of their work. Prerequisite: DMSC 582 with a grade of C or better or concurrent enrollment in DMSC 582. Credit Hours: 4

DMSC584 - PA Education Practicum IV Professional Development and Scholarship: This course is the fourth of the PA Education Practicum series and provides experience in professional development in the area of PA medical education. Fellows will develop their teaching philosophy, define and reflect on service activities, identify program and PA profession research needs, as well as their own areas of expertise and scholarly goals. At the completion of this course, Fellows will summarize their progress toward integrated learning theories and methods, student assessment, program evaluation, as well as their own development as academicians throughout the practicum experiences. Prerequisite: DMSC 583 with a grade of C or better or concurrent enrollment in DMSC 583. Credit Hours: 4

Doctor of Medical Science Faculty

Barke, Halley, Associate Professor, Family and Community Medicine, DMSc, Southern Illinois University, 2022, MS, PA-C Physician Assistant Studies, A.T. Still University, 2012; BS Physician Assistant Studies, Southern Illinois University, 2008.

Becker, Stacey, Adjunct Professor, DMSc Southern Illinois University, 2022; MS, PA-C Arcadia University, 2003

Butler, Joshua N., Adjunct Professor, DMSc Lynchburg University, 2020; MMS, PA-C, Arcadia University, 2006; 2004.

Davenport, Gregory, Adjunct Instructor, DHSc, AT Still University, 2012; MS Physician Assistant Studies, University of Nebraska, 2008; BA Liberal Studies, Thomas Edison University, 2008.

Diemer, Donald O., Professor and Chair, Department of Physician Associated Medicine, DHSc., AT Still University, 2011; MS Physician Assistant Studies, University of Nebraska College of Medicine 1998; BS Physician Assistant Studies, University of Nebraska 1996; BS Education, Southern Illinois University 1990.

Furgason, Ashley, Adjunct Instructor, DMSc, Lynchburg University, 2019; MMS Physician Assistant Studies, 2008; BS Biological Sciences, 2005.

Kalogerinis, Peter T., Adjunct Professor, DMSc Lynchburg University, 2019; MMS, PA-C, Methodist University, 2010.

Noel, Luna, Adjunct Professor, DMSc Southern Illinois University, 2023; MMS, PA-C Nova Southeastern University, 2013; MS in Healthcare Policy and Administration Mercer University, 1998; BA University of Colorado, 1992

Ribbing, Jacob W., Assistant Professor and DMSc Program Director, DMSc, Lynchburg University, 2019; MS Physician Assistant Studies, Southern Illinois University 2016; BS Radiologic Science, Southern Illinois University 2012.

Scott, M. Kate, Associate Professor and Program Director Physician Assistant Program, DMSc, Lynchburg University, 2020; MPAS, PA-C, University of Nebraska Medical Center, 2016; 1995.

Scott, Michael D., Adjunct Professor, Juris Doctor, Loyola University Chicago School of Law, 2002; Medical Doctor, Temple University School of Medicine, 1986; BS Chemistry, Morehouse College, 1981

Sherrill, Jeffrey A., Adjunct Instructor, DMSc, Lynchburg University, 2020; MS Physician Assistant Studies, Southern Illinois University, 2012; BS Health and Human Services, Southern Illinois University, 2009.

Terrill, Rachel L., Adjunct Instructor, DMSc, Lincoln Memorial University, 2019; MS Physician Assistant Studies, Southern Illinois University, 2012; BS Biological Sciences, Southern Illinois University, 2010.

Treece, Chelsea E., Adjunct Instructor, DMSc, Lynchburg University, 2019; MS Physician Assistant Studies, Southern Illinois University, 2014; BS Biomedical Science, Southern Illinois University, 2012.

Economics

The School of Analytics, Finance, and Economics offers graduate programs in economics that lead to both master's and doctoral degrees. The master's degrees are designed to be 12-16 month programs in which the student takes courses in theory as well as an applied specialization. The doctoral program is built around a core of courses in microeconomics, macroeconomics and econometrics, and allows the student to specialize in two fields. The coursework towards the doctoral degree is expected to take three years and the writing of a dissertation one year.

Admission

The overall scholastic record and potential of the applicant for admission is more important than prior preparation in specific areas of economics. While undergraduate programs in economics are desirable, the program is open to students whose undergraduate program was in other fields, especially quantitative fields like math or statistics. However, if a student has not taken intermediate level microeconomics, macroeconomics, and statistics, remedial work may be required before the student can take the required courses for the graduate degree.

Application is done online: gradschool.siu.edu/apply/.

This program requires a nonrefundable $65 application fee that must be submitted with the application for admission to graduate study in economics. Applicants must pay this fee by credit card.

Although the Graduate Record Examination (GRE) is not officially required for admission, the economics program uses the GRE in funding decisions. Students who seek funding from the program should take the GRE exam. Information on testing dates and locations may be obtained at ets.org. Scores should be sent to Southern Illinois University Carbondale marked "Attention: School of Analytics, Finance, and Economics." All exam scores must be received before admission.

Evaluations of applicants are based on information from the application form, three letters of recommendation, transcripts, and other information.

Applicants not admitted to the graduate programs in economics who meet the Graduate School requirements may register for remedial courses as nondeclared students. Such persons may be considered for admission to the program at a later date, based on their performance in such remedial courses. This option is not available to international students.

Foreign applicants whose native language is not English must take the Test of English as a Foreign Language (TOEFL) or another equivalent test. The graduate programs in economics require that the applicant achieve a 550 paper score or a 220 computer score or an 80 Internet-based score or above for admission to the graduate program. The TOEFL must be taken no more than 24 months prior to the date for which admission is sought. For information concerning TOEFL testing dates and locations, visit ets.org.

Entry into Ph.D. in Economics Program

A student with a master's degree must meet Graduate School admission requirements with a graduate grade point average of 3.25 (*A* = 4.0) or better. A student with a bachelor's degree must meet Graduate School admission requirements with an undergraduate grade point average of 2.7 or better. After meeting these requirements the bachelor's degree student will be initially admitted as a master's in Economics student. Upon passing the qualifying exam, taken after the first year of graduate study, the student will be given entry into the doctoral program. Application for entry to the Ph.D. in Economics program should be made at the Graduate School website, gradschool.siu.edu.

Entry into the Master's Degree Program

The master's degree in Economics program is intended to serve as a terminal degree. A student with a bachelor's degree must meet Graduate School admissions requirements with a grade point average of 2.7 or better (A=4.00) on the entire last undergraduate GPA earned at the time of application. Application for entry to the master's degree in Economics program should be made at the Graduate School website, gradschool.siu.edu.

Master of Arts (M.A.) or Master of Science (M.S.) in Economics

The master's degree in Economics prepares students for positions in government and business and for teaching at the junior college level. The general requirements for the Master's degree in Economics may be conveniently classified under two broad headings, course-hour requirements and research requirements.

Course and Hour Requirements

Those students who plan to receive the Master's degree in Economics as a terminal degree are required to have the following courses:

- ECON 540A: Microeconomic Theory I
- ECON 541A: Macroeconomic Theory I

Each master's in Economics student must accumulate a minimum total of 30 graduate-level credit hours approved by the director of graduate studies. Each master's in Economics student must take at least one graduate director approved, two-course specialization. Twenty-one credit hours must be in Economics courses, excluding ECON 507.

Any student who earns six credit hours of *C* or below in Economics courses taken for graduate credit is subject to dismissal from the graduate program in economics. A minimum grade point average of 3.0 (A = 4.0) in 500-level economics courses is required, excluding ECON 501. Only 500-level courses may count toward the master's in Economics degree.

Research Requirements

Master of Arts in Economics

A **Master of Arts in Economics** degree will be awarded upon completion of a research paper and the course and hour requirements. The research paper is counted as three credit hours as ECON 598. For electronic submission requirements, please go to gradschool.siu.edu/current-students/thesis-dissertation-researchpaper/etd-overview.php. Here you will find detailed information concerning the electronic submission requirements. One copy is to be submitted to the School of Analytics, Finance, and Economics prior to graduation. Under this option, the student must take an additional graduate level course for three credit hours, as the research paper only constitutes three of the necessary 30 credit hours.

Master of Science in Economics

A **Master of Science in Economics** degree will be awarded upon completion of a master's thesis and the course and hour requirements. The thesis shall be supervised by a committee of at least three members of the graduate faculty and will be counted for six credit hours as ECON 599. (Thus the thesis constitutes six of the required 30 credit hours). The student is required to submit the thesis electronically to the Graduate School. For electronic submission requirements, please go to gradschool.siu.edu/current-students/thesis-dissertation-researchpaper/etd-overview.php. Here you will find detailed information concerning the electronic submission requirements. One copy of the thesis is to be submitted to the School of Analytics, Finance, and Economics prior to graduation.

Accelerated Master's Program

Undergraduate economics or econometrics and quantitative economics majors at SIU Carbondale can enter an accelerated master's program in which specific courses will satisfy requirements in both degrees allowing for completion of the master's degree in Economics after bachelor's degree, but at a shortened, accelerated pace. To enter this program, students apply during their junior year and must have at least a 3.25 GPA in all coursework.

Because the master's in Economics requires 30 credit hours of coursework, students in the accelerated master's in Economics program only need 21 credit hours after their senior year, thereby making it possible and likely to complete the master's in Economics degree in only one year.

Please see the Director of Graduate Studies in the School of Analytics, Finance, and Economics for more information.

Doctor of Philosophy (Ph.D.) in Economics

The Ph.D. in Economics degree prepares students for teaching and research positions in the academic world, for positions such as senior economist in private industry and consulting firms, and for government positions requiring advanced economic training.

Course Requirements and Qualifying Exam

In the student's first year (Fall/Spring) of graduate work, they will be required to take the following courses:

- ECON 540A: Microeconomic Theory I
- ECON 540B: Microeconomic Theory II
- ECON 541A: Macroeconomic Theory I
- ECON 541B: Macroeconomic Theory II
- ECON 567A: Econometrics I

At the end of the first year (June), the student will take qualifying examinations over microeconomic theory and macroeconomic theory. A student will be allowed at most two attempts at passing each qualifying exam.

Fields of Specialization

A student is required to take two specialized fields in economics. In addition, the student is required to pass a written examination (after completion of the appropriate course work for credit) in one specialized field at the end of the second year. The School of Analytics, Finance, and Economics offers the following fields of specialization: economic development, international economics, monetary theory and policy, and finance. A student will be allowed to take a field exam at most two times.

Other Required Courses

Students are required to pass the following courses:

- ECON 540C: Microeconomic Theory III
- ECON 541C: Macroeconomic Theory III
- ECON 567B: Econometrics II
- ECON 567C: Econometrics III

Dissertation

Upon successful completion of the coursework and passing of the qualifying and field examinations, a student will then be admitted to candidacy for the Ph.D. in Economics degree. This will normally occur after the third year of work. Following this, the candidate, in consultation with their dissertation chairperson, will form a dissertation committee and develop a proposal. After the proposal is approved, the student must complete a dissertation based on original research and successfully defend the dissertation before the faculty.

The student is required to submit their dissertation electronically to the Graduate School. For electronic submission of dissertations, please go to gradschool.siu.edu/thesisdissertation-research paper/etd-guidelines. Here the student will find frequently asked questions, as well as information from UMI (University Microfilm International) regarding electronic submission requirements. One copy of the dissertation is to be submitted to the School of Analytics, Finance, and Economics prior to graduation.

Differential Tuition

The College of Business and Analytics has a differential tuition surcharge of 15 percent of applicable tuition for graduate College of Business and Analytics majors. The differential tuition surcharge will be assessed at the in-state tuition rate and will be capped at 15 credit hours per semester.

Economics Courses

ECON416 - Financial Economics Study the role of money within the financial system, and the role of the financial system itself in providing risk-sharing, liquidity and information services. An examination of the bond market, interest rates and the concepts of risk, liquidity, information costs, taxation and investment maturity. A detailed examination of financial markets, e.g., the markets for stocks, foreign exchange, and market for financial derivatives. Finally, a more detailed account of why and how financial institutions and instruments evolve. This course includes a research project in which students formulate a research question, review literature related to the question, gather relevant data, and provide a research conclusion using tools learned in this and other courses. The student will communicate their research findings via a written paper and, if possible, via an oral presentation. Prerequisite: ECON 315 or 341 or consent of instructor. Credit Hours: 3

ECON429 - International Trade and Finance Analysis of the pattern and volume of world trade and capital flows; effects of trade and payments on the domestic economy; problems and methods of adjusting to change in the balance of payments. This course includes a research project in which students formulate a research question, review literature related to the question, gather relevant data, and provide a research conclusion using tools learned in this and other courses. The student will communicate their research findings via a written paper and, if possible, via an oral presentation. Prerequisite: ECON 340 and 341 or consent of instructor. Credit Hours: 3

ECON440 - Price, Output, and Allocation Theories A systematic survey of theories of product prices, wage rates, rates of production and resource utilization under conditions of competition, monopolistic competition, oligopoly and monopoly markets. Emphasis is on developing analytical tools useful in the social sciences. Not open to students who have had Economics 340. Prerequisite: ECON 240 or consent of instructor. Restrictions: College of Business and Analytics majors. Credit Hours: 3

ECON441 - Contemporary Macroeconomic Theory An examination in the causes of inflation, unemployment, and fluctuations in aggregate economic activity, factors affecting consumption and investment, and the sources of economic growth. Emphasis is on understanding contemporary United States macroeconomic problems and the options for fiscal, monetary and income policies facing the

United States government. Not open to students who have had 341. Prerequisite: ECON 241 or consent of instructor. Restrictions: College of Business and Analytics majors. Credit Hours: 3

ECON450 - History of Economic Thought An analytical study of the development of economic ideas, with special reference to historical and societal context, central thrust, and impact. Such benchmark figures as Smith, Marx, Marshall, Veblen, and Keynes are highlighted and major schools of economic thought are identified. Prerequisite: ECON 240 and 241; or 113; or consent of instructor. Credit Hours: 3

ECON463 - Introduction to Applied Econometrics Applications of statistical tools to specific economic problems. Numerous examples will be examined in order to achieve this goal. Emphasis will be given to model misspecification, non-classical estimation techniques, data analysis, and simultaneous equations. This course includes a research project in which students formulate a research question, review literature related to the question, gather relevant data, and provide a research conclusion using tools learned in this and other courses. The student will communicate their research findings via a written paper and, if possible, via an oral presentation. Prerequisite: FIN 208 with a grade of C or better. Crosslisted with BSAN 463. Credit Hours: 3

ECON465 - Mathematical Economics I A systematic survey of the fundamental mathematical tools for economic analysis. Topics include functions and their properties, including derivatives and integrals. The focus is on calculus techniques for optimization and comparative statics analysis. Prerequisite: ECON 340 or 440, and MATH 140 or consent of instructor. Credit Hours: 4

ECON474 - Economic Strategies for Business This course will be concerned with broad principles of microeconomics that underlie all business decision-making. The main topics discussed may include the firm's costs, pricing and research and development decisions under different market structures, price discrimination, strategies of different business practices, information, advertising, decision-making over time, and decision-making under symmetric information. Prerequisite: ECON 240 or its equivalent or consent of instructor. Credit Hours: 3

ECON479 - Problems in Business and Economics Application of economic theory and tools of analysis to practical business problems. Cost and demand functions, and forecasting are analyzed from a policy standpoint. Prerequisite: ECON 208 and ECON 240 or consent of instructor. Credit Hours: 3

ECON500 - Economics Seminar A study of a common, general topic in the field of economics with individual reports on special topics. Special approval needed from the instructor. Credit Hours: 3

ECON501 - Economics Readings Readings from books and periodicals in economics. Master's degree students limited to a total of six hours. Special approval needed from the instructor and chair. Credit Hours: 1-21

ECON507 - Practicum in Undergraduate Teaching Emphasizes teaching methods, source materials, and preparation of classroom materials. All teaching assistants must enroll. One hour of credit per semester. Graded S/U only. Credit Hours: 1

ECON510 - Research in Economics: Design, Methodology and Presentation Systematic approach to economic research. Includes research planning and design, exploration of the various sources of data and most frequently used methodology. The last part of the course is concentrated on techniques for communicating the results of research. Special approval needed from the instructor. Credit Hours: 2

ECON511 - Advanced Mathematical Economics A continuation of topics in 465 with more emphasis on proofs. Topics include economic applications of integration, differential equations and real analysis. Prerequisite: ECON 465 or consent of instructor. Credit Hours: 3

ECON517 - Monetary Economics I A graduate-level introduction to the field of monetary economics. Students will focus on the core theoretical models to describe and explain the role of money in modern economies. The course emphasizes empirical methods in macroeconomics and reviews current empirical research and evidence on the channels through which money influences economic activity. Students will relate monetary variables to the rates of interest, inflation and unemployment, to deficits and the national debt, and to savings, investment, and output. Prerequisite: ECON 541A or B and 463 or equivalent. Credit Hours: 3

ECON518 - Monetary Economics II An advanced graduate-level course in monetary economics. Students will use contemporary macroeconomic models to analyze monetary policy. The course emphasizes macroeconomic theory and the role of underlying frictions in monetary economies. Students will focus on recent developments and controversies in monetary theory and policy as well as on optimal monetary policy under discretion or commitment, monetary policy operating procedures, and the interaction of monetary and fiscal policy. Prerequisite: ECON 541B and 517. Credit Hours: 3

ECON520A - Development Theory and Policy The two parts deal with the macroeconomic and microeconomic aspects of development economics, respectively. 520A topics include theories of development, structural change, income inequality, natural resources, open economy shocks, and the political economy of development. Credit Hours: 3

ECON520B - Economic Development Theory and Policy The two parts deal with the macroeconomic and microeconomic aspects of development economics, respectively. 520B topics include theories and case studies of famine and famine prevention, gender and development, economics of child labor, and informal credit markets and microfinance. Prerequisite: ECON 465 and ECON 540A or their equivalent or consent of instructor. Credit Hours: 3

ECON530 - Foreign Trade This course covers the determinants of the pattern of trade and possible gains from trade, under both perfect and imperfect competition. It also examines trade policy issues such as optimal tariffs and the relative merits of alternative trade policies. A number of specific topics are also covered, for example: foreign direct investment, trade and the environment, and fair trade. Prerequisite: ECON 465 and ECON 540A or their equivalent or consent of instructor. Credit Hours: 3

ECON531 - International Finance Application of theory to current international economic transactions. Emphasis is placed on topics at the frontier of research in international macroeconomics, with empirical studies. Prerequisite: ECON 465 and ECON 541A or consent of instructor. Credit Hours: 3

ECON533 - Public Finance Theory and Practice Historical development of public finance theories with analysis of their policy implications. Prerequisite: ECON 330 or consent of instructor. Credit Hours: 3

ECON534 - Economics of Taxation This course examines from a theoretical and applied point-of-view, various economic aspects of taxation. Other government revenue sources may also be analyzed such as inter-governmental grants and debt. Emphasis is on application of microeconomic theory to problems in taxation. Usual topics include: equity in taxation, shifting and incidence of taxes, excess burden of taxes, other economic effects of taxes, tax reform, debt. Prerequisite: ECON 330 and ECON 340, or ECON 440, or consent of instructor. Credit Hours: 3

ECON540A - Microeconomic Theory I The course provides the basic theoretical knowledge necessary for microeconomic research in business and government. Prerequisite: ECON 340 or ECON 440 or consent of instructor AND MATH 150 or its equivalent or consent from the Director of Graduate Studies in the Economics Department. Credit Hours: 3

ECON540B - Microeconomic Theory II A contemporary course in partial equilibrium analysis. Topics include the theory of the firm, market structure and the theory of the consumer. The course frequently takes an axiomatic approach; consequently there are many formal statements and proofs of theorems. Prerequisite: ECON 465 and ECON 540A or consent of instructor. Credit Hours: 3

ECON540C - Microeconomic Theory III A contemporary course in game theory as applied to economics. Topics include static games of complete and incomplete information with applications to Cournot oligopoly, tragedy of the commons, and auctions; as well as dynamic games of complete and incomplete information with applications to Stackelberg oligopoly, sequential bargaining, imperfect international competition, and job market signaling. Prerequisites: ECON 540A and ECON 540B or consent of instructor. Credit Hours: 3

ECON541A - Macroeconomic Theory I The rigorous development of general equilibrium macroeconomic models to analyze the determination of national income in the context of Classical, Keynesian, Neoclassical and Monetarist economic systems. Also included is the study of key sectoral demand functions. Prerequisite: ECON 340 or ECON 440 or consent of instructor AND MATH 150 or its

equivalent or consent from the Director of Graduate Studies in the Economics Department. Credit Hours: 3

ECON541B - Macroeconomic Theory II Continuation of 541A. Analyzes the ideas of New Classical and New Keynesians on the determination of national income. Focuses on the impact of rational expectations and the natural rate hypotheses on the effectiveness of macroeconomic policy. Also included are recent developments in the area of business cycles. Prerequisite: ECON 541A. Credit Hours: 3

ECON541C - Macroeconomic Theory III Recent developments and major issues in contemporary macroeconomic theory. Focuses on incorporating uncertainty, stochastic tools and dynamic analysis into macroeconomic theory. Prerequisite: ECON 541B. Credit Hours: 3

ECON542A - Industrial Organization I A study of the variety of forms of competition among firms. Topics include theories of the firm, oligopoly theory, theories of entry, product differentiation and innovation. Prerequisite: ECON 440 and ECON 441. Credit Hours: 3

ECON542B - Industrial Organization II A survey of government policy toward industry. Topics include antitrust: mergers, concentration and unfair trade practices, regulation of public utilities, peak load pricing, product, safety and environmental regulation. Prerequisite: ECON 440 and ECON 441. Credit Hours: 3

ECON545 - Resource Economics A survey of theoretical and institutional aspects of energy production, distribution, consumption and regulation. Topics covered include cartel theory, history of energy use, theory of resource exhaustion, models of energy demand and supply, past and current policy issues, and environmental protection. Prerequisite: ECON 440 or consent of instructor. Credit Hours: 3

ECON566 - Mathematical Economics II Linear economic models. Linear programming. Input-output analysis and general equilibrium models Prerequisite: ECON 340 or ECON 440 or ECON 465 or consent of instructor. Credit Hours: 3

ECON567A - Econometrics I This is a course in modern mathematical statistics applied to economics and allied fields. Students will use calculus and linear algebra to apply probability and statistical models to data, via parameter estimation and hypothesis testing. Key topics include probability models, features of probability distributions, sampling distributions, estimation via maximum likelihood, inference via likelihood ratio, score and Wald tests; and asymptotic theory. Applications center on the simple linear regression model and its variants, and students will apply models to data using econometric software. Prerequisite: ECON 465 or consent of instructor. Credit Hours: 3

ECON567B - Econometrics II Further topics in the theory and application of single equation econometric models including model specification, data problems, large sample results, non-spherical disturbances, heteroscedasticity and autocorrelation. Topics in time series analysis include unit root tests and ARIMA model building. Prerequisite: ECON 465 and ECON 567A or consent of instructor. Credit Hours: 3

ECON567C - Econometrics III Topics covered are systems of regression equations; models for panel data; simultaneous equations models; time series models; VAR; causality, cointegration, error correction model among others; and estimation and inference in models with discrete and limited dependent variables, i.e., Probit and Logit models, censored regression models and Tobit analysis. Prerequisite: ECON 567B or consent of instructor. Credit Hours: 3

ECON570 - Seminar in Contemporary Microeconomic Theory An investigation of recent developments and current controversies in economic theory with emphasis on microeconomic problems. Prerequisite: ECON 540B. Credit Hours: 3

ECON571 - Seminar in Contemporary Macroeconomic Theory An investigation of recent developments and current controversies in economic theory with emphasis on macroeconomic problems. Prerequisite: ECON 541B or consent of instructor. Credit Hours: 3

ECON575A - Econometric Theory I Topics include: probability theory; asymptotic theory; linear regression; likelihood ratio, Lagrange multiplier, and Wald tests; stochastic processes; ARIMA models; unit root tests, cointegration, spurious regression, and spurious trend; ARCH models; VAR models; and other topics to be determined by the instructor. Prerequisite: ECON 567B or consent of instructor. Credit Hours: 3

ECON575B - Econometric Theory II Topics include: density estimation methods, nonparametric regression, stochastic frontiers, nonlinear regression models, nonlinear time series models, information matrix tests, generalized method of moments, non-nested hypothesis testing, Bayesian methods, bootstrapping, and other topics to be determined by the instructor. Prerequisite: ECON 575A or consent of instructor. Credit Hours: 3

ECON598 - Research Paper Preparation of a research paper for a Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

ECON599 - Thesis Minimum of four hours to be counted toward a Master's degree. Graded S/U only. Credit Hours: 1-6

ECON600 - Doctoral Dissertation Hours and credit to be arranged by director of graduate studies. Graded S/U only. Credit Hours: 1-16

ECON601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

ECON699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted Credit Hours: 1

Economics Faculty

Becsi, Zsolt, Associate Professor, Ph.D., University of Wisconsin-Madison, 1991; 2003. Public finance, macroeconomics.

Dai, Chifeng, Associate Professor, Ph.D., University of Florida, 2003; 2005. Industrial organization, public economics, law and economics, and applied econometrics.

Gilbert, Scott, Associate Professor, Ph.D., University of California-San Diego, 1996; 1999. Econometrics, applied macroeconomics.

Kebede, Hundanol, Assistant Professor, Ph.D., University of Virginia, 2020; 2021. International economics, development economics.

Morshed, A.K.M. Mahbub, Professor, Ph.D., University of Washington, 2001; 2004. Macroeconomic theory, international economics, economic growth.

Pitafi, Basharat, Lecturer, Economics, Ph.D., University of Hawaii, 2004; 2024. Resource Economics and Public Economics.

Sylwester, Kevin, Professor and Director, School of Analytics, Finance, and Economics, Ph.D. University of Wisconsin-Madison, 1997; 1998. Macroeconomics, data analytics.

Watts, Alison, Professor, Ph.D., Duke University, 1993; 2001. Microeconomics, game theory, industrial organization, law and economics.

Emeriti Faculty

Färe, Rolf, Professor, Emeritus, Docent, University of Lund, Sweden, 1976; 1978.

Grabowski, Richard, Professor, Emeritus, Ph.D., University of Utah, 1977; 1979.

Lahiri, Sajal, Professor and Vandeveer Chair of Economics, Emeritus, Ph.D., Indian Statistical Institute, 1976; 2002.

Mitchell, Thomas M., Associate Professor, Emeritus, Ph.D., Brown University, 1984; 1983.

Myers, John G., Professor, Emeritus, Ph.D., Columbia University, 1961; 1977.

Primont, Daniel, Professor, Emeritus, Ph.D., University of California, Santa Barbara, 1970; 1978.

Sharma, Subhash C., Professor, Emeritus, Ph.D., University of Kentucky, 1983; 1983.

Educational Administration

The School of Education offers a master's and two doctoral degrees in Educational Administration as well as two CAEP-accredited endorsements. Students seeking these degrees and endorsements often pursue careers as superintendents, principals, or other administrative positions, including directors of special education or vocational education.

Endorsement Programs

The School of Education offers two State of Illinois Professional Educator License (PEL) Administrative Endorsements: the principalship and the superintendency. To earn the principalship endorsement, a student must have a master's degree and four years of school teaching (or its equivalent). To earn the superintendent endorsement, students must have a master's degree, plus two years of administrative experience working as a principal. These two School of Education endorsement programs are offered in conjunction with programs in *Curriculum and Instruction* and *Special Education*.

Students must make applications for the administrative endorsement program through the School of Education. These programs require a nonrefundable $65 fee that must be paid by credit card and submitted with the application. Interested applicants should direct inquiries to the School of Education, Educational Administration programs (SOEGradPrograms@siu.edu).

Master's Degree

Upon admission to pursue a M.S.Ed. in Educational Administration degree and/or endorsement offered by the School of Education, the program will expect students to maintain adequate academic standing (see below). To maintain this status, each student must enroll in, complete, and pass courses, internships, exams, and other requirements that lead to the completion of their specified academic program. As specified by the Graduate School, each student will have six calendar years, from the date of initial enrollment, to complete all of the requirements for their specified academic program for the Master's Degree. (Refer to the Degree Requirements section of the Graduate Catalog for more information.)

Graduate Credit From Post-Master's Courses

The School of Education will accept selected post-master's degree graduate credit hours earned by students prior to acceptance into the Ph.D. and Ed.D. in Educational Administration programs. Credit will not be accepted for Independent Readings, Independent Studies, or Internship courses. EAHE will accept up to the maximum of credit hours allowed by the Graduate School at SIUC.

Master of Science in Education (M.S.Ed.) in Educational Administration

The Master of Science in Education (M.S.Ed.) in Educational Administration is a cohort program, with admissions once a year. This program leads to an Illinois Principal Endorsement. Contact the School for application deadline and cohort start date information. The program includes a 36-credit hour core consisting of:

- EAHE 501 Vision and Planning for School Improvement
- EAHE 503 Building Collaborative Structures and Systems of Professional Practice
- EAHE 504 School Leadership through Personnel Administration and Evaluation
- EAHE 509 School Community Relations and District Policy
- EAHE 511 Leading Curriculum and Assessment
- EAHE 519 School Law and Educational Policy
- EAHE 521 Leadership for Equity - Special Populations
- EAHE 523 Effective Management and Operations: Finance, Facilities, Technology & Grants
- EAHE 538 Education, Policy, and Social Forces
- EAHE 548 Developing Professionals and the Inquiry of Professional Practice

- EAHE 595 Principal Internship (6 credit hours)

M.S.Ed. Educational Administration / J.D. in Law

A concurrent degree in educational administration and law is designed to enhance students' knowledge of the increasingly litigious areas of education law. Specifically, the program is designed to educate practitioners in law and educational administration to effectively utilize the problem-solving strategies and techniques of both disciplines. Students prepared in this program will develop an understanding of the ethics, language, research, history, and processes of both professions. Individuals so trained will be uniquely prepared for careers that combine both legal and educational needs, such as K-12 administration, public policy leadership roles, and student or employee advocacy. In addition, strengthening the academic training of lawyers and school administrators will enhance the quality of research performed in both disciplines, as well as enhance the quality of publications in both fields of study. Students with this joint degree will be uniquely prepared to address the myriad of problems in our society that present complex legal and educational issues. Students who complete this program will have enhanced educational and professional opportunities both inside and outside academia. Students must meet the requirements of admission and be admitted separately to the M.S.Ed. in Educational Administration program and the School of Law. Students currently enrolled in the educational administration or law programs must have a minimum GPA before they may enroll in the concurrent program. The minimum GPA for educational administration is 3.0 and for law is 2.5. M.S.Ed. in Educational Administration students interested in this program should consult with the Educational Administration Graduate Program Director.

Doctoral Programs

The School of Education offers two doctoral programs in Educational Administration: The Ph.D. and the Ed.D.The program will expect students to maintain adequate academic standing for the duration of their program. To establish and maintain this status, each doctoral student must enroll in, complete, and pass courses, internships, program of study, exams, research elements, and other requirements that lead to the completion of their degree.

All doctoral degree requirements must be completed within 10 calendar years from the time of initial enrollment in the program.

Doctor of Education (Ed.D.) in Educational Administration

The Ed.D. in Educational Administration offers three concentrations: School Leadership (P-12), Higher Education (with two tracks), and Teacher Leadership. This practice-based degree prepares educational leaders for a variety of administrative roles in public and private schools, educational agencies, and college or university settings with the goals of guiding the effective management and leadership of educational institutions. These goals aim to improve both the learning environment and organizational efficiency to improve outcomes for students, schools, institutions, communities, and society. Current and prospective students should contact program faculty members for information on courses, sequences, and other requirements. Generally, the Ed.D. can be completed within three years. (See below for requirements for each concentration.)

Admission

To gain admission to the Ed.D. program, prospective students must hold a Master's degree, a minimum 3.0/4.0 GPA for graduate level coursework, and at least 3 years of professional experience in an educational setting. Applications for admission must include the following: a completed application, three letters of reference attesting to the applicant's potential for success, and a writing sample. Program faculty members will review applications and select students for admission to the Ed.D. program.

Doctoral Program Committee

Each doctoral student must form a doctoral committee approved by the Graduate School. This committee will consist of at least five graduate faculty members: three members within the student's program, one member from within the School of Education in a graduate program outside the student's academic discipline, and one member (external) must not hold a primary appointment in the School of Education.

A primary task of the committee is development of the program of study, which is created in conjunction with the doctoral committee and approved by the Dean of the School of Education.

Preliminary Exam

Preliminary examinations will cover content and knowledge germane to the student's concentration as determined by the doctoral committee. They must submit an application requesting to take preliminary examinations, which are offered three times a year (fall, spring, summer). Students must meet the following requirements before they are permitted to take the exams:

1. Have an approved Program of Study on file in the Dean's Office,
2. Be at or near the completion of all coursework for their Ed.D. program with a grade of C or better in each course and a 3.25 grade point average overall,
3. Finish all incomplete courses and,
4. Completed preliminary examination application form (with signed consent of their advisor).

A student who fails the preliminary examination on the first attempt will have up to two additional opportunities to take and successfully pass the examination. If a student fails to successfully complete all parts of the preliminary examination, the School will dismiss the student from the program.

Advancement to Candidacy

A doctoral student may be "advanced to candidacy" after completing their course work as required as part of their approved Program of Study, fulfilling the residency requirements established by the Graduate School, and after passing all elements of the Preliminary Examination. The student's faculty advisor must complete the advance to candidacy forms and forward them to the Dean of the School of Education. Note that the Graduate School will not confer the doctoral degree less than six months after admission to candidacy.

Capstone Project

The Capstone Project is the culminating project, conducted under the direction and supervision of the student's capstone supervisor, and must demonstrate scholarly rigor at the doctoral level. Students select a topic area and project approach for completing the capstone requirement. All capstones must include data collection and analysis. The student must enroll in 12 credit hours of EAHE 600B during the capstone phase.

The following specifies the coursework requirements for each of the concentrations in the Doctor of Education in Educational Administration degree.

Ed.D. in Educational Administration: School Leadership Concentration

Professional Core (12 credit hours)
ERES 501 Introduction to Education Research Methods
EAHE 502 Administrative Leadership and Practice
EAHE 544 Education and Culture
EAHE 551 Policy and Politics in American Education Systems

School Leadership Core (12 credit hours)
EAHE 520 Current Issues in Educational Administration
ERES 531 Implementation & Assessment of Program Evaluation
EAHE 555 Leadership and Change in Education Organizations
EAHE 564 Seminar in Ethics and Social Justice in Education
Internship (3 credit hours)
EAHE 597 Superintendent Internship

Research Core (12 credit hours)
ERES 510: Action Research
ERES 520: Introduction to Quantitative Research in Education OR
ERES 540: Introduction to Qualitative Research
ERES 589 Doctoral Research Seminar
Electives (3 credit hours)

Capstone Project (12 credit hours)
EAHE 600B Capstone

Total requirements: 54 credit hours (includes 12 credit hours of capstone work)

Ed.D. in Educational Administration: Teacher Leadership Concentration

Professional Core (12 credit hours)
ERES 501 Introduction to Education Research Methods
EAHE 502 Administrative Leadership and Practice (introduction course to the Ed.D. program)
EAHE 544 Education and Culture
EAHE 551 Policy and Politics in American Education Systems

Teacher Leadership Core (12 credit hours)
CI 508 Systematic Observation and Analysis of Instruction
CI 536 Partnerships/Mentoring the New Professional
CI 575 Critical Issues in Instructional Supervision
CI 576 Critical Issues in Teacher Education
Electives (6 credit hours)

Internship (3 credit hours)
CI 595T Teacher Education Internship

Research Core (9 credit hours)
ERES 510: Action Research
ERES 520: Introduction to Quantitative Research in Education, OR
ERES 540: Introduction to Qualitative Research
ERES 589 Doctoral Research Seminar
Capstone Project (12 credit hours)
EAHE 600B Capstone

Total requirements: 54 credit hours (includes 12 credit hours of capstone work)

Ed.D. in Educational Administration: Higher Education Concentration (2 Tracks)

Track 1: Traditional Program

Professional Core (12 credit hours)
EAHE 502 Administrative Leadership and Practice (introduction course to the Ed.D. program)
EAHE 544 Education and Culture
EAHE 551 Policy and Politics in American Education Systems
EDUC 510, 511, or 512 - Professional Seminar (choose one)

Higher Education Core (12 credit hours)
EAHE 520 Current Issues in Educational Administration
ERES 530 Program Development & Evaluation
EAHE 555 Leadership and Change in Education Organizations
EAHE 564 Seminar in Ethics and Social Justice in Education

Internship (3 credit hours)
EAHE 598 Higher Education Internship

Electives (3 credit hours)

Research (12 credit hours)
ERES 589 Doctoral Research Seminar
ERES 520: Introduction to Quantitative Research in Education OR
ERES 540: Introduction to Qualitative Research

Capstone Project (12 credit hours)
EAHE 600B Capstone

Total requirements: 54 credit hours (includes 12 credit hours of capstone work)

Track 2: Executive

Professional Core (18 credit hours)
EAHE 502: Administrative Leadership and Practice
EAHE 544: Education and Culture
EAHE 551: Policy and Politics in American Education Systems
EAHE 555: Leadership and Change in Education Organizations
ERES 531: Implementation and Assessment of Program Evaluation
EDUC 510, 511, or 512: Professional Seminar (choose one)

Higher Education Leadership Courses (21 credit hours)
EAHE 510: Higher Education in the United States

EAHE 515: Student Affairs Administration
EAHE 525: Equity and Diversity in Higher Education
EAHE 526: The Community College
EAHE 528: Finance in Higher Education
EAHE 546: Co-Curricular Assessment
EAHE 535B: Higher Education Seminar I (3 hours)

Internship (3 credit hours)
EAHE 598: Higher Education Internship

Research (12 credit hours)
ERES 501: Introduction to Education Research Methods
ERES 520: Introduction to Quantitative Research in Education
ERES 540: Introduction to Qualitative Research
ERES 589: Doctoral Research Seminar

Capstone Project (12 credit hours)
EAHE 600B: Capstone

Total Requirements: 54 credit hours (*plus* 12 credit hours of dissertation work)

Written Appeals

Any student enrolled in a program may author a written appeal regarding their academic standing. Written appeals should include the following:

- Your name (according to University records), DAWG tag #, and current contact information (postal address, phone, and email).
- An outline detailing why the School should allow you to remain an active student in your specified program.
- A description of the difficulties or any extraordinary circumstances that have inhibited your progress toward completing your degree or endorsement.
- A specific timeline of strategies and plans that you will use to make satisfactory progress toward program completion from this point forward.
- Identification of and established communication with a current EAHE faculty member who has agreed to serve as your adviser and will assist you in completing your program.

Upon receipt of notification that the program deems the student's academic standing to be either Inadequate or Delinquent, the student will have 45 calendar days to provide a written appeal to the program. If a student chooses not to author a written appeal regarding their academic standing, then the original determination issued by the program will remain and the program will inform the Graduate

School of the student's status, which may result in dismissal from the specified program and the Graduate School. Students who disagree with the final decision issued by the program must refer to the Graduate Student Academic Grievance Policy established by the Graduate School. (Refer to the Academic Grievances Policy/Procedures section of the Graduate Catalog for more information.)

Educational Administration Courses

EAHE402 - Principles of Student Personnel Group Work Acquaints the student with group work possibilities and functions in higher education. Credit Hours: 1-3

EAHE470 - College Student Sexuality (Same as WGSS 470) Seminar designed to provide students with a strong grounding in the field of college student sexuality and sexual identity, covering the lived experiences of U.S. college students, the construction of sexualized collegiate identities through U.S. history, and how institutions of higher education have attempted to regulate, control, and (intentionally as well as inadvertently) effect college student sexuality. Credit Hours: 3

EAHE501 - Vision and Planning for School Improvement In this graduate level course, school professionals will be introduced to the role and functions of the school principal as defined in federal, state, and local statutes. It will also address the variations of that role based on school level (Pre-K, elementary, middle, and high school). Professionals will be able to define and conceptualize what it

means to be an instructional leader and the notion of distributed leadership. Professionals will gain an understanding of the needs of all students (ELL/bilingual; special needs, other). Professionals will understand how literacy and numeracy instruction impacts student learning and how student performance data informs the school vision and plans for school improvement. Credit Hours: 3

EAHE502 - Administrative Leadership and Practice This course provides an introduction to key concepts, issues, and proficiencies relevant to doctoral study. This course concentrates on fostering skills and competencies that help educators develop into practitioner-scholars. Topic areas will include cultivating systemic knowledge and perspectives; identifying and reviewing existing literature; critically examining educational programs, policies, and structures; connecting research and theory to administrative practice; and recognizing and working to address the needs of students, faculty, staff, board members, policymakers, and other stakeholders. Credit Hours: 3

EAHE503 - Building Collaborative Structures and Systems of Professional Practice In this graduate level course, school professionals will focus on structures that allow engagement between educators on issues of practice (i.e., professional learning communities, communities of practice) as a means for leaders to support the development of organizational goals, group and individual student, parent involvement, professional teaching/learning, and school success. School professionals will learn to track cohort data to determine the successes of groups and subgroups as a means to determine whether or not school culture is unified and cohesive. School professionals will apply theory to practice as they engage in decision-making activities involving school-wide change processes and monitoring effective instruction, expanding upon their awareness of the 2013 Illinois Professional Teaching Standards that foster a culture of student learning. Credit Hours: 3

EAHE504 - School Leadership Through Personnel Administration and Evaluation In this graduate level course, school professionals will acquire knowledge and skills to become qualified evaluators of licensed teachers. School professionals will learn to collaborate using observation and conversation to provide feedback to change teaching practices. Techniques to collect, analyze, and accurately document objective data will be learned and practiced with the goal to acquire the skills to rate the professional/ instructional performance of teachers and other licensed school personnel. Restrictions: Admitted to a PK-12 graduate program in COEHS. Credit Hours: 3

EAHE505 - The Administration and Supervision of the Middle School Reviews the philosophy of the middle school concept and emphasizes the role of the principal in the areas of management, supervision of human resources, program development, the direction of students and the concern for ethical standards of operation. Credit Hours: 3

EAHE506 - The Administration and Supervision of the Secondary School Deals with problems met specifically by the high school principal. Emphasizes the principal's role in relation to guidance, curriculum, schedule-making, extra-curricular activities, public relations, budgeting of time, etc. Credit Hours: 3

EAHE508 - Student Development Theory A study of the major theories of human development as applied to college students with implications for the student affairs specialist. Restricted to students admitted to master's degree or certificate in higher education, or consent of instructor. Credit Hours: 3

EAHE509 - School Community Relations and District Policy In this graduate level course, school professionals will learn to achieve the school's vision and obtain support for school improvement through effectively communicating and collaborating with the central office, faculty and staff, school families, and community members. School professionals will define community in terms of diversity, develop plans to build a cohesive school community, connect research with the professional context, engage in effective decision-making practices, and communicate results to constituents using appropriate written and verbal formats. Credit Hours: 3

EAHE510 - Higher Education in the United States An overview of American higher education in historical and sociological perspectives: its development, scope, characteristics, issues, problems, trends and criticism. Restricted to students admitted to master's degree or certificate in higher education, or consent of instructor. Credit Hours: 3

EAHE511 - Leading Curriculum and Assessment In this graduate level course, school professionals will learn to promote a shared vision of the elements of school and curriculum that make higher

achievement possible, setting high expectations for all students to learn high-level content. Through this course, the school professional establishes effective curriculum delivery systems and utilizes leadership and facilitation skills to effectively manage curricular change. Additionally, the school professional promotes the success for all students by using data to initiate and continue improvement in school and classroom practices and increased student achievement. The school professional will accomplish these course goals by acquiring an understanding of the use of rigorous formative, interim, and summative assessments. Credit Hours: 3

EAHE513 - Organization and Administration in Higher Education Theories and practices in governance of various types of higher education institutions with attention to problems of formal and informal structures, personnel policies, decision making, institutional self-study and societal-governmental relations. Restricted to students admitted to master's degree or certificate in higher education, or consent of instructor. Credit Hours: 3

EAHE514 - Case Studies in Higher Education This course is designed to allow graduate students studying to be administrators in higher education practice at analyzing problems and issues in postsecondary education, as well as problems and issues facing college students. Extended, semester-long case studies are utilized. Prerequisite: EAHE 508 or consent of instructor. Credit Hours: 3

EAHE515 - Student Affairs Administration Study of organization, functions, and under girding principles and policies of student development and the related student personnel services and programs in contemporary colleges and universities including community colleges. Restricted to students admitted to master's degree or certificate in higher education or consent of instructor. Credit Hours: 3

EAHE516 - College Students and College Culture Study of the nature of students, the impact of the college on student development, and the nature of the college as a unique social institution. Study of student subcultures and the interaction between students, institutions, and communities. Restricted to students admitted to master's degree or certificate in higher education, or consent of instructor. Credit Hours: 3

EAHE517 - The Legal Framework of Education A study of administrative, judicial, statutory and constitutional laws which have application in American public schools. Credit Hours: 3

EAHE518 - College Teaching Emphasis is given to teaching and learning styles, the teaching-learning process, specific methods of teaching, strategies to improve teaching, resources available to the classroom teacher, and methods of evaluating teaching. Other topics will include: models of effective teaching behavior, academic freedom and due process. Course also open to teaching assistants from other departments. Credit Hours: 3

EAHE519 - School Law and Educational Policy In this graduate level course, school principal candidates will become acquainted with fundamental legal issues that impact P-12 schools. The candidates will acquire knowledge to understand, respond to, and influence the larger political, legal, social, economic, and cultural context while making ethical decisions, promoting democratic values and building equitable and just learning communities. Credit Hours: 3

EAHE520 - Current Issues in Educational Administration An examination of current issues that affect the various administrative levels in educational systems. The issue(s) selected receives intensive treatment and review. This class is offered specifically for those seeking the superintendent's endorsement. Credit Hours: 1-6

EAHE521 - Leadership for Equity: Special Populations In this graduate level course, school professionals will learn the role of educational leadership in promoting and supporting educational equity as a critical dimension of democracy, social justice, and related legal aspects. They will consider the moral/ethical, contextual, communal, dialogic, and transformative dimensions of school leadership that support the development of an equitable school environment, with particular emphasis on special programming for students with disabilities, economically disadvantaged, homeless, gifted, early childhood, English-language learners, and racial/ethnic minority students. Credit Hours: 3

EAHE523 - Effective Management and Operations: Finance, Facilities, Technology & Grants In this graduate level course, school professionals will acquire skills for successful school management of finances, facilities, technology and grants. The course covers vital aspects of managing fiscal, human,

and material resources that facilitate student learning, safety and support curriculum and instruction. Restricted to admission to a PK-12 graduate program in COEHS. Credit Hours: 3

EAHE524 - Curriculum Design and Policy A study of assumptions, materials, methods and evaluation in the designs of various curricula in colleges and universities, with attention to curriculum resources and policy. Credit Hours: 3

EAHE525 - Equity and Diversity in Higher Education This course is designed to educate students in two ways: by broadening understanding and deepening readings into diverse higher education populations and issues, and by applying those understandings and readings to their practices as postsecondary administrators and educators. Credit Hours: 3

EAHE526 - The Community College A study of the characteristics and functions of the community or junior college in American higher education. Course content aids the student in developing a general understanding of the philosophy, objectives, organization, and operations of this significant institution. Credit Hours: 3

EAHE528 - Finance in Higher Education A study of financing higher education in American society and related economic aspects. Emphasis is given to sources of funds and management of financing in colleges and universities including budgeting, control, accountability and current trends. Restricted to students admitted to master's degree or certificate in higher education, or consent of instructor. Credit Hours: 3

EAHE532 - Accounting and Budgeting in School Operations This course provides candidates with a foundation in accounting and budgeting as relates to K-12 school operations and management. Topics covered will include budgeting, payroll administration, bonded indebtedness, accounting for receipts and expenditures, extracurricular funding, analysis of statements, financial issues related to auxiliary enterprises, and other principles of accounting as related to school operations. This course is specifically for candidates seeking to complete the Chief School Business Official Endorsement. Credit Hours: 3

EAHE534 - School Fiscal Management and Planning This course provides candidates with a foundation in accounting and budgeting as relates to K-12 school operations and management. Applications addressed in this course will include: data processing systems to school fund accounting, payroll, inventories, curriculum, personnel, registration procedures, budget, textbook accounting, and other business office functions. This course is specifically for candidates seeking to complete the Chief School Business Official Endorsement. Prerequisite: EAHE 532 or consent of the instructor. Credit Hours: 3

EAHE535A - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Student organization and activities advising. Credit Hours: 1-3

EAHE535B - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Law and higher education. Credit Hours: 1-3

EAHE535C - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Student financial assistance. Credit Hours: 1-3

EAHE535D - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Admissions and records. Credit Hours: 1-3

EAHE535E - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Academic and faculty administration. Credit Hours: 1-3

EAHE535F - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Current issues in student affairs. Credit Hours: 1-3

EAHE535G - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Housing administration. Credit Hours: 1-3

EAHE535H - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Non-traditional students. Credit Hours: 1-3

EAHE535I - Higher Education Seminar I (Same as WGSS 535) A series of seminars for specialized study of areas of administrative practice and policy. Gender in higher education. Credit Hours: 1-3

EAHE535J - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Student union administration. Credit Hours: 1-3

EAHE535K - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Special topics. Credit Hours: 1-3

EAHE535S - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Special Topics. Credit Hours: 1-6

EAHE536 - History of Education in the United States An historical study of the problems of American education. Credit Hours: 3

EAHE537 - The Adult Learner The focus of study will be adult learners, their motivations, learning styles, needs, goals, life stages, life cycles and developmental patterns. Implications for adult learning will be sought. Credit Hours: 3

EAHE538 - Education, Policy, and Social Forces In this graduate level course, students will examine the foundations of educational policy and practice. Students will develop the ability to critically analyze historical and contemporary issues in American education by exploring the social, political, economic, and cultural context of education. Students will be able to evaluate educational policies and practices in light of various assumptions, ideals, and values about public education. This knowledge will enable educators to understand the broader social and political forces that shape their educational community (i.e., students, faculty, and staff) and their roles as educational leaders. Credit Hours: 3

EAHE542 - Contrasting Philosophies of Education An examination of current educational problems and trends in the light of contrasting philosophies of education. Credit Hours: 3

EAHE543 - Collective Bargaining An investigation of theory as related to collective bargaining and professional negotiations. Course will emphasize various approaches to collective bargaining and the roles included in those processes. Course will also use cases and simulations to illustrate examples of collective bargaining processes. Credit Hours: 3

EAHE544 - Education and Culture A study of the concept of culture and its relation to the process of education. Credit Hours: 3

EAHE545A - Higher Education Seminar II-Community College Administration A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-3

EAHE545B - Higher Education Seminar II-Federal Initiatives in Higher Education A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-3

EAHE545C - Higher Education Seminar II-Institutional Policy Research A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-3

EAHE545D - Higher Education Seminar II-Current Issues in Higher Education A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-3

EAHE545E - Higher Education Seminar II-Higher Education Administration A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-3

EAHE545F - Higher Education Seminar II-Institutional Finance and Administration A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-3

EAHE545G - Higher Education Seminar II-History of Higher Education A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-3

EAHE545H - Higher Education Seminar II-Sociology of Higher Education A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-3

EAHE545J - Higher Education Seminar II-Adult and Continuing Education A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-3

EAHE545S - Higher Education Seminar II-Selected Topics A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-8

EAHE546 - Co-Curricular Assessment The purpose of this class is to develop an understanding of assessment practices as applied to the out-of-class experiences of college students. Throughout this course, students will become familiar with concepts and approaches used to assess various areas within student affairs. Credit Hours: 3

EAHE547 - Evaluating Educational Research The goal of this course is to develop student skills as consumers of research in education. Standards and practices in multiple traditions of educational research are reviewed in order to help students critically read, assess, and evaluate research. Restricted to master's degree and certificate in higher education, or consent of instructor. Credit Hours: 3

EAHE548 - Developing Professionals and the Inquiry of Professional Practice In this graduate level course, school professionals learn to critically read, evaluate and apply educational research so that they can engage their school systems in continuous inquiry to positively affect student achievement. School professionals will develop an action research project proposal designed to appropriately address a building-level issue. Students will learn to lead action research through the development of sound research design. Credit Hours: 3

EAHE550 - School Business Administration A study of the principles and practices governing management of business affairs of a public school system. Included are such topics as revenues, expenditures, accounting, auditing, reporting and applications of electronic data processing as a management tool. Practical experience is given in using the Illinois financial accounting manual as well as other managerial procedures. Detailed study is made of the role of the school business administrator in the local school district. Credit Hours: 3

EAHE551 - Policy and Politics in American Education Systems An examination of the political setting of educational administration and a general study of public policy in the American educational system. This course is open to students in certification and doctoral programs only. In addition to educational leadership related to the politics and policy of education, emphasis is given to innovative and contemporary practices of school administration. This course will also cover policy analysis as a tool for examining and evaluating existing and proposed policies. Credit Hours: 3

EAHE553 - Planning Processes and Policy Development Surveys issues involved with accountability in education. Explores in some detail various planning models. Examines concepts and strategies in public policy development. Credit Hours: 3

EAHE555 - Leadership and Change in Education Organizations An advanced seminar devoted to the study of leadership and change in the administration of complex education organizations. Particular emphasis is placed on organizations as social units that pursue specific goals, which they are structured to serve. Leadership and change are examined in terms of how they can influence organizational goals, organizational structure and organizations and the social environment. Credit Hours: 3

EAHE556 - The School Superintendent and Board of Education Focuses on superintendent-school board relationships. It investigates the administrative team's role and functions as they relate to leadership in educational policy making. Credit Hours: 3

EAHE558 - Personnel Evaluation and Administration This course will provide the administrator with the concepts, strategies and assessment measures to evaluate and manage personnel in both simple and complex organizational settings. Credit Hours: 3

EAHE564 - Seminar in Ethics and Social Justice in Education The goals of this course are to provide educational leaders with a framework for understanding the dynamics of oppression, to offer tools for ethical decision making, and to increase awareness and responsibility toward social justice issues in education. Credit Hours: 3

EAHE569 - School Operations and the Law This course presents information pertinent to understanding, interpreting, and applying appropriate law as a central office school administrator. A

major emphasis concentrates on understanding basic principles of law in order to apply them at a school district-level. An emphasis focuses on interpreting current legislation for application purposes as a school administrator. Prerequisite: EAHE 519 or equivalent. Credit Hours: 3

EAHE575 - Women in Higher Education (Same as WGSS 575) The goal of this course is to provide an overview of women in higher education. Topics that will be considered are: feminism's impact of women in higher education; the division of labor for women (including faculty and professional staff positions); historical and sociological perspectives of access to higher education including curriculum and pedagogy. Credit Hours: 3

EAHE576 - College Men and Masculinities (Same as WGSS 576) This course is a readings-based seminar covering concepts of masculinity as demonstrated by collegiate men in the United States. The readings in this course cover cultural as well as identity elements of what being a "college man" means (and how that definition has changed over time and contexts). The readings consist of historical, contemporary and theoretical scholarship concerning collegiate masculinity. Credit Hours: 3

EAHE588 - General Graduate Seminar Selected topics or problems related to administration and leadership in education. Credit Hours: 3-6

EAHE590A - Readings Advanced reading in one of the following areas-Administration. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590B - Readings Advanced reading in one of the following areas-Buildings. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590C - Readings Advanced reading in one of the following areas-Supervision of curriculum. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590D - Readings Advanced reading in one of the following areas-Finance. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590E - Readings Advanced reading in one of the following areas-School law. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590F - Readings Advanced reading in one of the following areas-Supervision. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590G - Readings Advanced reading in one of the following areas-Comparative education. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590H - Readings Advanced reading in one of the following areas-History of education. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590I - Readings Advanced reading in one of the following areas-Philosophy of education. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590J - Readings Advanced reading in one of the following areas-Sociology of education. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590K - Readings Advanced reading in one of the following areas-Adult and community education. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590L - Readings Advanced reading in one of the following areas-Higher education. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE591 - Individual Study Individual inquiry into selected problems or special topics in higher education under supervision of a graduate faculty member. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-6

EAHE593A - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty

member in administration. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593B - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in buildings. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593C - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in supervision of curriculum. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593D - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in finance. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593E - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in school law. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593F - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in supervision. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593G - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in comparative education. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593H - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in history of education. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593I - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in philosophy of education. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593J - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in sociology of education. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593K - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in adult and community education. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593L - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in higher education. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE595 - Principal Internship The School Principal Internship is a sustained, continuous, structured, and supervised learning opportunity for practicing principals (interns) to observe firsthand the role and function of the school principal. The internship takes place within 12 months during which students complete a total of 6 credit hours. Students may repeat the course to improve outcomes to meet standards for educator licensure/endorsement. Credit Hours: 2-6

EAHE596 - School Business Management Internship An internship conducted in a K-12 school setting for fulfillment of the state of Illinois' School Business Management Endorsement. Special approval needed from student's adviser or designee. Students must complete a total of 6 credit hours of internship

to qualify for the state endorsement. Students may repeat the course to improve outcomes to meet standards for educator licensure/endorsement. Credit Hours: 1-6

EAHE597 - Superintendent Internship An internship conducted in a central administrative setting for fulfillment of the state of Illinois' Level III Administrative Certificate. Special approval needed from student's adviser. Students may repeat the course to improve outcomes to meet standards for educator licensure/endorsement. Credit Hours: 1-6

EAHE598 - Higher Education Internship The internship provides an opportunity for practical experience related to college level teaching or administration. Each student must obtain prior approval from his/her advisor before registering for or starting an internship. Additionally, each student must pass all of the assigned internship requirements in order to receive a pass for the course. Special approval needed from the advisor. Credit Hours: 1-6

EAHE599 - Thesis Credit Hours: 1-6

EAHE600A - Dissertation Minimum of 24 hours to be earned for the Doctor of Philosophy degree. Credit Hours: 1-12

EAHE600B - Capstone Minimum of 12 hours to be earned for the Doctor of Education degree. Credit Hours: 1-12

EAHE601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

EAHE699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Educational Administration Faculty

Colwell, William Bradley, Professor, Ph.D. and J.D., University of Illinois at Urbana-Champaign, 1996. Education law and policy, collective bargaining.

Dilley, Patrick, Professor, Ph.D., University of Southern California, 2000; 2001. History of higher education, gender studies, and qualitative research.

Donahoo, Saran, Professor and Chair, Ph.D., University of Illinois at Urbana-Champaign, 2004; 2004.

Kelly, Gary, Clinical Assistant Professor, Southern Illinois University, 2006; 2018. School and instructional leadership.

Emeriti Faculty

Dively, John, Clinical Assistant Professor, Emeritus, Ed.D., Illinois State University, 1995, J.D., Southern Illinois University, 1985; 2014.

Eaton, William E., Professor, Emeritus, Ph.D., Washington University, 1971; 1971.

Goldman, Samuel, Professor, Emeritus, Ph.D., University of Chicago, 1961; 1980.

Green, Judith A., Associate Professor, Emerita, Ph.D., Purdue University, 1990; 2005.

Electrical and Computer Engineering

Graduate Programs and Research Areas

The School of Electrical, Computer, and Biomedical Engineering (ECBE) offers programs of study and research leading to: i) the Master of Engineering (M.E.) degree in Electrical and Computer Engineering, ii) the Master of Science (M.S.) degree (thesis/non-thesis) in Electrical and Computer Engineering, and iii) the Doctor of Philosophy (Ph.D.) degree in Electrical and Computer Engineering.

The School provides a rich environment for educational, research, and professional advancement in the following areas:

1. **Electrical Systems**: Electric Energy & Renewables, Power Systems, Electricity Markets, Electric Vehicles, Optics & Photonics, Optical Imaging, Antennas.
2. **Microelectronics**: Electronic Design Automation, Emerging Nanoscale and Quantum Technologies, VLSI Circuits, Integrated Systems, 3-D Chip Design, Sensors, Electronics for Harsh Environments.
3. **Signals and Communications**, **and Control**: Image Processing, Signal Processing, Computer Vision, Telecommunications, Communication Networks, Wireless Energy Harvesting for IoTs, Terahertz Technology, Control Systems, Robotics.
4. **Hardware and Firmware**: Computer Architectures, Embedded Systems, Network Systems, Robotics, Programmable Logic Controllers, Internet of Things (IoT) Devices.
5. **Systems Software**: Machine Learning, Artificial Intelligence, Cloud Computing, Energy-Aware Computing, Digital Design Automation, Multi-Core Programming, High-Performance Scientific Computing, Operating Systems, Software Engineering, Systems Programming.
6. **Medical Devices:** Biomedical Instrumentation, Biomedical Imaging, Advanced Manufacturing, Biophotonics and Medical Electronics, Biosensors.
7. **Biological Systems:** Drug Screening and Precision Diagnostics, Neural Stimulation and Pain Analysis, Kinematics and Mechanobiology.

The ECBE programs of study provide a balance between formal classroom instruction and research, and are tailored to the individual student's academic and professional goals. Graduates of the program enjoy excellent employment opportunities and are highly recruited worldwide in industry, government, and academia.

Admission, degree requirements, graduation, and time limits are subject to the general guidelines of the Graduate School.

Master of Engineering (M.E.) in Electrical and Computer Engineering

Objectives

The program is designed to allow a graduate student to earn a non-thesis Master of Engineering (M.E.) degree in Electrical and Computer Engineering in 2-3 semesters (with the possibility of completing within one year). The M.E. in Electrical and Computer Engineering program is coursework-oriented and is inclined towards professional development, allowing more flexibility in taking online/distance education hours.

Admission

The M.E. in Electrical and Computer Engineering program is designed for individuals holding a Bachelor's degree in electrical or computer engineering or related field. Qualified applicants with Bachelor's degrees in other areas of engineering and science may be able to enroll in the program with additional preparation (approved by the School on a case-by-case basis). The applicants must indicate whether they are pursuing the degree online or on campus.

Admission to the M.E. in Electrical and Computer Engineering program is based on the following factors: grade point average of 2.75 or higher on a scale of 4.0 on the entire last undergraduate GPA earned at the time of application, class ranking, and faculty recommendation letters. Exceptions can be made

on a case-by-case basis. GRE scores are not required for admission. However, they are important to qualify for the High Achievers Tuition Rate. See https://tuition.siuc.edu/highachievers2.html. The English proficiency requirement and any applicable exemptions will be determined according to Graduate School guidelines.

Curriculum

The program requires a total of 30 credit hours of graduate-level credit. ECE 592, ECE 580 (Seminar), and ECE 599 will not count toward the degree. At least six credit hours must be in ECE 500-level courses that do not have significant overlap/similarity with ECE 300/400-level courses, as stated in their catalog description. Online/distance education hours offered by the University and approved by the School could be applied to the degree. Also, a maximum of six credit hours of non-ECE courses offered by the University and approved by the School could be applied towards the degree. These courses may include topics such as business fundamentals, entrepreneurship, management, and leadership.

A student pursuing the M.E. in Electrical and Computer Engineering degree could switch to the corresponding M.S. in Electrical and Computer Engineering program upon recommendation of ECBE faculty and with the approval of the School, provided admission requirements of the M.S. in Electrical and Computer Engineering degree are met.

Retention

Any student whose cumulative grade point average falls below 3.0 on courses that count towards the degree will be placed on academic probation. Any graduate student on academic probation whose grade point average remains below 3.0 on courses that count towards the degree for two consecutive semesters in which they are enrolled will be permanently suspended from the program, unless the School grants an exception.

Master of Science (M.S.) in Electrical and Computer Engineering

Objectives

The Master of Science (M.S.) in Electrical and Computer Engineering program has two tracks: i) The non-thesis track is coursework-oriented; ii) The thesis track is research-oriented. The applicants must indicate whether they are pursuing the thesis or the non-thesis track degree option.

Admission

Individuals holding a Bachelor's degree in electrical or computer engineering or related field may apply. Qualified applicants with Bachelor's degrees in other areas of engineering and science may be able to enroll in the program with additional preparation (approved by the School on a case-by-case basis).

Admission to the M.S. in Electrical and Computer Engineering program is based on the following factors: grade point average of 3.0 or higher on a scale of 4.0 on the entire last GPA earned at the time of application, class ranking, and faculty recommendation letters. Exceptions can be made on a case-by-case basis. GRE scores are not required for admission. However, they are important to qualify for the High Achievers Tuition Rate. See https://tuition.siuc.edu/highachievers2.html. Also, GRE scores, especially Quantitative, may be considered for fellowships/assistantships/scholarships. The English proficiency requirement and any applicable exemptions will be determined according to Graduate School guidelines.

Curriculum

The program requires a total of 30 hours of graduate-level credit. For the non-thesis track, at least nine credit hours must be in ECE 500-level courses that do not have significant overlap/similarity with ECE 300/400-level courses, as stated in their catalog description. ECE 592, ECE 580 (Seminar), and ECE 599 will not count towards the degree. A maximum of three credit hours of non-ECE courses offered by the University and approved by the School could be applied towards the degree. Students in the non-thesis track are required to take a Comprehensive Examination. The Comprehensive Examination, in whole or

in part, cannot be taken more than two times and students must pass the examination before graduation. The Comprehensive Examination, which is administered by the ECBE Graduate Studies Committee, will be offered in the second week of February and the second week of September.

For the thesis track, six credit hours of thesis (ECE 599) are required. At least six credit hours must be in ECE 500-level courses (excluding ECE 592 and ECE 599) that do not have significant overlap/similarity with ECE 300/400-level courses, as stated in their catalog description. A maximum of three credit hours of ECE 592 could be counted towards the degree requirements. ECE 580 (Seminar) will not count towards the degree. A maximum of three credit hours of non-ECE courses offered by the University and approved by the School could be applied towards the degree. The student must have a thesis advisor on file within the first semester of enrollment. Students in this track will develop a program of study in consultation with their thesis advisor. The M.S. thesis shall be supervised by a committee of three members of the graduate faculty (including the advisor) and approved by the School. The student must submit a properly formatted written thesis to the thesis committee. A student will be recommended for the degree according to the guidelines of the Graduate School.

A student pursuing the M.S. in Electrical and Computer Engineering degree could switch track (non-thesis to thesis or vice versa) or switch to the M.E. in Electrical and Computer Engineering program upon recommendation of ECBE faculty and with the approval of the School.

Retention

Any student whose cumulative grade point average falls below 3.0 on courses that count towards the degree will be placed on program academic probation. Any graduate student on academic probation whose grade point average remains below 3.0 on courses that count towards the degree for two consecutive semesters in which they are enrolled, excluding summer sessions, will be permanently suspended from the program, unless the School grants an exception.

Accelerated Master’s Program

Objectives

The Accelerated Master’s Program is designed for high-achieving students who are currently enrolled in an undergraduate program in the School. The program will allow students to earn both a Bachelor’s degree and a Master’s degree within five years by completing 147 credit hours (instead of 156 credit hours if pursuing Bachelor’s and Master’s studies separately).

Admission

Apply as early as the beginning of the first semester of junior year for acceptance into the program. Work with the undergraduate Academic Advisor (and a potential graduate faculty advisor, if needed) to develop a program of study identifying 9 credit hours that may be counted towards both the Bachelor’s degree and the Master’s degree.

Students are considered as undergraduates until all requirements for the Bachelor’s degree have been fulfilled. For the Master’s degree, they will have the option to select either the M.S. in Electrical and Computer Engineering (thesis/non-thesis) or the M.E. in Electrical and Computer Engineering degree.

Curriculum

Junior/Senior Year - Complete up to nine graduate-level ECE credit hours during the junior/senior year taken from the School of Electrical, Computer, and Biomedical Engineering (excluding ECE 492, ECE 592, and BME 592). At most nine graduate-level ECE credit hours will be counted towards both the Bachelor’s and the Master’s degree requirements. Graduate Year - Complete the remaining Master’s coursework and other requirements within one year of full-time graduate study.

Retention

Any graduate student whose cumulative grade point average falls below 3.0 on courses that count towards the Master's in Electrical and Computer Engineering degree will be placed on program academic probation.

Doctor of Philosophy (Ph.D.) in Electrical and Computer Engineering

Objectives

The program is designed to achieve the following academic objectives:

1. to fulfill the obligation of the School of Electrical, Computer, and Biomedical Engineering to provide high-quality education through the doctoral level as is mandated by the mission statement of the University;
2. to provide the students with the training necessary to successfully apply the fundamental concepts and methods of electrical and computer engineering to specific areas of research and development;
3. to provide the graduates with the ability to independently organize and conduct research in electrical and computer engineering;
4. to provide the graduates with the ability to concisely disseminate existing and new knowledge and to accurately present their research plans in writing.

Admission

Admission to the program normally requires a Master's degree in Electrical or Computer Engineering or a related field. Applicants with exceptional research potential or outstanding academic qualifications may be considered for direct entry into the program after completion of a Bachelor's degree in Electrical or Computer Engineering or a related field. Students currently enrolled in a Master's program in the School may be considered for accelerated entry into the program upon the recommendation of the faculty in the School.

Individuals holding a Master's degree with a GPA of 3.25/4.0 or higher may apply. For direct and accelerated entry, a Bachelor's degree with a GPA of 3.0/4.0 or higher is required. Exceptions can be made on a case-by-case basis and will be reviewed by the ECBE Graduate Affairs Committee. All applications for admission must include the following: a statement of research interest, transcripts, official GRE scores, and three reference letters. The English proficiency requirement and any applicable exemptions will be determined according to Graduate School guidelines.

Advisement

The student must have an advisor on file within the first semester of enrollment. The advisor will assist the student in defining the area of research (the core), and developing a plan of study. Students should also make themselves familiar with the degree timeline, program requirements, expected scholarly outcomes, parameters used to assess the performance at various stages, and the opportunities of (and expectations for) fellowships or scholarships.

Retention

Any graduate student whose cumulative grade point average falls below 3.25 on courses that count towards the degree will be placed on academic probation. Any graduate student on academic probation whose grade point average remains below 3.25 on courses that count towards the degree for two consecutive semesters in which they are enrolled, excluding summer sessions, will be permanently suspended from the program, unless the School grants an exception.

Curriculum

1. 12 credit hours of ECE 500-level courses (excluding ECE 592 and ECE 599) that do not have significant overlap/similarity with ECE 300/400-level courses, as stated in their catalog description. Nine credit hours of ECE 500-level courses that do not have significant overlap/similarity with ECE 300/400-level courses constitute the core. The objective of the core is to provide the candidate with the foundation necessary to engage successfully in the selected research area.
2. For applicants with a Master's degree, nine credit hours of other graduate-level ECE courses (excluding ECE 599). For direct and accelerated entries, 15 credit hours of other graduate-level ECE courses (excluding ECE 599).
3. Three credit hours of graduate-level mathematics or science or a non-ECE engineering course offered by the University and approved by the School; and
4. 24 dissertation credit hours.

A maximum of three credit hours of ECE 592 could be counted towards the degree requirements. ECE 580 (Seminar) will not count towards the degree.

Qualifying Examination

A student will take the Qualifying Examination within the first year of residency in the program. The written examination, given by three different ECBE voting faculty members with graduate status, covers at least three major research areas of ECBE. The student must score at least 75 percent in each area tested. If not successful, the committee may allow the student to repeat the whole or part of the examination. The Qualifying Examination, in whole or in part, cannot be taken more than two times. The examination is administered by the ECBE Graduate Studies Committee.

Preliminary Examination

Following the successful completion of the Qualifying Examination and the core courses (which satisfy the research tool requirement of the Graduate School), the student will be allowed to take the Preliminary Examination. Before taking the examination, the student must form a preliminary examination committee consisting of five faculty members with at least one (but not more than two) outside the School. The student's faculty advisor shall be one of the five members and shall chair this committee.

The student must prepare and submit a formal written proposal of original research, defining the proposed line of inquiry, rationale, a solid plan to conduct the proposed research, and the expected outcomes. The student subsequently must make an oral presentation of the proposal to the members of the preliminary examination committee. The student is expected to address and respond to any questions related to the materials covered by the relevant courses taken during their doctoral studies or to the background necessary for the specific area of the proposed research. In addition, the student is expected to defend the research methodology and the proposed line of inquiry. The Preliminary Examination, in whole or in part, cannot be taken more than two times.

Candidacy

Admission to candidacy requires: (a) passing the Qualifying Examination and completion of the core courses (which satisfies the research tool requirement of the Graduate School), (b) passing the Preliminary Examination, and (c) successful completion of 24 credit hours (which satisfies the residency requirement of the Graduate School).

Dissertation Committee

Following the admission to candidacy, the School Director in consultation with the student's advisor (dissertation supervisor) appoints the dissertation committee, which shall consist of five faculty members with at least one (but not more than two) outside the School. The student's dissertation supervisor shall be one of the five members and shall chair this committee. The dissertation supervisor must be an ECBE faculty and have Direct Dissertation status. A non-ECBE faculty member with Direct Dissertation status may serve as a co-supervisor.

Dissertation

Students in the program will be expected to work towards their Ph.D. dissertation research as soon as they are admitted to candidacy.

The dissertation must be prepared in accordance with the guidelines of the Graduate School. Dissertation approval is based on the successful defense of the research performed in terms of originality, relevance, and presentation (written and oral).

Dissertation Defense

Upon completion of the dissertation, which must demonstrate the ability of the candidate to conduct independent research, the committee will administer the final oral examination. The objective of the final oral examination, conducted in an open forum, will be the defense of the dissertation. Upon satisfactory completion of the dissertation and the final oral examination, the committee will recommend the candidate for the doctoral degree.

Technical writing and oral presentation skills are important, particularly for a possible academic career. The dissertation committee shall evaluate the candidate's skills both in technical writing and oral presentation. A student will be recommended for the degree according to the guidelines of the Graduate School.

Graduation

The student must complete the curriculum with a minimum grade point average of 3.25 on courses that count towards the degree.

Electrical and Computer Engineering Courses

ECE494 - Diagnostic Ultrasound Diagnostic ultrasound is an ultrasound-based biomedical imaging technique used to visualize muscles, tissue, and many internal organs, to capture their size, structure and any pathological lesions. This course is an introduction to the principles and applications of biomedical ultrasound. This course will focus on fundamentals of acoustic theory, principles of ultrasonic detection and imaging, design and use of currently available tools for performance evaluation of diagnostic devices, and biological effects of ultrasound. Prerequisite: MATH 305 and ECE 355 with a grade of C or consent of instructor. Restricted to enrollment in ECE programs. Lab fee: $30 to help defray cost of equipment, supplies, and software licenses. Credit Hours: 3

ECE501 - Data Mining with R R programming language: Vectors, Matrices, Lists, Data Frames, Factors, Tables. Review of machine learning techniques: Numerical Regression, Logistic Regression, k-Nearest Neighbors, Decision Trees. ROC curves. Various application case studies. Restricted to graduate standing and consent of instructor. Students who have completed ECE 435 or BME 435 will not receive credit for this course. Credit Hours: 3

ECE502 - Network System Security Principles, design, and implementation of network systems security. Network security basics (computer networks and network security module), packet sniffing and spoofing, network security systems (firewall, virtual private network, and instruction detection systems), security tools (AES, Hash, RSA, and public key infrastructure), and advanced topics such as bitcoin and block chain. Students who have completed ECE 433 will not receive credit for this course. Restricted to graduate standing and consent of instructor. Credit Hours: 3. Credit Hours: 3

ECE503 - Modern Cryptography Probability and basic number theory, block ciphers and key-recovery security, pseudorandom functions, symmetric encryption, hash functions, message authentication codes, authenticated encryption, asymmetric encryption, digital Signatures, key distribution, lattice-based cryptography, identity-based encryption, zero-knowledge e techniques, introduction to quantum cryptography. Credit Hours: 3

ECE504 - Hardware and Software Aspects in the Internet of Things Fundamentals and importance of the Internet of Things (IoT). Sensors and hardware components of IoT systems. Design of energy-

efficient IoT systems from circuit to system level. Connectivity in IoT, off-loading strategies, and federated learning concepts. Applications of IoT in smart cities, healthcare, agriculture, and augmented/virtual Reality. Prerequisites: ECE 329 and ECE 321 (or equivalent) with a grade of C or better or consent of instructor. Credit Hours: 3

ECE505 - Surgical Technologies Overview of the ordinary physiology of cells and tissues and the abnormal physiology associated with cancer and/or other major diseases. Role of surgeries in the practice of modern medicine with a special focus on cancer treatment and/or other important procedures. Environment of and people inside the operating room. Therapeutic and diagnostic tools and techniques available in the operating room. Open and minimally invasive surgeries. Introduction to image-guided surgeries. Imaging systems and contrast agents for image-guided surgeries. Introduction to robotic surgeries. Preclinical research, clinical research, and FDA-approval process. Prerequisite: ECE 355 (or equivalent). Credit Hours: 3

ECE506 - Biomedical Optics (Same as BME 506) Fundamental theories of light, including the wave theory of light and the particle theory of light; Fundamental interactions between light and matter, including reflection, refraction, absorption, scattering, fluorescence, and polarization; Biology of cells and tissues; Tissue optical properties; Tissue-targeted contrast agents; Coherence and interference; Light transport in turbid media; Diagnostic applications of light, including microscopy, spectroscopy, fluorescence imaging, fluorescence-lifetime imaging, optical coherence tomography, diffuse optical tomography, and/or biosensors; Therapeutic applications of light, including photodynamic therapy, photothermal therapy, and/or laser ablation. Prerequisites: ECE 355, MATH 251, and PHYS 205B, or equivalent, with a grade of C or better, or consent of instructor. Students who are taking or have taken BME 431 or ECE 451 are ineligible to enroll. Credit Hours: 3. Credit Hours: 3

ECE507 - Image Sensors (Same as BME 507) Fundamentals of semiconductor physics, including the use of doping and biasing to control electronic potentials in devices; Fundamentals of integrated circuits, including the design and fabrication of diodes, transistors, and interconnects; Fundamental interactions between light and matter, including reflection, refraction, and absorption; Structure and operating modes of photodiodes; Architectures and operating principles for charge coupled device (CCD) image sensors and complementary metal-oxide-semiconductor (CMOS) image sensors; Performance metrics for image sensors, including the noise floor, the full-well capacity, the quantum efficiency, and fixed pattern noise; Construction of color image sensors; Signal processing for image sensors, including color interpolation and color correction. Prerequisite: ECE 355 and PHYS 205B, or equivalent, with a grade of C or better, or consent of instructor. Students who are taking or have taken BME 453 or ECE 453 are ineligible to enroll. Credit Hours: 3. Credit Hours: 3

ECE508 - Computer Systems Security Principles of computer systems security. Vulnerabilities, attacks and defenses, cryptographic primitives, authentication, digital signature, access control. Software systems security: buffer overflow, virus, SQL injection. Networking security: denial of service attack, firewall and IDS, Wi-fi security. Hardware systems security: secure processing and secure co-processor. Cloud, edge and IoT security. Students who have completed ECE 434 will not receive credit for this course. Restricted to graduate standing in ECE or consent of instructor. Credit Hours: 3

ECE509 - Systems Reliability Combinatorial aspects of system reliability. Parallel, standby, n-modular redundancy. Common cause failures. Information coding techniques. Reliability optimization and apportionment. Fault-tolerant computer design techniques. Students who have completed ECE 419 will not receive credit for this course. Restricted to graduate standing and consent of instructor. Credit Hours: 3

ECE510 - Hardware Designs and Architectures for AI Artificial intelligence (AI) is currently widely used in many advanced Machine learning (ML) applications. This course covers the fundamentals of design and implementation of hardware architectures for AI algorithms. Basic hardware building blocks will be introduced. It will also introduce the emerging memristor-crossbar array (MCA) as a computing platform for implementing neural network architectures. Students will gain hands-on experience through mixed-signal simulations and validation techniques. Students will be assigned a team project which applies concepts and tools learned from this course. Prerequisites: ECE 327 and ECE 345 with grades of C or better. Students who have completed ECE 410 will not receive credit for this course. Project-based fee: $35 to help defray cost of software licenses and computers in the lab. Credit Hours: 3

ECE511 - Software Hardware Co-design for Deep Neural Networks Analysis of deep learning techniques such as deep feedforward networks, regularization, optimization algorithms, convolutional networks, and sequence modeling. Utilization of machine learning frameworks such as Tensorflow and Pytorch. Investigation of hardware architectures for machine learning applications such as GPUs, TPUs, and systolic arrays. Students will also work on a semester-based project utilizing the latest advancements in deep neural networks. Students that have completed ECE 411 are not eligible to enroll in ECE 511 as the courses cover similar topics to an extent. Credit Hours: 3

ECE512 - Wireless Networks Compared to infrastructure based wireless communication systems, ad hoc wireless networks present several unique advantages. Thus, it has been widely studied as an important wireless communication paradigm. This graduate level course first introduces several widely adopted wireless communication technologies and then presents the concept, structure, and principles of ad hoc wireless networks. The course also introduces the details of several popular ad hoc wireless networks including mobile ad hoc networks, delay tolerant networks, wireless sensor networks, and connected vehicle networks. Novel applications in those networks will also be introduced. The course work will include paper and literature review, presentations, assignments, and a project that will enable students to be familiar with ad hoc wireless networks. NS2 will be used for student project in this course. Students can gain experience on NS2. Students who have taken ECE 412 are ineligible to enroll. Project-based fee: $10 to help defray cost of equipment. Credit Hours: 3

ECE513 - Digital VLSI Design Principles of the design and layout of Very Large Scale Integrated (VLSI) circuits concentrating on the CMOS technology. MOS transistor theory and the CMOS technology. Characterization and performance estimation of CMOS gates, CMOS gate and circuit design. Layout and simulation using CAD tools. CMOS design of datapath subsystems. Design of finite state machines. Examples of CMOS system designs. Laboratory experience in CMOS VLSI design. Restricted to enrollment in ECE program. Students who have taken ECE 423 are ineligible to enroll. Project-based fee: $35 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE514 - Design of Embedded Systems Introduction of modern embedded system application, platform architecture and software development. Principles of embedded processor architecture, operating systems and networking connectivity. Design and optimize in terms of system power, security and performance. Lecture and laboratory. Students who have taken ECE 424 will not receive credit for this course. Prerequisites: Courses equivalent to ECE 296, ECE 296L, ECE 321, ECE 329, with grades of C or better or consent of instructor. Lab fee: $10 to help defray cost of equipment. Credit Hours: 3

ECE515 - Three Dimensional Integration Systems This course introduces the design of three dimensional VLSI integration systems, including through-silicon-via (TSV) process, characterization and modeling, 3D IC systems design, mixed signal simulation, data management, testing, process, variation, thermal and reliability challenges, as well as review of 3D system design examples. Laboratory experience in design tools (Cadence Virtuoso and Liberate, AMS simulator). Prerequisite: ECE 345 and ECE 423 with a grade of C or better. Restricted to enrollment in ECE program. Credit Hours: 3

ECE516 - Implementation of VLSI Systems with HDL This course is dedicated for advanced Digital VLSI architecture and system implementation for high performance and low power digital signal processing applications. Application-specific processors and architectures to support real time processing of signal processing systems will be studied. Hands-on experience of using state-of-the-art CAD tools on designing such kind of VLSI architecture and systems. Upon completion of this course, students will entail large HDL-based implementation of a complete VLSI system. Students who have taken ECE 426 are ineligible to enroll. Prerequisite: ECE 327 with a grade of C or better. Project-based fee: $35 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE517 - Edge Computing Analysis of IoT architectures and core IoT modules, integration of sensors and data acquisition systems, power-aware optimizations, and embedded operating systems. Investigation of cloudlet topologies and services, edge to cloud protocols, and security. Special focus will be given on data analytics and machine learning in the cloud and the edge. Credit Hours: 3

ECE518 - Advanced Hardware Security and Trust Cryptographic systems and hardware. Advances in physically unclonable functions. Random number generators. Watermarking. Hardware metering. Side channel attacks including fault injection and power analysis. Types of hardware Trojan attacks (forms and sizes). Detection of hardware Trojans. Hardware tampering and obfuscation. Countermeasures against hardware attacks and hardware authentication. Counterfeit circuits: detection and avoidance. Trust issues

in FPGAs. JTAG security and trust. SoC security requirements and secure design. Prerequisite: ECE 418 or graduate standing. Credit Hours: 3

ECE519 - Advanced Computer Security with Machine Learning This course covers the principles and practices of advanced computer systems security using machine learning. The principles encompass topics such as machine learning for computer security, cryptography, software and network security, as well as security and privacy in machine learning applications. The practical component consists of a series of hands-on labs aimed at achieving data confidentiality, authenticity, and integrity, along with exploring various attacks and their countermeasures. Restricted to graduate standing in ECE or consent of instructor. Credit Hours: 3

ECE520 - VLSI Design and Test Automation Principles of the automated synthesis, verification, testing and layout of Very Large Scale Integrated (VLSI) circuits concentrating on the CMOS technology. Resource allocation and scheduling in high-level synthesis. Automation of the logic synthesis for combinational and sequential logic. The physical design automation cycle and CMOS technology considerations. Fault modeling and testing. Timing analysis. Laboratory experience using commercial tools for synthesis and layout. Students who completed ECE 425 can't take ECE 520. They are similar. Prerequisite: ECE 327 with a C- or better or enrollment in ECE graduate programs. Project-based fee: $30 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE521 - Fault-Tolerant Computer Design Concepts of error detection, location and correction in digital systems. Codes for error detection and correction. Models and simulations of faults. Design of tests for combinatorial and sequential circuits. Testability. Design of digital systems with testability. Prerequisite: ECE 423, ECE 425 or consent of instructor. Restricted to enrollment in ECE program. Credit Hours: 3

ECE522 - VLSI Circuit Testing Theoretical and practical aspects of production testing of VLSI circuits. Relations between physical defects and fault models. Procedures for generating test inputs. Design modifications for test application and theory of built-in self-test. Prerequisite: ECE 425 or ECE 520 with a minimum grade of C or consent of instructor. Restricted to enrollment in ECE program. Project-based fee: $25 to help defray cost of software licenses. Credit Hours: 3

ECE523 - Low Power VLSI Design Source of power dissipation, technology impact on power dissipation, low power circuit techniques, energy recovery, synthesis of low power circuits, low power components. Prerequisite: ECE 423 or ECE 513 with a minimum grade of C or consent of instructor. Restricted to enrollment in ECE program. Project-based fee: $35 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE524 - Synthesis and Verification of Digital Circuits Binary decision diagrams, finite state machines and finite automata. Design automation concepts in logic level synthesis, optimization and verification for combinational as well as sequential logic. Technology mapping. Prerequisite: ECE 425 or ECE 520 with a minimum grade of C or consent of instructor. Restricted to enrollment in ECE program. Project-based fee: $35 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE525 - Advances in Physical Design Automation Advances in the automation of VLSI layouts with emphasis on recent developments in deep submicron, FPGA and MCM technologies. Floor planning, placement, routing objectives in high performance designs using deep submicron technology. Timing analysis in the presence of crosstalk. FPGA architectures and design with dynamically reconfigurable FPGAs. Physical design automation for MCMs. Prerequisite: ECE 425 or ECE 520 with a minimum grade of C or consent of instructor. Restricted to enrollment in ECE program. Project-based fee: $35 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE526 - Network Processing Systems Design Protocol processing, packet processing algorithms, classification and forwarding, queuing theory, switching fabrics, network processors, network systems design tradeoffs. Prerequisite: ECE 422 and ECE 429 or consent of the instructor. Restricted to enrollment in ECE program. Credit Hours: 3

ECE527 - Integrated Interconnection Networks Importance of interconnection networks and networks-on-chip (NOCs). Specifications and constraints. Topology, routing, flow control, deadlock, livelock, arbitration, allocation, performance analysis, simulation. Restricted to enrollment in ECE program. Credit Hours: 3

ECE528 - Programmable ASIC Design Principle and practice of designing and implementing Application-Specific Integrated Circuits (ASIC). Field Programmable Gate Arrays (FPGA). Timing analysis, timing closure and managing difference clock domains in ASIC design. Complex arithmetic circuits. Digital signal processing (DSP) circuits. FPGA microprocessors. Students who have taken ECE 428 are ineligible to enroll. Project-based fee: $50 to help defray cost of equipment and consumable items. Credit Hours: 3

ECE529 - Computer Systems Architecture Principles of performance evaluation, processor microarchitecture, instruction-level parallelism, static and dynamic pipeline considerations. Superscalar processors. Multiprocessor systems. Memory hierarchy design, cache design. Mutual exclusion and synchronization mechanisms. Students who have taken ECE 429 are ineligible to enroll. Restricted to enrollment in ECE program. Credit Hours: 3

ECE530 - Engineering Data Acquisition (Same as ENGR 530) Theory of data acquisition and measurement systems. Criteria for selection of data acquisition hardware and software, instruments, sensors and other components of scientific and engineering experimentation. Methods for sampled data acquisition, signal conditioning, interpretation, analysis and error estimation. Restricted to enrollment in ECE program. Project-based fee: $60 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE531 - Mixed-Signal VLSI Design Analysis and design of mixed-signal integrated circuits. Digital to analog converter (DAC). Analog to digital converter (ADC). Sigma-delta data converters. Performance analysis of signal chains containing both analog and digital signal processing functions. Prerequisite: ECE 446 with a minimum grade of C. Restricted enrollment in ECE program. Project-based fee: $60 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE532 - Programming Parallel Processors Multi-core architecture, threads, thread execution models, thread priority and scheduling, concurrency, multi-threaded programming models, synchronization, performance measurement and local balance, software tools for multi-threaded programming. Restricted to ECE students or consent of advisor. Students who have taken ECE 432 are ineligible to enroll. Project-based fee: $20 to help defray cost of equipment. Credit Hours: 3

ECE533 - Speech Processing (Same as BME 533) Fundamentals of speech production system, signal analysis of speech, speech coding, linear prediction analysis, speech synthesizing, and speech recognition algorithms. Students who have taken ECE 474 are ineligible to enroll. Prerequisite: MATH 250, ECE 355 with grades of C or better or consent of instructor. Credit Hours: 3

ECE534 - Biomedical Signal Analysis (Same as BME 536) The nature of biomedical signals. Electricity in living tissue. Biomedical signal processing and modeling. Modeling and simulation of biomedical systems. Prerequisite: MATH 250, ECE 355 with a grade of C or better or consent of instructor. Project-based fee: $20 to help defray cost of software licenses. Credit Hours: 3

ECE535 - CMOS Radio-Frequency Integrated Circuit Design Introduction of RF IC, passive RLC Networks, passive IC components, MOS Transistors, distributed systems, Smith Chart and S-Parameters, introduction to Band-width estimation, biasing and voltage reference, basic High Frequency Amplifiers, introduction to: noise in RF IC, Low Noise Amplifiers, Power Amplifiers, Phase-Locked Loops and Oscillators. Lecture and laboratory. Students who have taken ECE 440 are ineligible to enroll. Lab fee: $35 to defray the cost of software licenses and equipment. Credit Hours: 3

ECE536 - Embedded Systems Programming Advanced software concepts and techniques to develop complex software projects on embedded systems. Concepts and techniques include system calls, structure of operating systems, advanced dynamic memory management, cross-compilation, scheduling techniques, and resource management. Students who have completed ECE 430 cannot take ECE 536. They are similar. Credit Hours: 3

ECE537 - Integrated Photonics Fundamentals of electromagnetic theory, waveguides, photonic structures including photonic crystals and integrated micro-ring resonator, numerical simulations of photonic integrated circuits using the beam propagation method, finite-difference time-domain method, rate equations, and fabrication processes. Prerequisite: ECE 441 or consent of instructor. Restricted to enrollment in ECE program. Credit Hours: 3

ECE538 - Medical Instrumentation: Application and Design (Same as BME 518) This course introduces ECE graduate students to the field of medical instrumentation. Medical instrumentation is the application of advanced engineering technology to problems in biology and medicine. The course focuses on fundamentals of instrumentation systems, sensors, amplifiers, and signal precondition. In addition, the course also includes design and applications of medical instrumentation, biopotential measurement, biomedical signal processing, and other related topics. Students who have completed ECE 438 or BME 438 will not receive credit for this course. Prerequisite: MATH 305 and ECE 355 with a grade of C or better, or consent of instructor. Restricted to enrollment in ECE programs. Project-based fee: $45 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE539 - Diagnostic Ultrasound Diagnostic ultrasound is an ultrasound-based medical imaging technique used to visualize muscles, tissue, and many internal organs, to capture their size, structure and any pathological lesions. This course is an introduction to the principles and applications of biomedical ultrasound. This course will focus on fundamentals of acoustic theory, principles of ultrasonic detection and imaging, design and use of currently available tools for performance evaluation of diagnostic devices, and biological effects of ultrasound. Students who have taken BME 439 or ECE 494 cannot receive credit for this course. Prerequisite: MATH 305 and ECE 355 or equivalent courses with a grade of C or consent of instructor. Restricted to enrollment in ECBE programs. Project-based fee: $30 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE540 - CMOS Radio-Frequency Integrated Circuit Design II High frequency amplifier design techniques, noise in RF IC and CMOS low noise amplifiers (LNA), mixers, oscillators, PLLs, frequency synthesizers, power amplifiers, an overview of wireless architectures. Prerequisite: ECE 440 or ECE 535 or equivalent. Lab fee: $50 to defray the cost of software licenses and equipment. Credit Hours: 3

ECE541 - Quantum Information Processing and Devices Fundamentals of information theory: uncertainty and information, thermodynamics of information. Quantum information processing: essential quantum mechanics of states, measurements and Bell's theorem, operations, and their representations as matrices; quantum Shannon theory (von Neumann entropy); quantum entanglement. Quantum cryptography. Various quantum algorithms and computational complexity. Building blocks: qubits and qubit operations, quantum machines. Decoherence, quantum error correction, and fault tolerance. Physical realization and quantum devices: double quantum dot charge qubit, Rabi oscillations of an excitonic qubit, Quantum dot spin-qubits, Photonic quantum computing, Superconducting qubits. Prerequisite: Familiarity with electronic and photonic devices, information theory, theoretical computer science, or quantum mechanics will be beneficial. Credit Hours: 3

ECE542 - Photonics and Devices Ray optics, wave optics, beam optics, polarization of light, Fourier optics, fiber optics, electro-optics, nonlinear optical media, acousto-optics, and photonic switching. Students who have completed ECE 441 cannot receive credit for this course. Prerequisite: ECE 375 (or equivalent) with a grade of C or better or consent of instructor. Project-based fee: $50 to help defray the cost of equipment and consumables. Credit Hours: 3

ECE543 - Advanced Analog Integrated Circuit Design Analysis and design of CMOS analog integrated circuits. Circuit noise analysis. Low-voltage high-performance operational amplifiers. Voltage and current reference circuits. Integrated analog filter circuits. Micropower circuits. Prerequisite: ECE 446 or ECE 546 with a minimum grade of C or consent of instructor. Restricted to enrollment in ECE program. Project-based fee: $35 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE543A - Bioelectronics and Biosensors (Same as BME 528) The sources of electrical signals in biological systems. Methods and types of sensors for sensing bioelectrical signals, including amperometric, potentiometric, piezo-electric, impedance, and FET based biosensors. Interface between biosensors and electronics for sensor signal condition and data acquisition. Precision electronics for biosensor signal acquisition, including potentiostat, current, charge, capacitance and impedance sensing circuit, lock-in amplifier. Prerequisite: ECE 345 or equivalent with a grade of C or better. Students who have completed ECE 442 or BME 418 will not receive credit for this course. Credit Hours: 3. Credit Hours: 3

ECE544 - Optical Imaging and Photonics (Same as BME 544) Geometrical optics, including refraction and reflection; Physical optics, including interference, diffraction, and polarization; Optical aberrations, including causes and effects; Fourier optics, with applications to imaging; Light sources, including LEDs and lasers; Photodetectors, including photodiodes and image sensors; Lens systems; Microscopes.

Students who are taking or have taken ECE 448 or BME 448 are ineligible to enroll. Prerequisites: ECE 355, MATH 251, and PHYS 205B, or equivalent, with a grade of C or better, or consent of instructor. Lab fee: $125 to help defray the cost of equipment, supplies, and software packages. Credit Hours: 3. Credit Hours: 3

ECE544A - Computer Vision This course covers fundamental and advanced topics in computer vision. Computer vision applications, image formation, image processing and filtering, deep learning, computer recognition and matching, 3D computer vision, motion and video. Students who have taken ECE 444 or BME 444 will not receive credit for this course. Prerequisite: ECE 355 with a minimum grade of C- or consent of instructor. Restricted to enrollment in ECE program. Credit Hours: 3. Credit Hours: 3

ECE545 - Advanced Semiconductor Devices Technology drivers: Moore, More-Moore, and More-than-Moore trends. Case Study: Integrated health monitoring systems, 3-D SoCs. Review of Solid-State Theory: electronic, magnetic, optical and thermal properties of semiconductors. Energy Related Devices: solid-state lighting, solar cells, thermoelectric devices, piezoelectric devices, energy storages and supercapacitors. Optoelectronic and Photonic Devices: Imagers, LEDs, OLEDs, Lasers, LCDs, thin-film transistors (TFTs). Sensors and Detectors. Microwave and Terahertz Devices. Prerequisite: ECE 447 or ECE 423 or ECE 446 or PHYS 425 or PHYS 430 or instructor consent. Credit Hours: 3

ECE545A - VLSI Design for Manufacturability and Process Control VLSI manufacturing: oxidation, photolithography, etching, doping; process integration and monitoring; Yield modeling. Design for manufacturability (DFM): Sources and impact of variability; Lithography aware design; Stress and related variations in FinFETs and beyond; Design solutions for analog systems, parametric fluctuations in digital systems, interconnects, compensation and limiting the degrees of freedom; Criticality-aware DFM. Process control: patterns, multivariate and supervisory control; Statistical experimental design; Process modeling and equipment diagnosis. Prerequisite: familiarity with physics of semiconductor devices (e.g., ECE 447 or ECE 423 or PHYS 425 with a grade of C or better, or instructor consent). Credit Hours: 3

ECE546 - Analog Circuit Design Analysis and design of electronic circuits, both discrete and integrated. Computer-aided circuit design and analysis. Design of amplifier and filter circuits. Circuit stability analysis and frequency compensation techniques. Restricted to enrollment in ECE program. Students who have taken ECE 446 are ineligible to enroll. Project-based fee: $10 to help defray cost of equipment. Credit Hours: 3

ECE547 - Semiconductor Devices Semiconductor industry and Moore's law. Review of quantum mechanics of atoms. From atoms to crystals: energy bands, effective mass and density-of-states. Semiconductor statistics. Carrier transport phenomena. PN junctions. Schottky junctions. Bipolar junction transistors (BJTs). MOSFETs: capacitance-voltage and current-voltage characteristics, threshold voltage, scaling and short-channel effects, SPICE models. CMOS process integration. Basic optoelectronic devices: LEDs and solar cells. Lecture and laboratory. Students who have taken ECE 447 are ineligible to enroll. Prerequisite: ECE 345 or equivalent. Project-based fee: $25 to help defray cost of software licenses. Credit Hours: 3

ECE548 - Quantum Phenomena and Devices Introduction: Classical Phenomena and Devices. Why Quantum Devices? Current Picture: Academia and Industry. Essential Statistical Mechanics. Essential Quantum Mechanics. Quantum Theory of Electrons: Quantization, Tunneling, Quantum Interference, Quantum Hall Effect, Scattering and Broadening, Dephasing and Shot Noise. Coulomb Blockade. Quantum Optics. Collective Phenomena and Spin. Relativistic Quantum Phenomena. Quantum Phase Transition. Quantum Computation. Prerequisite: ECE 447 or ECE 423 or ECE 446 or PHYS 425 or PHYS 430 with C or better or instructor consent. Credit Hours: 3

ECE549 - Fiber Optic Communications Fundamentals of step index and graded index fiber waveguides using geometrical optics and Maxwell's equations. Other topics include design criteria, practical coupling techniques, discussion of optical sources and detectors used in light-wave communications, system examples, characterization and measurement techniques. Prerequisite: ECE 447 or ECE 448 or consent of instructor. Restricted to enrollment in ECE program. Credit Hours: 3

ECE550 - Nanoscale VLSI Devices Review of fundamental principles of semiconductor devices. NanoTransistor: Charge-based devices-MOSFETs, non-ideal, atomistic, and quantum effects in nanoscale MOSFETs, charge-coupled devices. Advanced MOSFETs: FinFETs, SOI, SiGe and III-Vs, carbon nanotubes, graphene and 2-D semiconductors, nanowires. High electron mobility

transistors (HEMTs), HBTs, and power MOSFETs. Compact and SPICE models for MOS devices. VLSI interconnects, parasitic elements, 3-D integration and reliability issues. Non-charge based devices-tunnel FETs, spin-based devices. NanoMemory: EEPROM and Flash, phase change memory, memristors, magnetic and ferroelectric, spin-torque devices, DRAM and ZRAM cells. TCAD simulation of semiconductor devices. Prerequisite: ECE 447 or ECE 423 or ECE 446 or PHYS 425 or PHYS 430 with a C or better or instructor consent. Project-based fee: $25 to help defray cost of software licenses. Credit Hours: 3

ECE551 - Probability and Stochastic Processes for Engineers Axioms of probability, random variables and vectors, joint distributions, correlation, conditional statistics, sequences of random variables, stochastic convergence, central limit theorem, stochastic processes, stationarity, ergodicity, spectral analysis, and Markov processes. Restricted to graduate student status. Students who have taken BME 351 or ECE 351 cannot receive credit for this course. Restricted to enrollment in ECBE. Project-based fee: $20 to help defray cost of software licenses. Credit Hours: 3

ECE552 - Signal Detection and Estimation Estimation theory: parameter estimation, minimum variance unbiased estimators, sufficient statistics, Cramer-Rao lower bound, best linear unbiased estimators, maximum likelihood estimators, least squares, Bayesian estimation, maximum a posteriori estimators, minimum mean square error estimators, linear minimum mean square error estimators, Wiener filtering. Detection theory: hypothesis testing, likelihood ratios, Neyman-Pearson detection, Bayesian hypothesis testing, matched filtering, multiple hypothesis testing, sequential detection, composite hypothesis testing, uniformly most powerful tests, generalized likelihood-ratio tests. Prerequisite: ECE 551 or consent of instructor. Restricted to enrollment in ECE program. Credit Hours: 3

ECE553 - Computer Network System Architecture Principles of Computer Networks. Protocols and system level implementations. Socket programming, router and switching fabric architecture, security and packet classification techniques, multimedia networking and QoS. Restricted to enrollment in ECE program. Students who have taken ECE 422 are ineligible to enroll. Project-based fee: $10 to help defray cost of equipment. Credit Hours: 3

ECE554 - Broadband Wireless Communications Statistical models for broadband wireless channels: angular, delay, Doppler and spatial domain characterizations, near/far-field propagation characteristics, spatial non-stationary propagation, and spatial wide-band fading. Broadband channel estimation, hybrid beamforming/detection and massive multi-antenna (MIMO) techniques. Millimeter-wave, terahertz, and holographic communication models. Reconfigurable/reflective intelligent surfaces and performance analysis. Broadband modulation multiple access techniques: index modulation, orthogonal time frequency space modulation, and orthogonal/non-orthogonal multiple access techniques. Prerequisites: ECE 315 and ECE 355 or consent of instructor. Restricted to EE or CEGR majors or consent of instructor. Credit Hours: 3

ECE555 - Introduction to Information Theory and Channel Coding Entropy and Mutual Information. Channel Capacity. Gaussian Channel. Linear Block Codes. Convolutional Codes. Advance Channel Coding Techniques. Students who have taken ECE 476 are ineligible to enroll. Restricted to enrollment in ECE program. Credit Hours: 3

ECE556 - Digital Communications Digital communication signals and systems characterization. Deterministic receiver design. Probabilistic receiver design. Error control coding. Communication over band limited channels. Prerequisite: ECE 551 or consent of the instructor. Restricted to enrollment in ECE program. Credit Hours: 3

ECE557 - Computational Electronics Elements of computational science/engineering. High-performance clusters and software tools for HPCs. Essential numerical methods. Review of solid-state theory. Fundamental physics of charge transport in semiconductor VLSI devices. Numerical solution of Poisson's and carrier continuity equations in semiconductor devices. Boltzmann transport equation and Monte Carlo solutions. Electronic bandstructure calculations using the tight-banding formalism. Introduction to NEGF formalism. Commercial and non-commercial semiconductor device modeling tools. Prerequisite: Familiarity with physics of semiconductor devices (e.g., ECE 447 or ECE 423 or PHYS 425 with a grade of C or better, or instructor consent). Project-based fee: $25 to help defray cost of software licenses. Credit Hours: 3

ECE558 - Digital Image Processing I Scope and applications of digital image processing, digital image fundamentals, intensity transformations and spatial filtering, filtering in the frequency domain, image segmentation, basics of color image processing. Students who have taken ECE 458 are ineligible to enroll. Prerequisite: ECE 355 with a minimum grade of C- or consent of instructor. Project-based fee: $30 to help defray cost of equipment. Credit Hours: 3. Credit Hours: 3

ECE559 - Reinforcement Learning A graduate level course on the theory and practice of Reinforcement Learning. The course covers topics such as finite and infinite horizon Markov decision processes, multi-armed bandit problem, dynamic programming, approximate dynamic programming, value and policy iteration, Q-learning, Monte Carlo methods, and stochastic approximation. Prior knowledge of machine learning and optimal control is helpful but not required. Credit Hours: 3

ECE559A - Biomedical Microelectromechanical Systems The course is designed to introduce students with fundamentals of MEMS and its applications. The emphasis will be on physical principle in sensors and corresponding fabrication techniques, with supplemental discussion of the state-of-art applications in industry and research. Students will learn to analyze and design systems by solving regular homework problems and active participation during lectures and in-class examples. Topics: Introduction of MEMS (Chapter 1), fundamentals of microfabrication and nanofabrication, fundamentals of physics in sensors, a case study of electrostatic sensing, microfluidics and biomedical applications, projects. Prerequisites: MATH 251, PHYS 205A, PHYS 205B each with a grade of C or better, or consent of instructor. Students who have completed BME 419 or ECE 459 will not receive credit for this course. Project-based fee: $50 to help defray cost of equipment and commodities. Credit Hours: 3

ECE560 - VLSI Material and Device Characterization Introduction to semiconductors. Materials for modern VLSI: crystals, tubular and monolayer materials, organic materials, heterostructures, wafers and notations. VLSI unit processes, contacts and interconnects, integration and packaging. Spontaneous formation and ordering of nanostructures. VLSI device characterization: wafer mapping, line width and contact resistance, measurement of MOS parameters, defect characterization using DLTS, carrier mobility and lifetime measurements. Optical characterization, electron beam microscopy, particle and X-ray techniques. Reliability and lifetime measurements: failure statistics and modes, hot carriers, NBTI, oxide integrity, electromigration and electrostatic discharge. Power dissipation and cooling. Prerequisite: Familiarity with physics of semiconductor devices (e.g., ECE 447 or ECE 423 or PHYS 425 with a grade of C or better, or instructor consent). Credit Hours: 3

ECE561 - Mechatronics and Embedded Control Components of mechatronics systems, mathematical modeling, system identification, numerical tools for design and analysis, single-loop controller design, embedded systems, data acquisition and signal conditioning, sensors, actuators, networked control. This course includes lab session. Students who have taken ECE 456 are ineligible to enroll. Lab fee: $35 to help defray the cost of software licenses. Credit Hours: 3

ECE562 - Microwave Engineering I Electromagnetic theory, analysis, design, fabrication, measurement and CAD applied to passive networks at microwave frequencies. Topics include: Transmission lines, Waveguides, Impedance matching, Tuning, Resonators, Scattering parameters, the Smith Chart. Lecture and Laboratory. Students who have taken ECE 479 are ineligible to enroll. Prerequisite: ECE 375 or equivalent. Restricted to enrollment in ECE program. Project-based fee: $100 to help defray cost of software licenses. Credit Hours: 3

ECE563 - Advanced Image Sensors Pixel- and system-level design of charge coupled device (CCD) and complementary metal-oxide-semiconductor (CMOS) image sensors; Image processing pipelines for CCD and/or CMOS image sensors; Sources of nonlinearity and non-uniformity in image sensors, including photodiodes and amplifiers; Sources of noise in image sensors, including photon shot noise, dark shot noise, reset (kTC) noise, flicker (1/f) noise, and quantization noise; Materials used in image sensors, including silicon and indium gallium arsenide; Sources of resolution loss in image sensors, including crosstalk; Methods for evaluating image sensors; Technologies and techniques for moving beyond intensity-based imaging, including spectral imaging, polarization imaging, volumetric imaging, temporal imaging, and/or light-field imaging. Prerequisite: BME 453 or ECE 453 with a grade of C or better, or consent of instructor. Credit Hours: 3

ECE564 - Optimal Control Optimization techniques for linear and nonlinear systems. Variational calculus. Dynamic programming. Pontryagin's maximum principle. Hamilton-Jacobi theory. Linear regulator. Bang Bang control, minimum time control, singular control. Discrete variational calculus.

Combined estimation and control. Computational methods in optimal control. Prerequisite: ECE 456 or consent of instructor. Restricted to enrollment in ECE program. Credit Hours: 3

ECE565 - Nonlinear Control Systems Analysis and design of nonlinear dynamical systems. Topics include: nonlinear differential equations, stability, Lyapunov stability analysis, stability of perturbed systems, linearization, and central manifold theorem. Stabilization, feedback linearization, and controller design methods such as backstepping and sliding mode control. Credit Hours: 3

ECE566 - Linear Systems Theory Introduction to the structure and analysis of linear dynamical systems in time domain. Linear algebra review, solutions of linear differential equations, state-space representations, state transition matrix, and time varying systems. Introduction to fundamental mathematics of linear spaces and linear operator theory. Structural properties of linear systems such as controllability, observability, and stability. Design and synthesis of controllers and state observers for linear systems. Linear quadratic regulatory theory and Kalman filter. Credit Hours: 3

ECE567 - Modern Biomedical Imaging (Same as BME 567) Diagnostic x-ray imaging. Tomographic imaging. Ultrasound imaging. Magnetic resonance imaging (MRI). Optical imaging. Signal and noise characteristics. Image quality evaluation. Three-dimensional image reconstruction algorithms. Students who have taken ECE 467 or BME 467 cannot receive credit for this course. Prerequisite: MATH 305 and ECE 355 with a grade of C- or better, or consent of instructor. Restricted to enrollment in ECE program. Project-based fee: $30 to help defray cost of software licenses and equipment. Credit Hours: 3. Credit Hours: 3

ECE568 - Introduction to Machine Learning for Engineering Applications Basic machine learning concepts: Model selection, feature scaling, bias-variance trade-off, regularization, Performance metrics and validation techniques, Probability and statistics review. Supervised learning: Linear/non-linear regression and logistic regression, Generalized linear models, Generative learning models, Bayes decision theory, Naive Bayes classifier, Nearest neighbor classifiers, Hidden-Markov models, Support vector machines, Kernel methods, Bagging, Boosting. Unsupervised Learning: Clustering: K-means, Expectation-maximization, Anomaly detection, Dimensionality Reduction: Principal components analysis, transform techniques. Basics of reinforcement learning and deep learning. Restricted to 4th Year or graduate standing. Students who have taken ECE 469 cannot receive credit for this course. They are similar. Credit Hours: 3

ECE568A - Digital Signal Processing This course introduces graduate students to the field of digital signal processing, which is an area of science and engineering that has developed rapidly. The course topics include discrete-time signals and systems analysis, z-transform, discrete Fourier transform, fast Fourier transform algorithms, digital filter design, and other related topics. Students who have completed ECE 468A will not receive credit for this course. Prerequisite: ECE 355 with a grade of C or better, or consent of instructor. Project-based fee: $20 to help defray cost of equipment. Credit Hours: 3

ECE569 - Biomedical Instrumentation (Same as BME 538) Basic concept of Medical instrumentation, basic sensors and principles, amplifiers, biopotential electrodes, blood pressure and sound, measurement of respiratory system, chemical biosensors, Cellular measurements, Nervous system measurements, magnetic resonance imaging. Prerequisites: PHSL 410A or CHEM 444 or consent of instructor. Restricted to enrollment in ECE program. Lab fee: $45 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE570 - Principles of Communication Systems This course covers principles of communication systems. Topics include representation of signals and systems, amplitude modulation, angle modulation, probability theory and random processes for communication system designs, transition from analog to digital and pulse code/delta modulation, baseband digital transmission, digital band-pass transmission techniques, introduction to information theory and coding, wireless channel modeling, cellular systems and performance analysis. Lectures and laboratory projects. Prerequisites: ECE 315 and ECE 355 or consent of instructor. Students having passed ECE 478 are not eligible to enroll. Credit Hours: 3

ECE570A - Wireless Communication Systems This course covers fundamentals of wireless communication systems. Topics include wireless system architectures, channel modeling, introduction to cellular systems, digital modulation and multiple-access techniques, introduction to multiantenna techniques, performance analysis, wireless physical layer security, future trends in wireless communications. Prerequisites: ECE 315 and ECE 355 with a grade of C or better or consent of

instructor. Students who have completed ECE 471 will not receive credit for this course. Project-based fee: $20 to help defray cost of software and equipment. Credit Hours: 3

ECE571 - Advanced Wireless Communication This course covers advanced topics in wireless communications. Topics include wireless system architectures, wireless channel modeling, cellular systems and co-channel interference, advanced digital modulation and multiple-access techniques, massive MIMO, mm-wave communications, performance analysis, radio resource allocation and optimization, wireless physical layer security, enabling technologies for 5G. Restricted to enrollment in ECE program or consent of instructor. Project-based fee: $20 to help defray cost of software licenses. Credit Hours: 3

ECE572 - Neural Networks (Same as BME 572) Anatomy and physiology of the cerebral cortex, Feed-forward Networks, Linear Associator, Multilayer Perceptrons, Feedback Networks, Hopfield Networks, ART. Applications to pattern recognition, robotics, image processing, and speech processing. Optical and electronic implementations. Students who have taken BME 470 or ECE 470 cannot receive credit for this course. Prerequisite: MATH 305 with a C or better or consent of instructor. Credit Hours: 3

ECE573 - Field and Waves II Time-harmonic electromagnetic fields in dielectric and lossy media, transmission lines, antennas and resonators. Techniques include duality, image theory, reciprocity and integral equations. Boundary value problems solved for several frequently encountered symmetries. Prerequisite: ECE 477. Restricted to enrollment in ECE program. Credit Hours: 3

ECE574 - Nonlinear Optics Coupled-mode-analysis applied to nonlinear wave interactions, harmonic generation, parametric amplification, backward wave amplifiers, backward oscillation in laser systems, phase conjugation and multiple-wave mixing systems, Pockel and Kerr effects, and electro-optical modulations in optical communication systems. Prerequisite: ECE 375 or consent of instructor. Restricted to enrollment in ECE program. Credit Hours: 3

ECE575 - Antennas I Analysis, design, fabrication, measurement and CAD applied to basic antenna types. Fundamental parameters. Friis transmission equation. Impedance and pattern measurements. Resonant microstrip and wire antennas. Arrays and line sources. Lecture and laboratory. Students who have taken ECE 472 are ineligible to enroll. Prerequisite: ECE 375 or equivalent. Restricted to enrollment in ECE program. Project-based fee: $120 to help defray cost of software licenses. Credit Hours: 3

ECE575A - Cyber Security for Digital Health This course introduces students to cyber security for digital health applications. Introduction to cyber security and cyber-attack surface, cyber security for electronic health records, cyber security for medical information, security and identity based on characteristics of face recognition and fingerprint recognition, cyber security for networked medical devices and healthcare facilities, cyber security for wearable or implantable devices. Students who have competed ECE 475 will not receive credit for this course. Prerequisite: MATH 251 with a minimum grade of C- or consent of instructor. Credit Hours: 3. Credit Hours: 3

ECE576 - Numerical Electromagnetics Numerical solution of electromagnetic problems by methods that include finite element, integral equation, moment, spectral domain and finite difference. Examination of electromagnetic problems and their solutions in current literature. Prerequisite: ECE 573. Restricted to enrollment in ECE program. Credit Hours: 3

ECE577 - Antennas II Analysis, design and CAD of antennas. Numerical methods. Broadband, traveling-wave, frequency independent, electrically-small, aperture and microstrip antenna types. Prerequisite: ECE 472. Restricted to enrollment in ECE program. Credit Hours: 3

ECE578 - Digital Image Processing II Full-color image processing, image noise and degradation models, image restoration, inverse filtering, Wiener filtering, geometric transformations, image compression models, error-free compression, lossy compression, compression standards, dilation and erosion, opening and closing operations, morphological filtering, boundary descriptors, regional descriptors, principal components, vision-based pattern recognition. Prerequisite: ECE 558. Restricted to enrollment in ECE program. Credit Hours: 3

ECE579 - Microwave Engineering II Analysis and design of passive and active devices at microwave frequencies. Topics include: power dividers, couplers, filters, ferrite devices, noise, noise effects in

detectors, mixers, modulators, amplifier and oscillator design, and an introduction to microwave systems. Prerequisite: ECE 479. Restricted to enrollment in ECE program. Credit Hours: 3

ECE579A - Terahertz Devices and Applications THz band. Interaction of THz with matter, THz system components. Generation and detection of THz signals: photoconductive antenna, optical rectification, electro-optical sampling, quasi-phase-matching crystals, photo-mixers. Terahertz quantum cascade lasers: intersubband transitions, quantum dots photodetector, thermal detectors, device design and modeling. THz in 2D materials: Graphene and TMDs. Terahertz optics: metamaterials, photonic crystals, plasmonics. THz imaging: tomography, medical diagnostics. Spectroscopy: atoms, molecules, nanostructures. Nondestructive evaluation and security checks. THz wireless systems and THz in space. Prerequisite: familiarity with physics of semiconductor devices (e.g., ECE 447 or ECE 423 or PHYS 425 with a grade of C or better, or instructor consent). Credit Hours: 3

ECE580 - Seminar Study and formal presentation by students of selected research in electrical and computer engineering. Restricted to students in the graduate program in Electrical and Computer Engineering. Special approval needed from the instructor. Credit Hours: 1

ECE581 - Wind and Solar Energy Power Systems The course introduces students to wind and solar energy power systems. Planning of wind generation; and operation of wind generators, mechanical and electrical design, power conditioning, control and protection. Planning, operation and design of electric solar plants; power conditioning, control and protection. Students who have taken ECE 481 are ineligible to enroll. Credit Hours: 3

ECE582 - Power Electronics This course offers a comprehensive overview of power electronics devices and circuits, covering both foundational and advanced concepts. The primary objective is to equip students with design methodologies and analytical tools crucial for the efficient conditioning and management of electrical power. Topics include semiconductor power materials and devices, power converters, converter dynamics and control, switched mode power supply, and the use of machine learning for design optimization. Real-world applications in clean energy, electrification, electric vehicles, computing, display, and solid-state lighting will be covered. Fabrication and packaging of power electronics modules will also be discussed. Students will also engage in hands-on design projects using industry-standard TCAD software. Students who have received credit for ECE 482 will not receive credit for this course. Prerequisite: ECE 345 with a grade of C or better, or instructor consent. Project/design fee: $65 to help defray cost of software licenses. Credit Hours: 3

ECE583 - Electric Drive Systems Course content is roughly 1/3 power electronics, 1/3 applied control and 1/3 electric machinery and focuses on analysis, simulation, and control design of electric drive based speed, torque, and position control systems. Advanced topics depending on the semester are taught. Students who have taken ECE 483 are ineligible to enroll. Project-based fee: $65 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE584 - Electric and Hybrid Vehicles This course provides a comprehensive overview of modern all electric vehicles. It also touches on hybrid and plug-in hybrid vehicles. Topics include design analysis of vehicle components, trends in state-of-the-art power electronics materials, devices, and converters, battery and energy storage technologies, and the interaction of vehicles with the power grid. Key technical aspects with appropriate level of mathematical formulations and engineering design guidelines will be discussed. Essential features of autonomous driving system architecture and the associated hardware and software requirements will also be covered. Using industry-standard TCAD design software, students will work on a comprehensive design project or research paper on a topic of interest such as: i) emerging electric motors, ii) high-performance lithium ion batteries, iii) high-breakdown voltage power electronic converters. Students who have completed ECE 484 will not receive credit for this course. Prerequisite: Familiarity with electronic devices and circuits and electric motors or instructor consent. Project/design fee: $65 to help defray cost of software licenses. Credit Hours: 3

ECE585 - Power Systems Stability and Control Fundamentals of power system stability, synchronous machine modeling and simulation, transient and small signal stability, control and protection, power system stabilizers, voltage stability, voltage collapse, concepts and devices of flexible ac transmission, mid-term and long-term stability. Credit Hours: 3

ECE586 - Computational Methods in Power Systems The course covers advanced methods for the computation and analysis of power systems. Topics: circuit graph theory and network matrices,

computation of electromagnetic transients, computation of power flows and faults, computation of system stability, stochastic methods in power systems, load forecasting, state estimation, unit dispatch. The course uses power system software. Lecture. Restricted to enrollment in the ECE program. Credit Hours: 3

ECE586A - Clean Electric Energy History and future of energy resources and their use as a component of electrical systems. Fossil fuels and renewable energy sources. Environmental and economical impacts of various energy sources. Electric energy generating plants and distributed generation. Design of hybrid renewable energy systems. Students who have completed ECE 486 will not receive credit for this course. Prerequisite: ECE 385 with a grade of C or better, or consent of instructor. Credit Hours: 3. Credit Hours: 3

ECE587 - Modern Power Systems Operation This course provides students with a comprehensive picture of the techniques used in modern power systems operation. The course introduces central "terminal" characteristics for thermal and hydroelectric power generation systems, along with new optimization techniques for tackling "real-world" power systems operating problems. The topics include: analysis of different bidding strategies in competitive electricity markets, prediction of load and price, analysis of power systems security, different methods of optimal power flow, analysis of power systems uncertainty and reliability, economic dispatch, and unit commitment analysis. Project-based fee: $65 to help defray cost of software licenses and equipment. Credit Hours: 3

ECE587A - Power Systems Analysis Modeling and analysis of electric power systems. Topics covered: AC power, generators, power transformers, transmission line parameters and steady state operation, computation of power flows. The course uses power system analysis software. Students who have completed ECE 487 will not receive credit for this course. Prerequisite: ECE 385 with a grade of C or better, or consent of instructor. Credit Hours: 3. Credit Hours: 3

ECE588 - Power System Engineering The course covers topics involving the design and operation of a power system. Topics: symmetrical and unsymmetrical power system faults, power system protection design, transient stability of power generators, power system economic operation, power system control, transient operation of transmission lines. The course uses power system software. Lecture. Students who have taken ECE 488 are ineligible to enroll. Credit Hours: 3

ECE589 - Electric Power Distribution Design of primary and secondary distribution networks. Load characteristics. Voltage regulation. Metering techniques and systems. Protection of distribution systems. Special topics related to power distribution. Students who have taken ECE 489 are ineligible to enroll. Prerequisite: ECE 235. Credit Hours: 3

ECE592 - Special Investigations in Electrical Engineering Individual advanced projects and problems selected by student or instructor. Restricted to graduate standing. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593A - Advanced Topics in Electrical Engineering-Antennas and Propagation Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593B - Advanced Topics in Electrical Engineering-ASIC Design Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593C - Advanced Topics in Electrical Engineering-Communications Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593D - Advanced Topics in Electrical Engineering-Computer Architecture Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering.

This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593E - Advanced Topics in Electrical Engineering-Control Systems Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593F - Advanced Topics in Electrical Engineering-Design Automation Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593G - Advanced Topics in Electrical Engineering-Digital Design Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593H - Advanced Topics in Electrical Engineering-Digital Testing and Verification Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593I - Advanced Topics in Electrical Engineering-Electromagnetic Fields and Waves Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593J - Advanced Topics in Electrical Engineering-Embedded Systems Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593K - Advanced Topics in Electrical Engineering-Medical Imaging Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593L - Advanced Topics in Electrical Engineering-Mixed-Signal Testing and Design Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593M - Advanced Topics in Electrical Engineering-Nanotechnology Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593N - Advanced Topics in Electrical Engineering-Network Systems Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593O - Advanced Topics in Electrical Engineering-Photonics Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593P - Advanced Topics in Electrical Engineering-Physical Design Automation Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering.

This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593Q - Advanced Topics in Electrical Engineering-Power Electronic Converters and Drive Systems Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593R - Advanced Topics in Electrical Engineering-Power Quality Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593S - Advanced Topics in Electrical Engineering-Power System Control and Protection Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593T - Advanced Topics in Electrical Engineering-Renewable Energy Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593U - Advanced Topics in Electrical Engineering-RF and Microwave Systems Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593V - Advanced Topics in Electrical Engineering-Signal Processing Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593W - Advanced Topics in Electrical Engineering-Software Engineering Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE593X - Advanced Topics in Electrical Engineering-Wireless Systems Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor. Credit Hours: 1-3

ECE595 - Communication Skills for Engineering Graduate Students This course prepares graduate engineering students to communicate technical information to various audiences and for various purposes. Principles and strategies are applied to theses, dissertations, scholarly presentations, and other engineering documents such as lab reports, user manuals, business correspondences, job application materials, and engineering ethics. Research tools and software programs prepare students to deliver oral presentations on current engineering topics. Restricted to graduate standing. Does not count toward the hours required for graduation in the ECE program. Restricted to enrollment in ECE program. Credit Hours: 3

ECE596 - Principles of Biomedical Engineering (Same as BME 596) Principles of biomechanics, biomaterials, electrophysiology, modeling, instrumentation, biosignal processing, medical imaging, and biomedical optics. Professional moral and ethical issues in biomedical research and development. Students who have taken ECE 460 are ineligible to enroll. Prerequisite: MATH 250 with a grade of C or better or consent of instructor. Credit Hours: 3

ECE599 - Thesis Credit Hours: 1-6

ECE600 - Doctoral Dissertation Dissertation research. Hours and credit to be arranged by director of graduate studies. Graded S/U only. Restricted to Admission to PhD program in Electrical and Computer Engineering. Credit Hours: 1-16

ECE601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Electrical and Computer Engineering Faculty

Ahmed, Shaikh S., Professor, Ph.D., Arizona, 2005; 2007. Nanotechnology, semiconductor devices and circuit design, simulation and characterization.

Anagnostopoulos, Iraklis, Associate Professor, Ph.D., National Technical University of Athens, 2014; 2015. Many-core architectures, run-time resource management, embedded systems.

Aruma Baduge, Gayan, Associate Professor, University of Alberta, 2013; 2016. Communications theory, wireless communications, massive MIMO systems, millimeter-wave communications, cooperative relay networks, wireless energy harvesting for IoTs, physical-layer security.

Asrari, Arash, Assistant Professor, Ph.D., University of Central Florida, 2015; 2017. Power systems operation and planning, power systems optimization, smart grid.

Chen, Kang, Associate Professor, Ph.D., Clemson University, 2014; 2015. Software-defined networking (SDN), network function virtualization (NFV), vehicular networks, mobile opportunistic/ad hoc networks.

Chen, Ying (Ada), Associate Professor, Ph.D., Duke, 2007; 2007. Biomedical imaging, image reconstruction, digital tomosynthesis, image quality analysis, signal and image processing, simulation and computing.

Chilman, Bae, Assistant Professor, Ph.D., Pennsylvania State University, 2009; 2019. Bioelectrical engineering, neuroscience, mechanobiology.

Chowdhury, Farhan, Associate Professor, Ph.D., University of Illinois at Urbana-Champaign, 2011; 2015. Mechanobiology, single-molecule cell mechanics, biomaterials.

Haniotakis, Themistoklis, Associate Professor, Ph.D., University of Athens, 2008; 2013. Digital VLSI design and test, RF IC design and test, low power VLSI design, and fault-tolerant systems.

Kagaris, Dimitrios, Professor, Ph.D., Dartmouth College, 1994; 1995. VLSI design automation, digital circuit testing, communications networks, biostatistics, bioinformatics.

Komaee, Arash, Associate Professor, Ph.D., University of Maryland, College Park, 2008; 2015. Control systems, microrobotics, signal processing, estimation theory.

Lu, Chao, Associate Professor, Ph.D., Purdue University, 2012; 2015. VLSI system design, device-circuit co-design, 3D IC.

Qin, Jun, Associate Professor, Ph.D., Duke University, 2008; 2012. Sensors and instrumentation, data acquisition, medical devices, therapeutic ultrasound, haptics.

Sayeh, Mohammad R., Professor, Ph.D., Oklahoma State University, 1985; 1986. Neural networks, optical computing, image processing, stochastic modeling, quantum electronics.

Tragoudas, Spyros, Professor and Director, Ph.D., University of Texas at Dallas, 1991; 1999. Design and test automation for VLSI, embedded systems, computer networks.

Wang, Haibo, Professor, Ph.D., University of Arizona, 2002; 2002. Bioelectronics, biosensors.

Weng, Ning, Professor, Ph.D., University of Massachusetts at Amherst, 2005; 2005. High performance routers, network processors, system-on-a-chip, computer architectures.

Emeriti Faculty

Botros, Nazeih M., Professor, Emeritus, Ph.D., University of Oklahoma, 1985; 1985.

Daneshdoost, Morteza, Professor, Emeritus, Ph.D., Drexel University, 1984; 1984.

Galanos, Glafkos D., Professor, Emeritus, Ph.D., University of Manchester, England, 1970; 1987.

Gupta, Lalit, Professor, Emeritus, Ph.D., Southern Methodist University, 1986; 1986

Hatziadoniu, Konstantine, Professor, Emeritus, Ph.D., West Virginia University, 1987; 1987.

Osborne, William, Professor, Emeritus, Ph.D., New Mexico State University, 1970; 2005.

Pourboghrat, Farzad, Professor, Emeritus, Ph.D., University of Iowa, 1984; 1984.

Viswanathan, Ramanarayanan, Professor, Emeritus, Ph.D., Southern Methodist University, 1983; 1983.

Engineering

The College of Engineering, Computing, Technology, and Mathematics offers an interdisciplinary Doctor of Philosophy (Ph.D.) in Engineering Science at the college level. This program supports a cooperative program with SIU Edwardsville. To support graduate programs, the College has well equipped laboratories and computer facilities that are housed in a modern engineering complex. Additional research opportunities and funding are provided through the Advanced Energy Institute, the Materials Technology Center, and the Office of Sponsored Projects Administration.

For information on additional doctoral degrees offered in the college, refer to the program pages for:

- Computer Science
- Electrical and Computer Engineering
- Mathematics

Doctor of Philosophy (Ph.D.) in Engineering Science

The Doctor of Philosophy degree in Engineering Science is available for two concentrations:

Electrical and Computer Engineering Concentration

Course offerings and research activities include: antennas, circuits and systems theory, electromagnetics, robust and adaptive control, robotics, embedded control, MEMS, nanoelectronics, energy conversion, power systems, power electronics, pattern recognition, image processing, biomedical engineering, neural networks, optical computing, stochastic modeling, wireless communications, detection and estimation theory, communication networks, mobile ad hoc networks, sensor networks, digital systems, programmable ASICs design, bioengineering, computer architecture, CMOS VLSI, fault tolerance, mixed signal testing and design, low power system design, hardware/software co-design, synthesis and verification of digital systems, physical design automation, and VLSI testing.

Industrial and Quality Engineering Concentration

Course offerings and research activities include: quality assurance, statistical process control, six sigma, lean enterprise, service quality, reliability analysis, quality function deployment, design of experiments, project management, human safety, risk management, management of information technology resources, energy management and conservation.

Cooperative Ph.D. Program

The College of Engineering, Computing, Technology, and Mathematics at SIU-Carbondale and SIU-Edwardsville have entered into a cooperative Ph.D. program in Engineering Science. Additional information may be obtained at https://siue.edu/engineering/programs-departments/doctoral.shtml.

Admission and Retention

Admission to the doctoral program requires a master's degree in engineering or its equivalent. Applicants for the doctoral degree in Engineering Science must meet Graduate School admission requirements and be approved by the college graduate studies committee. This program requires a $65 application fee that must be submitted with the application for Admission to Graduate Study in Engineering Science.

In addition to Graduate School and other college requirements, the committee ordinarily requires a grade point average of 3.25 (4 point scale) in graduate level work. Applicants are required to submit GRE scores in support of their application for admission. Except for persons from English-speaking countries, international students are required to have a minimum TOEFL score of 550 (paper score) or 213 (computer score) or 80 (internet score) or an IELTS score of 6.5 or higher for admission.

Admission to the doctoral program also requires the identification of an initial graduate adviser for each student. For students seeking admission to the Cooperative Ph.D. in Engineering Science Program, both an initial SIU-Edwardsville advisor along with an initial SIU-Carbondale co-advisor must be identified. This advisor will be responsible with the student for planning the student's course work. The college graduate studies committee will be kept informed of the student's program of study.

Retention is governed by the rules of the Graduate School. Students should avoid the accumulation of incomplete grades. No student with more than two incomplete grades can be awarded a graduate assistant appointment, and a student holding a graduate assistant appointment is subject to having the appointment terminated upon acquiring two or more incomplete grades.

Accelerated Entry

After at least two semesters in residence in an engineering M.S. program and after completing a minimum of 18 credit hours of approved coursework with a minimum GPA of 3.75, a student may request for an accelerated entry into the Ph.D. in Engineering Science program. Such entry is permitted only to superior students who have exhibited evidence that they are prepared to begin the research activities of doctoral-level study. In addition, the student must have GRE scores that are at or above the 50th percentile for both verbal reasoning component and analytical writing component and 80th percentile for the quantitative reasoning component or a combined total percentile score of 180 or higher. In case of a domestic student, an undergraduate GPA of 3.5 or higher is also a requirement. For an international student, a minimum TOEFL score of 550 (paper score) or an IBT score of 80 or an IELTS score of 6.5 is an additional requirement. In exceptional cases, to substitute for the abovementioned GRE and TOEFL score requirements, the student's current faculty advisor, with the approval of the school director, may submit a letter of recommendation for their student's accelerated entry into the Ph.D. in Engineering Science program.

The student, having an accelerated entry into the Ph.D. in Engineering Science program, may not write a M.S. Thesis. In addition, six credit hours of course work of 500-level completed prior to his/her entry into the Ph.D. in Engineering Science program may be counted toward the Ph.D. course requirement. In the rare event that the student getting an accelerated entry into the Ph.D. in Engineering Science program fails to pass the Ph.D. qualifying exam in two attempts, they will be allowed to complete a M.S. degree in their respective discipline.

Curriculum

A minimum of 26 credit hours of course work, including two credit hours of seminar, and 24 credit hours of dissertation research is required. The course work must be completed in two areas: area of concentration and program core. A student must complete a minimum of 15 credit hours of course work relevant to an area of concentration. The course work in the area of concentration is intended to provide depth in the student's area of research. The program core consists of 11 credit hours of course work. A dissertation must be completed in the student's area of research interest with the approval of the dissertation committee.

Program Core

The program core consists of 11 credit hours of course work:

- Six credit hours in math

- Three credit hours in engineering or science
- Two credit hours of seminar

The math courses to choose from are: all 500, except MATH 511, MATH 513A-I, and MATH 516A, MATH 516B.

The engineering courses to choose from are: ENGR 530 Engineering Data Acquisition: Theory and Practice, ENGR 540 Design of Engineering Experiments, ENGR 545 Advanced Numerical Methods in Engineering, ENGR 521 Probability and Stochastic Processes for Engineers.

The science course could be any 500-level course in Computer Science, Physics, Chemistry, or Geology as approved by the student's advisor.

The seminar course, ENGR 580, must be taken in two separate semesters, each time as one credit hour course.

It is recommended that the seminar classes be taken after the initiation of doctoral research or after candidacy is granted. Guide for Core and Concentration Courses:

- Special Investigation course can be taken under ENGR 590—Special Investigations in Engineering Science, and only three credit hours can be counted towards the minimum required 26 credit hours of course work.
- Transfer credit will normally be given for some of the graduate level courses suitable to the program upon review by the college Ph.D. in Engineering Science Committee. Proficiency examinations may be authorized by the committee for areas in which questions of transfer credit arise. No credit will be given for industrial experience. A maximum of six credit hours of course work can be transferred in all cases due to residency requirement, which states that every student must complete at least 24 credit hours of approved course work at SIUC prior to taking the candidacy examination. Of the 24 credit hours of dissertation research (ENGR 600) only six credit hours can be completed before candidacy.
- A student transferring credits from a master's program must have earned those credits over and above the required course work to obtain the M.S. degree in their institution. Credit cannot be transferred from master degrees obtained from international institutions.

Candidacy

A Ph.D. in Engineering Science student must satisfy all Graduate School requirements to become a candidate. Acceptance to Ph.D. in Engineering Science candidacy is contingent upon the completion of all courses, excluding the seminar, with *A* or *B* grades and successful completion of a written and an oral examination in the student's area of concentration.

The examination in the area of concentration is organized and administered by the student's academic advisor. The candidacy examination committee consists of at least three faculty chosen by the advisor in consultation with the student. The committee has to be approved by the program director before it conducts the examination. Normally, the examination can be conducted at any time during the year when classes are in session. In the written examination, the student is tested in at least two major topics of the area of concentration with an appropriate number of questions prepared by the members of the student's candidacy committee. Each student has to score at least 70 percent in each major topic test in order to successfully complete the written part of the candidacy examination. If a student fails to pass any topic test of the written examination, a second chance is given for the failed topic test. If a student does not successfully complete the written examination after two attempts, he/she will not be accepted to candidacy in the Ph.D. in Engineering Science program. A student is qualified to take the oral examination only after successfully completing the written examination.

The oral examination is conducted within two weeks of the successful completion of the written examination. In the oral examination, the student is tested again in the area of concentration by the candidacy committee members. If a student fails to pass the oral examination in the first attempt, a second chance is given. If a student does not successfully complete the oral examination after two attempts, he/she will not be accepted to candidacy in the Ph.D. in Engineering Science program.

After the completion of the concentration examination, copies of the graded tests, along with signoff sheets for both the written and oral examinations are submitted to the Director of the Ph.D. in Engineering Science program.

Dissertation

A dissertation must be written under the direction or codirection of an engineering faculty member and approved by a dissertation committee consisting of a minimum of five members, one of whom must be from outside the College of Engineering, Computing, Technology, and Mathematics. For students enrolled in the cooperative Ph.D. in Engineering Science program, the committee will be made up of at least six members, three SIUC faculty members and three SIUE faculty members, with a chair from SIUE and a co-chair from SIUC.

The dissertation adviser must be chosen by the end of the student's first academic year. The dissertation committee should be formed after successful completion of the candidacy examination. The members of this committee need not be the same as the members of the candidacy examination committee.

A dissertation research proposal must be approved by the dissertation committee. Candidates will be required to present an acceptable dissertation describing original research performed with minimal supervision.

Dissertation approval is based on a successful oral defense of the dissertation research and approval of the dissertation. This requires approval of at least 80 percent of the dissertation committee.

Graduation

1. All requirements of the Graduate School must be met.
2. A minimum of 26 credit hours of doctoral level course work must be completed with a minimum grade point average of 3.25.
3. An acceptable dissertation must be completed within five years after admission to candidacy or the student will be required to repeat the candidacy examinations.

Engineering Courses

ENGR521 - Probability and Stochastic Processes for Engineers Axioms of probability, random variables and vectors, joint distributions, correlation, conditional statistics, sequences of random variables, stochastic convergence, central limit theorem, stochastic processes, stationarity, ergodicity, spectral analysis, and Markov processes. Restricted to graduate student status. Project-based fee: $20 to help defray cost of software licenses. Credit Hours: 3

ENGR522 - Intellectual Property and Commercialization (Same as BA 537, LAW 633) Course teaches substance & practice of commercializing products of scientific & technical research. Provides a basic understanding of intellectual property laws in commercialization context & how those laws are applied in various fields of technology. Will learn how to value intangible assets, taking into account their commercial potential & legal status. Course will consider the legal & business issues surrounding marketing of products of research. Will prepare & negotiate license agreements. Will analyze legal & business issues surrounding whether & how to enforce intellectual property rights. Content & methods of course delivery & evaluation has been approved for provision by distance education. Credit Hours: 3

ENGR530 - Engineering Data Acquisition: Theory and Practice (Same as ECE 530) Theory of data acquisition and measurement systems. Criteria for selection of data acquisition hardware and software, instruments, sensors and other components for scientific and engineering experimentation. Methods for sampled data acquisition, signal conditioning, interpretation, analysis, and error estimation. Lab fee: $60 to help defray cost of software licenses and equipment. Credit Hours: 3

ENGR540 - Design of Engineering Experiments Planning of experiments for laboratory and field studies, factorial designs, factorial designs at two levels, fractional factorial designs, response surface methods, mixture designs. Prerequisite: MATH 483, or equivalent, or consent of instructor. Credit Hours: 3

ENGR545 - Advanced Numerical Methods in Engineering Engineering applications of linear and nonlinear equations, eigenvalue problems, interpolation and approximating functions and sets of data,

numerical solutions of ordinary and partial differential equations. Prerequisite: ENGR 222 or equivalent, ENGR 351 or equivalent, and MATH 305 or consent of instructor. Credit Hours: 3

ENGR580 - Seminar Study and presentation of research topics from students' own specialty areas within engineering and science. Graded S/U only. Restricted to enrollment in the Ph.D. in engineering science program or consent of instructor. Credit Hours: 1

ENGR590 - Special Investigations in Engineering Science Investigation of individual advanced projects and problems selected by student or instructor. Restricted to admission into Ph.D. program in engineering science. Credit Hours: 1-3

ENGR592 - Engineering Cooperative Education Supervised work experience in industry, government or in a professional organization. Work must be directly related to student's program of study. Student works with on-site supervisor and faculty advisor. Activity report is required from the student and performance report is required from the employer. Enrollment requires Chair's approval. Hours do not count toward degree requirements. Mandatory Pass/Fail. Restricted to graduate standing. Credit Hours: 1-3

ENGR593 - Special Topics in Engineering Studies of various special topics in the area of engineering science. Special approval needed from the instructor. Credit Hours: 3

ENGR600 - Doctoral Dissertation Dissertation research. Hours and credit to be arranged by director of graduate studies. Graded S/U only. Restricted to admission to Ph.D. in engineering science program. Credit Hours: 1-16

ENGR601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

ENGR699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Engineering Faculty

Civil, Environmental, and Infrastructure Engineering Faculty

Fakhraei, Habibollah, Assistant Professor, Ph.D., Syracuse University, 2016; 2019. Environmental engineering, environmental modeling, biogeochemistry, aquatic chemistry, water quality modeling, air pollution effects, GIS, geostatistical analysis, hydrology, numerical optimization.

Kalra, Ajay, Associate Professor, Ph.D., University of Nevada, 2011; 2015. Hydraulics and water resources engineering, hydro-climatology, urban sustainability, water-energy-climate nexus, probabilistic forecasting and downscaling, surface water and groundwater interactions.

Kolay, Prabir, Associate Professor, Ph. D., Indian Institute of Technology, IIT Bombay, 2001; 2010. Geotechnical engineering, soil stabilization, utilization of recycled concrete aggregate (RCA) and coal ash, unsaturated soil, thermal properties of soil, and numerical modeling.

Liu, Jia, Associate Professor, Ph.D., University of Houston, 2014; 2015. Environmental engineering, renewable energy production, microbial fuel cell, water/wastewater treatment and groundwater/soil remediation, material development for energy safety and environmental pollution detection.

Puri, Vijay K., Professor, Ph.D., University of Missouri-Rolla, 1984; 1986. Geotechnical engineering, soil dynamics, machine foundations, liquefaction of soils.

Sen, Debarshi, Assistant Professor, Civil Engineering, Ph.D., Rice University, 2018; 2022. Structural dynamic systems, infrastructure monitoring and resilience, applications of statistical and machine learning in monitoring, regional fragility assessment, seismic response control.

Shin, Sangmin, Assistant Professor, Civil Engineering, Ph.D., Korea Advanced Institute of Science and Technology (KAIST), 2015; 2021. Integrated water resources engineering, cyber-physical systems,

hydroinformatics, socio-environmental hydrology, system resilience and sustainability, water-energy-food nexus, systems thinking and optimization.

Tezcan, Jale, Professor and Interim Director, Ph.D., Rice University, 2005; 2005. Non-linear structural behavior, neural networks In system identification and structural control, rehabilitation, and retrofitting of structures damaged by earthquakes.

Warwick, John J.,Professor, Civil Engineering, Ph.D., The Pennsylvania State University, 1983; 2011. Numerical modeling of the transport and fate of contaminants in surface water systems, impacts of nutrients on stream algal growth, transport of sediment and associated mercury in fluvial systems, and simulating the effects of non-point source pollutants on instream water quality.

Electrical, Computer, and Biomedical Engineering Faculty

Ahmed, Shaikh S., Professor, Ph.D., Arizona, 2005; 2007. Nanotechnology, semiconductor devices and circuit design, simulation and characterization.

Anagnostopoulos, Iraklis, Associate Professor, Ph.D., National Technical University of Athens, 2014; 2015. Many-core architectures, run-time resource management, embedded systems.

Aruma Baduge, Gayan, Associate Professor, University of Alberta, 2013; 2016. Communications theory, wireless communications, massive MIMO systems, millimeter-wave communications, cooperative relay networks, wireless energy harvesting for IoTs, physical-layer security.

Asrari, Arash, Assistant Professor, Ph.D., University of Central Florida, 2015; 2017. Power systems operation and planning, power systems optimization, smart grid.

Chen, Kang, Associate Professor, Ph.D., Clemson University, 2014; 2015. Software-defined networking (SDN), network function virtualization (NFV), vehicular networks, mobile opportunistic/ad hoc networks.

Chen, Ying (Ada), Associate Professor, Ph.D., Duke, 2007; 2007. Biomedical imaging, image reconstruction, digital tomosynthesis, image quality analysis, signal and image processing, simulation and computing.

Chilman, Bae, Assistant Professor, Ph.D., Pennsylvania State University, 2009; 2019. Bioelectrical engineering, neuroscience, mechanobiology.

Haniotakis, Themistoklis, Associate Professor, Ph.D., University of Athens, 2008; 2013. Digital VLSI design and test, RF IC design and test, low power VLSI design, and fault-tolerant systems.

Kagaris, Dimitrios, Professor, Ph.D., Dartmouth College, 1994; 1995. VLSI design automation, digital circuit testing, communication networks.

Komaee, Arash, Associate Professor, Ph.D., University of Maryland, College Park, 2008; 2015. Control systems, microrobotics, signal processing, estimation theory.

Lu, Chao, Associate Professor, Ph.D., Purdue University, 2012; 2015. VLSI system design, device-circuit co-design, 3D IC.

Qin, Jun, Associate Professor, Ph.D. Duke University, 2008; 2012. Sensors and instrumentation, data acquisition, medical devices, therapeutic ultrasound, haptics.

Sayeh, Mohammad R., Professor, Ph.D., Oklahoma State University, 1985; 1986. Neural networks, optical computing, image processing, stochastic modeling, quantum electronics.

Tragoudas, Spyros, Professor and Director, Ph.D., University of Texas at Dallas, 1991; 1999. Design and test automation for VLSI, embedded systems, computer networks.

Wang, Haibo, Professor, Ph.D., University of Arizona, 2002; 2002. Mixed-signal VLSI design and testing, digital VLSI, VLSI design automation.

Weng, Ning, Professor, Ph.D., University of Massachusetts at Amherst, 2005; 2005. High performance routers, network processors, system-on-a-chip, computer architectures.

Mechanical, Aerospace, and Materials Engineering Faculty

Chowdhury, Farhan, Associate Professor, Ph.D., University of Illinois at Urbana-Champaign, 2011; 2015. Biomedical Engineering, stem cell biology, regenerative medicine, biomedical and molecular mechanism of tumorigenic cancer cells.

Chu, Tsuchin P., Professor and Director of the Engineering Science Ph.D. Program, Ph.D., University of South Carolina, 1982; 1990. Non-destructive evaluation, biomedical engineering, FEA, carbon composites, CAD/CAM, machine vision, optical methods in experimental mechanics, image processing and analysis.

Eslamiat, Hossein, Assistant Professor, Mechanical Engineering, Ph.D., Syracuse University, 2020; 2020. Nonlinear dynamics, control and estimation for underactuated systems.

Esmaeeli, Asghar, Professor, Ph.D., The University of Michigan, 1995; 2005. Large scale computations of multiphase flows, phase change phenomena, and electrohydrodynamics.

Filip, Peter, Professor, Ph.D., Technical University Ostrava, D.Sc., Academy of Sciences, Prague, Czech Republic, 1989. 1989; 1999. Materials science and engineering nanotechnology, friction science and applications, biomaterials, shape memory, alloys and advanced composite materials.

Harpalani, Satya, Professor and Associate Dean, Ph.D., University of California, Berkeley, 1984; 2002. Unconventional gas production, storage and transport in deep rocks; permanent carbon storage.

Jung, Sangjin, Assistant Professor, Ph.D., Hayang University, 2012; 2021. Additive manufacturing, product design.

Koc, Rasit, Professor, Ph.D., Missouri University Science and Technology, 1989; 1994. Advanced materials and composites processing and characterization.

Mathias, James A., Associate Professor, Ph.D., Ohio State University, 2001; 2003. Nanotechnology, microchannels, heat transfer, thermodynamics, energy utilization.

Mondal, Kanchan, Professor and Director, Ph.D., SIUC, 2001; 2006. Electrochemistry, energy from coal, catalysis, reactor systems and design.

Nilufar, Sabrina, Assistant Professor, Ph.D., University of Illinois, Champaign, 2014. Advanced materials, covetics and reinforced composite materials processing and characterization, phase transformation, corrosion resistance, and thermal and electrical properties for aerospace, military armors, cardiovascular stents application, and biomedical implants for orthopedic application.

Nsofor, Emmanuel C., Professor, Ph.D., Mississippi State University, 1993; 1999. Heat transfer, advanced energy systems, renewable energy sources, computational fluid dynamics (CFD).

Suni, Ian I., Professor and Director of the Materials Technology Center, Ph.D., Harvard University, 1992; 2013. Application of electrochemistry and electrochemical engineering to technology advancement in thin film growth and dissolution, including both photovoltaic thin films and ULSI materials, electrochemical biosensors, including the use of electrochemical impedance spectroscopy (EIS) for detecting antibody-antigen recognition, and nanotechnology, including the use of nanoporous template materials for alternative energy development and biosensing.

Swift, Geoffrey, Assistant Professor, Ph.D., California Institute of Technology, 2004; 2020. Advanced batteries and battery materials, mechanics of materials, ceramic materials.

SIU Edwardsville Faculty

Benjankar, Rohan, Associate Professor, Ph.D., University of Idaho, 2009. Water resources engineering and management: interaction between hydraulics, hydrology and ecosystems.

Celik, Serdar, Professor, Ph.D., Southern Illinois University Carbondale, 2007. Renewable energy, energy efficiency, green roofs, HVAC.

Chen, Xin, Professor, Ph.D., Purdue University, 2009. Operations research.

Cho, Sohyung, Professor, Ph.D., Pennsylvania State University, 2000. Manufacturing automation and integration, robotics, PC/PLC based control, CAD/CAM/CIM, machine vision, manufacturing system control and complexity analysis, production planning/scheduling, data mining/machine learning, system performance evaluation, biomanufacturing**,** automation of allograft machining, surgical skill assessment, cryogenics, design of special machines.

Dabiri, Arman, Assistant Professor, Ph.D., University of Arizona, 2018. Dynamics, control and optimization of dynamical systems with nonlocal operators, Multi-agent systems, Robotics.

Darabi, Jeff, Professor and Director of Cooperative Ph.D. Program, Ph.D., University of Maryland, 2000. MEMS and micro/nanofluidics, biomicrofluidics, nanoengineered energy and thermal systems, multiphysics modeling (coupled fluid, electromagnetic, and thermal fields).

Elsisi, Alaaeldin (Alaa), Assistant Professor, Ph.D., University of Missouri, 2016. Fatigue and fracture of steel structures and bridges, progressive failure of composite materials and structures, numerical and computational methods, and behavior of the structure under extreme loads.

Fries, Ryan, Professor, Ph.D., P.E., Clemson University, 2007. Transportation engineering: intelligent transportation systems.

Gordon, Chris, Professor and Associate Dean, Ph.D., Carnegie Mellon University, 2006. Construction engineering and management, construction automation, artificial intelligence.

Gu, Keqin, Professor, Ph.D., Georgia Institute of Technology, 1988. Robust control, robotics, and timed delayed systems, control of flexible structures, and nonlinear dynamic systems.

Huang, Jianwei, Associate Professor, Ph.D., Syracuse University, 2010. Structural engineering.

Karacal, Cem, Professor and Dean, Ph.D., Oklahoma State University, 1991. Operations research and optimization, quality assurance, computer simulation modeling and analysis.

Kaur, Amardeep, Associate Professor, Ph.D., Missouri University of Science and Technology, 2014. Optical Fiber Sensors, Sensors and Instrumentation for Applications in Harsh Environments, Structural Health Monitoring.

Klingensmith, Jon, Associate Professor, Ph.D., Case Western Reserve University, 2003. Digital Signal Processing and Biomedical Imaging.

Ko, Hoo Sang, Associate Professor, Ph.D., Purdue University, 2010. Data analytics and machine learning for intelligent systems, modeling and predictive control of artificial pancreas systems, collaborative control of manufacturing & service systems with IT/IoT, statistics, design and analysis of experiments, and simulation.

Kweon, Soondo, Associate Professor, Ph.D., University of Illinois at Urbana-Champaign, 2009. Computational solid mechanics, crystal plasticity, ductile fracture, computational material science.

LeAnder, Robert W., Associate Professor, Ph.D., University of Illinois at Chicago, 2002. Bioengineering systems.

Lee, Felix, Professor, Ph.D., University of Michigan, 1989. Computer Simulaton & Operations Research, CAD/CAM/CAE and Applications of 3D Modeling for Productivity Improvements, Design and Operation of Advance Manufacturing Systems, Continuous Quality Improvements.

Lotfi, Nima, Associate Professor, Ph.D., Missouri University of Science and Technology, 2016. Control and estimation theory and applications in Alternative and Renewable Energy Systems, Mechatronics, Electrified and Autonomous Transportation, Robotics, Characterization and electrochemical modeling of batteries, Tradtional and electrochemical model-based battery management system design.

Lozowski, Andy G., Professor, Ph.D., University of Louisville, 1999. Analog and digital electronics, power electronics.

Luo, Albert, Professor, Ph.D., University of Manitoba, 1996. Discontinuous discrete dynamical systems, periodic flows to chaos in time-delayed nonlinear systems, bifurcation trees of periodic flows to chaos in nonlinear systems, synchronization of dynamical systems, discontinuous dynamical system theory, internal resonant layers in nonlinear systems, a numerical approach for prediction of resonance in stochastic layer, an approximate theory of nonlinear plates, stochastic and resonant layer theory in nonlinear dynamic systems, continuum damage theory, generalized fractal theory.

McKenney, Mark, Associate Professor, Ph.D., University of Florida, 2008. Spatial modeling, geographical information systems, location based services, artificial intelligence, machine learning.

Molki, Majid, Professor, Ph.D., University of Minnesota, 1982. Computational fluid dynamics and heat transfer, electronics cooling.

Morgan, Susan, Professor, Ph.D., Clemson University, 1995. Environmental engineering, pollution prevention, waste management, green roofs.

Noble, Brad, Associate Professor, D.Sc., Washington University, 2000. Computers and networking.

Onal, Sinan, Associate Professor, Ph.D., University of South Florida, 2014. Medical image processing and its applications, medical product development, machine learning & data mining, computational biomechanics, and engineering education.

Osouli, Abdolreza (Reza), Associate Professor, Ph.D., University of Illinois at Urbana-Champaign, 2009. Geotechnical engineering.

Panahshahi, Nader, Professor, Ph.D., Cornell University, 1987. Structural Engineering.

Qi, Yan, Associate Professor, Ph.D., Louisiana State University, 2010. Transportation engineering.

Shavezipur, Kamran, Associate Professor, Ph.D., University of Waterloo, 2008. Microelectromechanical Systems (MEMS), Biosensing Technology, Integrated Microfluidic Systems, Bio-Inspired nanostructured surfaces.

Ullah, Saad, Assisant Professor, Ph.D., George Mason University, 2018. Geotechnical engineering.

Umbaugh, Scott E., Professor, Ph.D., University of Missouri Rolla, 1989. Computer vision, image processing.

Wang, Fengxia, Professor, Ph.D., Purdue University, 2008. Piezoelectric energy harvesting, nonlinear dynamics.

Wang, Xin, Associate Professor, Ph.D., Marquette University, 2011. Power systems, motors.

Yan, Terry, Professor, Ph.D., University of California at Davis, 1993. Experimental fluid mechanics and convective heat transfer, experimental techniques, turbulence measurements, numerical simulation of electronic cooling packages.

York, Tim, Associate Professor, Ph.D., Washington University, 2015. Analog and digital electronics, biomedical hardware.

Yu, Xudong W., Associate Professor, Ph.D., Vanderbilt University, 1994. Integrated diagnostic systems, robotics, teachable agents, database and data warehouse, data mining and knowledge discovery.

Zhang, Mingshao, Associate Professor, Ph.D., Mechanical Engineering, Stevens Institute of Technology, 2016. Vision-based Control for Industrial Robotics, Machine Vision, Object Recognition, Motion Tracking, Mobile 3D Printer, Additive Manufacturing, Telepresence Teaching Robot in Remote Education, Robot Companion with Social Capabilities.

Zhou, Jianpeng (Jim), Professor, Ph.D., P.E., University of British Columbia, 2003. Wastewater treatment and process modeling, wastewater sludge treatment and biosolids management, green infrastructure for stormwater management, life cycle assessment.

English and Creative Writing

The School of Literature, Writing, and Digital Humanities offers programs leading to the Master of Arts and the Doctor of Philosophy degrees in English and to the Master of Fine Arts in Creative Writing. Students enrolled in a program leading to the Master of Science in Education degree may take courses in English to satisfy requirements for the teaching specialty. Students enrolled in the Ph.D. in Education program may take courses in English for the elective portion of the program when permitted.

Admission

Students seeking admission to the graduate program in English must first be admitted by the Graduate School before they can be admitted to the School of Literature, Writing, and Digital Humanities.

Students seeking admission to the M.A. in English and Ph.D. in English degree programs may submit scores for the general tests of the Graduate Record Examination. M.F.A. in Creative Writing applicants are strongly advised to submit these scores as well. Information about admission may be obtained by calling 618-453-5321 or by writing: Director of Graduate Studies, School of Literature, Writing, and Digital Humanities, Southern Illinois University Carbondale, Carbondale, IL 62901-4503. Email: gradengl@siu.edu.

This program requires a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in English. Applicants must pay this fee by credit card.

Transfer Credit

Within limits imposed by the Graduate School, transfer credits will be accepted by the School of Literature, Writing, and Digital Humanities subject to the following restrictions:

The student must petition the Director of Graduate Studies giving the following information: the number and level of hours being submitted for credit, where and when the work was done, the grade received,

and course descriptions and syllabi. As nearly as possible, the course to be transferred should be equated with a course offered by the School of Literature, Writing, and Digital Humanities. An appropriate faculty member will recommend whether the transfer credit hours should be accepted and whether the course satisfies the course distribution requirements of the program. The Director of Graduate Studies will forward a recommendation to the proper authorities.

Retention

In the entire graduate program, the student may accumulate up to three credit hours of work below *B*, so long as a 3.0 M.A. in English or 3.25 Ph.D. in English average is maintained. If the student has accumulated more than three credit hours, but fewer than 10 credit hours, of grades below *B*, these must be replaced by an equal number of credit hours of *A* or *B* in addition to maintaining the required average. That is, the minimum number of credit hours of course work may be increased from 30 to a maximum of 36. A student who accumulates more than nine credit hours of *C* will be dropped from the program.

A student who is granted a deferred or incomplete grade must complete the work by the end of the next term in residence. Exception to this rule will be made only in a very special case and must be made through petition to the Graduate Studies Committee. A student who has accumulated more than six credit hours of such work will not be allowed to register for more course work until the total of deferred work is reduced to not more than three credit hours. Deferred or incomplete work will be regarded as finished when a student has submitted all examinations, papers, etc., to the instructor. Deferred or incomplete grades in ENGL 595, ENGL 600, and ENGL 601 are not included in the above regulations.

Course Work

Students may offer work from outside the School (in a single field or in two or more related fields) toward the Master of Arts in English, the Master of Fine Arts in Creative Writing, or the Ph.D. in English degree provided that the work does not interfere with regular requirements of the School of Literature, Writing, and Digital Humanities and has relevance to their program.

Master of Arts (M.A.) in English

The School of Literature, Writing, and Digital Humanities offers three areas of concentration in the M.A. in English program: 1) Literature, 2) Rhetoric and Composition, and 3) English Studies. The Master of Arts degree in English with a concentration in Literature or Rhetoric and Composition requires satisfactory completion of 30 credit hours, of which at least 15 must be earned in 500-level courses at Southern Illinois University Carbondale.

All students must satisfy the following requirements:

1. **Core courses:**
   Four literature courses: two from Group I, representing two different historical periods; and two from Group II, representing two different historical periods - 12 credit hours.
   Group I:
   (a) Old and Middle English literatures
   (b) Renaissance and 17th Century English literature
   (c) Restoration and 18th Century English literature
   (d)19th Century English literature
   Group II:
   (a) American literature before 1900
   (b) American literature since 1900
   (c) Modern British literature
   (d) Modern Continental literature
2. **Concentrations:** Satisfactory completion of one of the concentrations detailed below.
3. **Foreign Language:** This requirement may be satisfied by completing, with an average not less than B, two years of college-level work in one foreign language or the equivalent. Equivalent work will be judged on an ad-hoc basis by the Director of Graduate Studies.
4. **Research paper/thesis:** This requirement may be satisfied either by submitting to the Director of Graduate Studies two copies of a research paper which has received a grade of not less than *B* in

a 500-level English course (a rhetoric/composition course for students in that concentration), or by taking ENGL 599 (three credit hours) and writing an acceptable thesis.
5. **Final examination:** This requirement must be satisfied as specified below.

English Studies Concentration

The M.A. in English with a concentration in English Studies requires satisfactory completion of 36 credit hours, of which at least 18 must be earned in 500-level courses at Southern Illinois University Carbondale.

All students in the English Studies concentration must satisfy the following requirements:

1. **Core Courses:**
   At least one course from seven of the following areas:
   (a) Language and Grammar Studies
   (b) Old/Medieval English Literature
   (c) Renaissance/17th Century British Literature
   (d) Restoration/18th Century British Literature
   (e)19th Century British Literature
   (f) Early American Literature
   (g) Modern American Literature
   (h) Modern British Literature
   (i) Modern Continental Literature
   (j) Composition and Rhetoric
2. **Electives:** 15 credit hours, which may be taken outside the English program.
3. **Final Examination:** None beyond required coursework.

Students in the English Studies concentration may request a graduate assistantship provided they receive all GA training required by the School of Literature, Writing, and Digital Humanities. Priority, however, is given to students in the other two areas of concentration because those areas of concentration are designed to meet the specific needs of students preparing to teach at the college or university level.

Literature Concentration

1. ENGL 401 or ENGL 402 or ENGL 403 - three credit hours
2. Two additional literature courses so that a student has covered three periods in Group I and three periods in Group II - six credit hours
3. Electives should include a literary criticism/theory course and may include ENGL 599 - six credit hours
4. Satisfactory completion of a written examination over three historical periods and a reading list. A student who fails the examination may take it a second time. A third examination may be allowed, but only by special permission of the Director of Graduate Studies. If the examination committee deems it useful an oral examination may be scheduled after the written examination to determine the grade for the examination. Any student choosing to take the M.A. in English qualifying examination must also file with the Graduate School a clean and properly formatted research paper which has earned the grade of *B* or better in a 500-level English course or a completed M.A. in English thesis.
5. Students may write an M.A. in English thesis, provided they submit an application (including thesis topic and title, signatures of committee members, and a letter or support from their thesis director) and it is approved by the Graduate Studies Committee.

Rhetoric and Composition Concentration

1. ENGL 401 - 3 credit hours
2. ENGL 596 - 3 credit hours
3. ENGL 597 - 3 credit hours
4. One of the following (3 credit hours): ENGL 501, ENGL 581, ENGL 491, or an appropriate special topics course (this decision is to be made in consultation with the Area Head of Rhetoric and Composition).

5. ENGL 599 (3 credit hours)
6. Satisfactory completion of either: 1) a research portfolio and oral portfolio defense, or 2) a thesis and oral thesis defense. In either case, the student will follow specific guidelines established by the Rhetoric and Composition faculty.

Master of Fine Arts (M.F.A.) in Creative Writing

The Master of Fine Arts in Creative Writing requires satisfactory completion of 48 credit hours, of which at least 24 must be earned in 500-level courses at Southern Illinois University Carbondale.

All students must satisfy the following requirements:

1. **Core courses:**
   ENGL 592 - 20 credit hours
   ENGL 594 - 4 credit hours
2. **Recommended and elective courses:** As prescribed by the creative writing faculty - 15 credit hours
3. **Candidacy Review:** In the spring semester of a student's second year in the M.F.A. in Creative Writing program, all students undergo a formal candidacy review. By April 10, faculty in each subspecialty (fiction and poetry) will submit to the director of creative writing a synopsis of each student's progress to date, as well as a finalized thesis committee. In those instances where the faculty finds that a student has not demonstrated satisfactory creative or professional progress and/or cannot form a thesis committee, the student will meet with the Director of Graduate Studies and all faculty members in the student's subspecialty to determine the nature of the deficiency. The faculty may recommend to the Director of Graduate Studies at this meeting that the student be required to complete remediation, that the student be allowed to continue in the program without sanction, or that the student be removed from the program. In the last case, the creative writing faculty will then submit a written recommendation for removal from the program to the Director of Graduate Studies and the graduate studies committee. Within five working days of receiving this recommendation, the Director of Graduate Studies will request a written response from the affected student. The student will have five days to respond in writing. Within five days of receiving this response, the director will convene a meeting of the graduate studies committee. Should the graduate studies committee concur with the creative writing faculty's recommendation, the student will be removed from the program. This decision will then be subject to the Graduate School's academic grievance policy detailed herein.
4. **Thesis:** ENGL 599 - 6 credit hours
5. **Final oral examination:** Over thesis and coursework. The oral examination/thesis defense is open to the public.

Doctor of Philosophy (Ph.D.) in English

Students must apply formally for admission to the Doctor of Philosophy in English degree program, including students who have earned a master's degree at SIU Carbondale. Admission to the Ph.D. in English program is decided by the Graduate Studies Committee, which makes its decision according to the following criteria:

1. An M.A. degree in English or its equivalent
2. Appropriate grade-point average (normally, a 3.25 is the acceptable minimum)
3. Quality of the submitted writing sample and the compatibility of a student's proposed area of focus with faculty expertise

A full-time student holding a master's degree can complete the doctoral program in English in two years, though most prefer three. Students are considered Ph.D. in English candidates when they have: (1) completed the prescribed course of study, (2) satisfied the research-tool requirements, (3) passed preliminary examinations, and (4) been recommended by the English graduate faculty. The Graduate School recognizes students as Ph.D. in English candidates after it receives notification that the students have passed preliminary examinations. Students must be admitted to candidacy at least six months prior to the final examination on the dissertation.

Accelerated Entry into the Ph.D. in English Degree Program

A student enrolled in the M.A. in English degree program may petition the Graduate Director after two semesters in residence for waiver of the requirement of the M.A. in English degree as prerequisite for admission to the doctoral program and for direct entry into the Ph.D. in English in accordance with the following conditions: first, the student must be an exceptional graduate student whose outstanding academic achievements must be supported by a wide range of conclusive evidence including, but not restricted to, the G.P.A., G.R.E. scores, M.A. in English degree research tool requirement, and evaluative letters from graduate instructors; second, the student must present one graduate research paper of outstanding quality, or a published article of appropriate quality, or the equivalent for the school files. The petition shall be presented to the Graduate Studies Committee for approval. If accelerated entry is granted, the student will proceed toward the Ph.D. in English degree in accordance with the established rules of the program and the Graduate School. Students admitted into the Ph.D. in English program under the accelerated entry option will have to fulfill all M.A. in English degree requirements as part of the Ph.D. in English degree work, but will not receive the M.A. in English degree.

Direct Entry into the Ph.D. in English Degree Program

Applicants with exceptional research potential or outstanding academic preparation may have the option to enter the doctoral program after completion of a bachelor's degree only. No previous course work at the graduate level is allowed. Students admitted via direct entry will not receive a master's degree. The program must be approved for direct entry and the student must have at least a 3.00 GPA on approximately the last two years of undergraduate course work.

Course of Study

The Ph.D. degree in English requires, at minimum, 30 credit hours of coursework (of which at least 15 should be earned at the 500 level at Southern Illinois University Carbondale), and 24 credit hours of dissertation at Southern Illinois University Carbondale. Required courses are as follows:

1. A pro-seminar to be taken in the first year of doctoral study;
2. Two graduate courses in literary theory or rhetorical theory or cultural studies;
3. Any courses prescribed by a student's advisory committee to ensure appropriate knowledge of a major area and two minor areas, normally with at least one 500-level course completed for credit, with no grade lower than B, in each minor area.

Research Tool Requirements

A student may satisfy the research tool requirement by fulfilling one of the two options listed below. The choice of option and languages selected must be approved by the student's advisory committee.

1. Command of one language demonstrated by examination in the Languages, Cultures, and International Trade program. International students may specify their native language as long as they demonstrate fluency in English as well, or
2. Reading knowledge of one foreign language demonstrated by a minimum three years course work (or its equivalent) at the college level in one language with a grade no lower than a "B." Students who take research courses in any language are required to take at least two more courses at the 300- or 400-level in the same language.

The school has expanded its Ph.D. in English program into interdisciplinary studies on a cooperative basis with programs that deal with one pertinent subject matter and which are interested in such interdisciplinary cooperation, e.g., the School of History and Philosophy, the School of Languages and Linguistics, the College of Arts and Media, the School of Communication Studies, School of Theater and Dance, the School of Anthropology, Political Science, and Sociology, etc. Permission for an interdisciplinary minor must be approved by the student's committee and the Graduate Studies Committee.

The Preliminary Exam Advisory Committee and the Program of Study Proposal

Following admission to the Ph.D. in English program, and before the completion of the second year (i.e., fourth semester) in doctoral residence, a Ph.D. in English student is required to form an academic advisory committee (hereafter referred to as the Preliminary Examination Committee) and to prepare a Program of Study Proposal. The Preliminary Examination Committee will consist of four members of the graduate faculty in English. The Chair of the Committee and one other member will normally represent the student's major area of interest; each of the remaining two members will normally represent one of the minor areas of interest. Within the limits of this distribution, the student may, usually upon consulting the Chair of the Preliminary Examination Committee, change the particular membership of the committee at any point. Normally the Preliminary Examination Committee will comprise the nucleus of the Dissertation Committee. As soon as the Preliminary Examination Committee is formed, it becomes the responsibility of all its members to oversee the student's program and academic progress.

If a student has not formed a Preliminary Examination Committee by April 15 of the fourth semester in the program, then the student will undergo the formal candidacy review process detailed herein. The Director of Graduate Studies will first consult the student in question to determine the reason for the delay in constituting the Preliminary Examination Committee. In those instances where the director finds that the delay is the result of a simple deadline mismanagement, no action will be taken. In those instances where the Director finds that a student as not demonstrated satisfactory scholarly or professional progress and/or cannot form a thesis committee, the student will meet with the Director of Graduate Studies and all faculty members in the student's area ("area" means either historical period or conceptual focus) to determine the nature of the deficiency. After the meeting, the faculty in the student's area may recommend to the Director of Graduate Studies that the student be required to complete remediation, that the student be allowed to continue in the program without sanction, that the student be granted an extra semester to complete the program of study, or that the student be removed from the program. The faculty in the student's major area will submit a written recommendation to the Director of Graduate Studies. If the faculty recommend removal, this recommendation will go to the graduate studies committee. Within five working days of receiving this recommendation, the Director of Graduate Studies will request a written response from the affected student. The student will have five days to respond in writing. Within five days of receiving this response, the Director will convene a meeting of the graduate studies committee. Should the graduate studies committee concur with the faculty's recommendation, the student will be removed from the program. This decision will then be subject to the Graduate School's academic grievance policy.

Preliminary Examinations

Students on a fellowship or a graduate assistantship will be expected to take preliminary examinations no later than two or three years, respectively, after receipt of their M.A. in English degree.

Preliminary examinations covering three areas are prepared and graded by the student's advisory committee. A major examination may consist of one six-hour written exam or one take-home literature review essay. A minor area examination may consist of a three-hour written exam or a comparable take-home literature review essay. Regardless of format, all preliminary exams conclude with an oral defense.

The committee may require the student to complete further work or testing for any minor section receiving a "Low Pass" grade. The committee must require further work or testing for any entire examination that receives a "Low Pass" grade. A student who fails the preliminary examination may request to take it a second time.

English and Creative Writing Courses

ENGL401 - Modern English Grammars Survey of the structure of English, with emphasis on phonetics and phonology, morphology, syntax, semantics, pragmatics, grammar instruction, stylistics and language variation. Specifically designed to meet the needs of prospective teachers of composition and language arts at the secondary and college levels. Credit Hours: 3

ENGL402 - Old English Language and Literature Introduction to the language, literature and culture of Anglo-Saxon England, with emphasis on Old English heroic and elegiac poetry, exclusive of Beowulf. Credit Hours: 3

ENGL404A - Medieval Allegory, History and Romance Three popular Medieval genres as represented by major texts of the early through the late Middle Ages, exclusive of Chaucer, including works such as Dream of the Rood, Sir Orfeo, Sir Gawain and the Green Knight, Piers Plowman, The Book of Margery Kempe and selections from Lawman's Brut and Malory's Le Morte Darthur. Credit Hours: 3

ENGL404B - Medieval Lyric, Ballad and Drama Lyric, ballad and drama from the early through the late Middle Ages, including translations of the Old English Wife's Lament, Husband's Message, Wanderer, and Seafarer, as well as Middle English religious and love lyrics and the Robin Hood ballads, with special emphasis on the great plays of the fifteenth century and the rebirth of drama in the Western World. Credit Hours: 3

ENGL423 - Modern British Poetry Major modernists (Yeats, Eliot, Pound), with selected works of Auden, Owen, Thomas, Heaney and others. Credit Hours: 3

ENGL425 - Modern Continental Poetry Representative poems by major 20th century poets of France, Italy, Germany, Spain, Russia, and Greece. Credit Hours: 3

ENGL427 - American Poetry from 1900 to the Present The more important poets since 1900. Credit Hours: 3

ENGL433 - Religion and Literature Introduce students to the study of religious meaning as it is found in literature. Credit Hours: 3

ENGL437 - American Literature to 1800 Representative works and authors from the period of exploration and settlement to the Federal period. Credit Hours: 3

ENGL445 - Cultural Backgrounds of Western Literature (Same as CLAS 445) A study of ancient Greek and Roman literature, Dante's Divine Comedy, and Goethe's Faust, as to literary type and historical influence on later Western writers. Credit Hours: 3

ENGL446 - Caribbean Literature Representative texts from drama, poetry, and fiction that have shaped black diaspora aesthetics in the Caribbean, with special reference to black literature of the North American continent. Credit Hours: 3

ENGL447 - African Literature Selected works of poetry, drama, and fiction by modern African authors. Credit Hours: 3

ENGL448B - Irish Literature Major works, authors, genres, periods, or movements within Irish Literature. Topics will vary (i.e., Irish Women Writers, Joyce and Yeats, The King Tales, 19th Century Irish Writers, the Celtic Twilight, Contemporary Irish Poets, etc.), providing in-depth study in particular areas within the 16 centuries of Irish Literature. Credit Hours: 3

ENGL455 - Modern Continental Fiction Selected major works of Europe and authors such as Mann, Silone, Camus, Kafka, Malraux, Hesse. Credit Hours: 3

ENGL458 - American Fiction to 1900 Trends and techniques in the American novel and short story. Credit Hours: 3

ENGL460 - Elizabethan and Jacobean Drama Elizabethan drama excluding Shakespeare: such Elizabethan playwrights as Greene, Peele, Marlowe, Dekker; and Jacobean drama: such Jacobean and Caroline playwrights as Jonson, Webster, Marston, Middleton, Beaumont and Fletcher, Massinger, Ford, Shirley. Credit Hours: 3

ENGL464 - Modern British Drama Major writers (including Shaw and Synge), with selected works of later dramatists such as Churchill and Bond. Credit Hours: 3

ENGL465 - Modern Continental Drama The continental drama of Europe since 1870; representative plays of Scandinavia, Russia, Germany, France, Italy, Spain and Portugal. Credit Hours: 3

ENGL468 - American Drama The rise of drama, with emphasis on the 20th century. Credit Hours: 3

ENGL469 - Contemporary Topics in Drama Varying topics on cross-national and cross-cultural 20th-century drama with focus on theoretical issues. Credit Hours: 3

ENGL485A - Teaching Writing and Language in the Secondary School Introduction to strategies for teaching English in the secondary school with emphasis on writing and language. Introduction to assessment of writing perception and skills. Assessment and tutoring of child from the community in writing. Ideally, course should be taken two semesters prior to student teaching. Restricted to: Admittance to Teacher Education Program through CoEHS. Credit Hours: 3

ENGL485B - Teaching Reading and Literature in the Secondary School Introduction to strategies for teaching English in the secondary school with emphasis on critical reading skills and various genres of literature, including contemporary adolescent literature. Introduction to assessment of reading perception and skills. Assessment and tutoring of child from the community in reading. Ideally, course should be taken the semester prior to student teaching. Restricted to: Admittance to Teacher Education Program through CoEHS. Credit Hours: 3

ENGL491 - Rhetoric and Writing Studies as a Field An introduction to the field of Rhetoric and Writing Studies. The course covers both the history of Rhetoric and Writing Studies and the major theoretical debates organizing research and teaching in the field today. The course explores how the insights of Rhetoric and Writing Studies can be applied to non-academic and professional writing contexts. This course is recommended for advanced undergraduate students interested in graduate study in Rhetoric and Composition and graduate students. Prerequisite: C average in ENGL 101 and ENGL 102; or C in ENGL 120H; or equivalent. Open to English majors and minors and graduate students in English or with consent of department. Credit Hours: 3. Credit Hours: 3

ENGL493 - Special Topics in Literature and Language Topics vary and are announced in advance; both students and faculty suggest ideas. May be repeated as the topic varies. Credit Hours: 3-9

ENGL493H - Special Topics in Literature and Language (Same as ENGL 493) Topics vary and are announced in advance; both students and faculty suggest ideas. May be repeated as the topic varies. Prerequisites: ENGL 101 and 102 or ENGL 120H (undergraduates) with a grade of C or better. Credit Hours: 3

ENGL494 - Cultural Analysis and Cinema Cultural Studies exploring various and selected topics in European and American Cinema. A $10 screening fee is required. Credit Hours: 3

ENGL495 - A Survey of Literary Criticism Introduction to the history of criticism and major recent schools of literary criticism and theory. Credit Hours: 3

ENGL498 - Internships For English majors only. Student may take up to nine semester hours to receive credit for internships that may be available at SIU Press, Special Collections, University Museum, Coal Center, Writing Center, Computer Lab and other faculty or unit-sponsored projects. Prerequisite: Written approval from department & academic unit and enrollment in English degree program or consent of department. Credit Hours: 3-9

ENGL499 - Readings in Literature and Language For English majors only. Prior written departmental approval required. May be repeated as the topic varies, up to the maximum of six semester hours. Restricted to enrollment in English degree program or consent of department. Credit Hours: 1-3

ENGL500 - Proseminar Research methodology involved in writing a critical or scholarly work on literary topics for doctoral students in literature. Restricted to enrollment in English graduate degree program. Credit Hours: 3

ENGL501 - Research in Composition Seminar in qualitative and quantitative research methods in composition and its teaching. Restricted to enrollment in English graduate degree program or consent of department. Credit Hours: 3

ENGL502 - Teaching College Composition An introduction to methods and materials related to the teaching of basic compositional skills on the college level. This course is required of all graduate assistants who have no previous college teaching experience or no familiarity with basic research techniques. Credit Hours: 3

ENGL503 - Professional Development Theory and practice for teaching composition in teacher-centered, workshop, discussion, and computer courses (Fall). Scholarly publication, course development, professional trends (Spring). Restricted to enrollment in English graduate degree program. Credit Hours: 2

ENGL504 - Professional Development in Creative Writing Practicum in preparation and submission of creative work for publication, and in preparation for and application for writers' conferences, fellowships, and internships in creative writing. Restricted to and required for first-semester MFA candidates. Credit Hours: 1

ENGL505 - Middle English Literature: Chaucer Major works of Chaucer, with focus on placing The Canterbury Tales in the context of 14th and 15th century English belle lettres, and exploration of how the major cultural, social, political, and religious events of the time intersect with Chaucer's writings. Students who have completed ENGL 405 are ineligible to enroll. Credit Hours: 3

ENGL506 - Old and Middle English Studies Seminars on various topics from Old and Middle English literature. May be repeated only with different topics and the consent of the department. Restricted to enrollment in English graduate degree program or consent of department. Credit Hours: 3-12

ENGL510 - Renaissance Studies Seminars in varying topics concerned with the literature of the 16th and 17th centuries and the drama of Shakespeare. May be repeated only with different topics and the consent of the department. Restricted to enrollment in an English degree program or consent of department. Credit Hours: 3-12

ENGL512 - English Non-Dramatic Literature: The Renaissance This course focuses on 17th-century metaphysical poets such as Donne, Herbert and Marvell. Students who have completed ENGL 412 are ineligible to enroll. Credit Hours: 3

ENGL513 - English Non-Dramatic Literature : The Restoration and Earlier Eighteenth Century Major works of Dryden, Pope, Swift, and the non-dramatic specialties of Behn, Addison, and Steele. Students who have completed ENGL 413 are ineligible to enroll. Credit Hours: 3

ENGL514 - English Non-Dramatic Literature: The Later Eighteenth Century Major poets from Thomson to Blake, and major prose writers, with emphasis on Johnson, Boswell, and their circle. Students who have completed ENGL 414 are ineligible to enroll. Credit Hours: 3

ENGL516 - Restoration and 18th Century Studies Seminars in varying topics concerning the literature of the period. May be repeated only with different topics and the consent of the department. Restricted to enrollment in an English degree program or consent of department. Credit Hours: 3-12

ENGL521 - English Romantic Literature Wordsworth, Coleridge, Byron, Shelley, Keats, and other writers of the era and movement. Students who have completed ENGL 421 are ineligible to enroll. Credit Hours: 3

ENGL522 - Victorian Poetry Tennyson, Browning, Arnold, and other poets from this period in England. Students who have completed ENGL 422 are ineligible to enroll. Credit Hours: 3

ENGL526 - American Poetry to 1900 Trends and techniques in American poetry to 1900. Students who have completed ENGL 426 are ineligible to enroll. Credit Hours: 3

ENGL530 - Century English Literature Seminars in various topics concerning the literature of the Romantic and Victorian periods. May be repeated only with different topics and the consent of the department. Restricted to enrollment in an English degree program or consent of department. Credit Hours: 3-12

ENGL533 - American Literature Before 1900 Seminars in varying topics. May be repeated only with different topics and the consent of the department. Restricted to enrollment in English graduate degree program or consent of department. Credit Hours: 3-12

ENGL536 - Major American Writers Significant writers from Puritans to the present. May be repeated only if topic varies, and with consent of program. Students who have completed ENGL 436 are ineligible to enroll. Credit Hours: 3

ENGL539 - American Literature After 1900 Seminars in varying topics. May be repeated only with different topics and the consent of the department. Restricted to enrollment in English graduate degree program or consent of department. Credit Hours: 3-12

ENGL550 - Modern British Literature Seminars in varying topics concerning Modern British literature. May be repeated only with different topics and the consent of the department. Restricted to enrollment in an English degree program or consent of department. Credit Hours: 3-12

ENGL551 - Eighteenth Century English Fiction The novel from Defoe, Fielding, and Richardson to Jane Austen. May be repeated only if topic varies and with consent of program. Students who have completed ENGL 451 are ineligible to enroll. Credit Hours: 3

ENGL552 - Nineteenth Century English Fiction The Victorian novel from 1830, including works by the Brontes, Dickens, George Eliot, Hardy, Thackeray, and others. May be repeated only if topic varies and with consent of program. Students who have completed ENGL 452 are ineligible to enroll. Credit Hours: 3

ENGL553 - Modern British Fiction Major British writers from early- to mid-20th Century, including Joyce, Woolf, Conrad, and Lawrence. May be repeated only if topic varies and with consent of program. Students who have completed ENGL 453 are ineligible to enroll. Credit Hours: 3

ENGL555 - Irish Studies Seminars on varying topics in Irish and Irish immigration studies; interdisciplinary/cultural studies approaches. May be repeated only with different topics and the consent of the department. Restricted to enrollment in English graduate degree program or consent of department. Credit Hours: 3-12

ENGL559A - American Prose from 1900 to Mid-Century: The Modern Age Representative narratives from 1900 to post-World War II period. Students who have completed ENGL 459A are ineligible to enroll. Credit Hours: 3

ENGL559B - American Prose from Mid-Century to the Present: The Postmodern Age Representative narratives from the post-WWII era to the present. Students who have completed ENGL 459B are ineligible to enroll. Credit Hours: 3

ENGL562 - English Restoration and 18th Century Drama Representative types of plays from Dryden to Sheridan. Students who have completed ENGL 462 are ineligible to enroll. Credit Hours: 3

ENGL571 - Shakespeare: The Early Plays, Histories, and Comedies Such plays as Midsummer Night's Dream, The Merchant of Venice, The Taming of the Shrew, Henry IV Part I, Henry V, and Much Ado about Nothing. Students who have completed ENGL 471 are ineligible to enroll. Credit Hours: 3

ENGL572 - Shakespeare: The Major Tragedies, Dark Comedies, and Romances Such plays as Hamlet, Macbeth, Othello, King Lear, Measure for Measure, The Winter's Tale, and The Tempest. Students who have completed ENGL 472 are ineligible to enroll. Credit Hours: 3

ENGL573 - Milton Minor poems, Paradise Lost, Paradise Regained, Samson Agonistes, and the major treatises. Students who have completed ENGL 473 are ineligible to enroll. Credit Hours: 3

ENGL579 - Studies in Modern Literature May be repeated only if the topic varies, and with consent of department. Restricted to enrollment in an English degree program or consent of department. Credit Hours: 3

ENGL580 - Young Adult Literature in a Multicultural Society Introduction to the evaluation of literary materials for junior high and high school ages. Emphasis on critical approaches and multicultural features of this material. Students who have completed ENGL 481 are ineligible to enroll. Credit Hours: 3

ENGL581 - Problems in Teaching English May be repeated only if the topic varies, and with consent of department. Restricted to enrollment in an English degree program or consent of department. Credit Hours: 3

ENGL582 - Issues in Writing Program Administration Seminars in varying topics concerning writing program administration. May be repeated only with different topics and the consent of department. Credit Hours: 3

ENGL583I - Internship in Writing Program Administration An internship in WPA builds on four components: readings, activities or job tasks, written tasks, and a portfolio of artifacts and reflections representing the experience. These internships provide opportunities for interested students to implement practically what they are learning through research and reading. Credit Hours: 3

ENGL588 - Comprehensive Exam Readings Preparatory for MA comprehensive exam. May be taken once only; grade of S/U. Restricted to enrollment in English program or consent of department. Restricted to MA students in English. Credit Hours: 3

ENGL589 - Readings in Literature and Language For English graduate students only. Prior written departmental approval required. May be repeated as the topic varies. Restricted to enrollment in an English degree program or consent of department. Credit Hours: 3-12

ENGL591 - Seminar in Literary Nonfiction Critical reading and analysis of one of the major forms of literary nonfiction (biography, autobiography, popular science, the essay, literary journalism, and travel narratives). May be repeated only with different topics and the consent of the department. Special approval needed from the instructor. Credit Hours: 3-9

ENGL592 - Creative Writing Seminar Advanced workshops offered in both fiction and poetry. Class content derives primarily from student's work. Genre announced in advance. May be repeated with consent of department. Restricted to enrollment in English MFA program or consent of department. Credit Hours: 4

ENGL593 - Special Topics Seminars in varying topics concerning language and literature. May be repeated only with different topics and the consent of the department. Restricted to enrollment in an English degree program or consent of department. Credit Hours: 3-12

ENGL594 - Contemporary Literature Seminar Advanced seminars offered in both contemporary poetry and contemporary fiction. Taught by creative writers and designed for students concentrating in creative writing. Restricted to enrollment in English MFA program or consent of department. May be repeated for credit with different section numbers. Credit Hours: 4

ENGL595 - Independent Readings Preparatory for preliminary examinations for doctoral students in English. May be taken once only, grade of S/U, according to the result of the preliminary examination. Credit Hours: 1-9

ENGL596 - Language Studies Seminars in varying topics concerning rhetoric, grammar and literacy. May be repeated only with different topics and the consent of the department. Restricted to enrollment in English graduate degree program or consent of department. Credit Hours: 3-12

ENGL597 - Composition Theory Historical and analytical approaches to theories of discourse, theories of composing and theories of pedagogy. Prerequisite: ENGL 502 or equivalent. Credit Hours: 3

ENGL598 - Studies in Issues of Literary Theory Seminars on various issues of literary theory. May be repeated only with different topics and the consent of the department. Restricted to enrollment in an English degree program or consent of department. Credit Hours: 3-12

ENGL599 - Thesis For Masters' students who elect to write a thesis in lieu of one three hour graduate course. Prerequisite: successful completion of 15 hours of graduate work on the Master's degree. Special

approval needed from the thesis director. Restricted to enrollment in an English degree program or consent of department. Credit Hours: 3

ENGL600 - Dissertation Credit Hours: 1-36

ENGL601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

ENGL699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

English and Creative Writing Faculty

Amos, Mark Addison, Associate Professor, Ph.D., Duke University, 1994; 1999.

Anthony, David J., Professor and Chair, Ph.D., University of Michigan, 1998; 1998.

Benedict, Pinckney, Professor, M.F.A., University of Iowa Writers' Workshop, 1988; 2006.

Bogumil, Mary L., Associate Professor, Ph.D., University of South Florida, 1988; 2001.

Boulukos, George E., Professor, Ph.D., University of Texas at Austin, 1998; 2001.

Chandler, Anne K., Associate Professor, Ph.D., Duke University, 1995; 1995.

Dougherty, Jane Elizabeth, Associate Professor and Director of Writing Studies, Ph.D., Tufts University, 2001; 2005.

Fox, Robert Elliot, Professor, Ph.D., SUNY at Buffalo, 1976; 1991.

Frumkin, Rafael, Assistant Professor, M.F.A., University of Iowa Writers' Workshop, 2014; 2019.

Humphries, Michael L., Associate Professor, Ph.D., The Claremont Graduate School, 1990; 1991.

Jordan, Judy L., Associate Professor, M.F.A., University of Virginia, 1995, University of Utah, 2000; 2002.

Joseph, Allison E., Professor and Director of Creative Writing Program, M.F.A., Indiana University, 1992; 1994.

McEathron, Scott J., Professor, Ph.D., Duke University, 1993; 1993.

McGrath, Patrick, Associate Professor and Director of Undergraduate Studies, Ph.D., University of Illinois at Urbana-Champaign, 2015; 2015.

Molino, Michael R., Associate Professor, Ph.D., Marquette University, 1991; 1998.

Netzley, Ryan, Professor and Director of Graduate Studies, Ph.D., Pennsylvania State University, 2002; 2005.

Shapiro, Joseph, Associate Professor, Stanford University, 2011; 2011.

Williams, Tony, Professor, Ph.D., University of Manchester, 1973; 1984.

Emeriti Faculty

Appleby, Bruce C., Professor, Emeritus, Ph.D., University of Iowa, 1967; 1967.

Bennett, Paula B., Professor, Emerita, Ph.D., Columbia University, 1970; 1991.

Brunner, Edward J., Professor, Emeritus, Ph.D., University of Iowa, 1974; 1991.

Cogie, Jane N., Associate Professor, Emerita, Ph.D., University of Iowa, 1984; 1991.

Collins, K. K., Professor and Distinguished Teacher, Emeritus, Ph.D., Vanderbilt University, 1976; 1976.

Dively, Ronda L., Professor, Emerita, D.A., Illinois State University, 1994; 1994.

Donow, Herbert S., Professor, Emeritus, Ph.D., University of Iowa, 1966; 1966.

Fanning, Charles, Professor, Emeritus, Ph.D., University of Pennsylvania, 1972; 1993.

Griffin, Robert P., Associate Professor, Emeritus, Ph.D., University of Connecticut, 1965; 1965.

Howell, John M., Professor, Emeritus, Ph.D., Tulane University, 1963; 1963.

Jones, Rodney G., Professor, Emeritus, M.F.A., University of North Carolina at Greensboro, 1973; 1984.

Klaver, Elizabeth T., Professor, Emerita, Ph.D., University of California at Riverside, 1990; 1991.

Kvernes, David M., Assistant Professor, Emeritus, Ph.D., University of Minnesota, 1967; 1968.

Lamb, Mary E., Professor, Emerita, Ph.D., Columbia University, 1975; 1976.

Lawson, Richard A., Professor, Emeritus, Ph.D., Tulane University, 1966; 1963.

Little, Judy R., Professor, Emerita, Ph.D., University of Nebraska, 1969; 1969.

Lordan, E. Beth, Professor, Emerita, M.F.A., Cornell University, 1987; 1991.

McClure, Lisa J., Associate Professor, Emerita, D.A., University of Michigan, 1988; 1988.

Nelms, R. Gerald, Associate Professor, Emeritus, Ph.D., Ohio State University, 1990; 1990.

Peterson, Richard F., Professor, Emeritus, Ph.D., Kent State University, 1969; 1969.

Rudnick, Hans H., Professor, Emeritus, Ph.D., University of Freiburg, Germany, 1966; 1966.

Schonhorn, Manuel R., Professor, Emeritus, Ph.D., University of Pennsylvania, 1963; 1968.

Simeone, William E., Professor, Emeritus, Ph.D., University of Pennsylvania, 1950; 1950.

Environmental Resources and Policy

The School of Earth Systems and Sustainability offers the Doctor of Philosophy degree in Environmental Resources and Policy. This degree provides students with an interdisciplinary education in natural resource and environmental processes with a perspective on public policy and the social institutions that shape societal and individual reactions to environmental issues. Students become prepared to address complex environmental problems through interdisciplinary scientific research and be qualified for high-level administration positions in academia, government (e.g. U.S. Geological Survey, U.S. Environmental Protection Agency, U.S. Forest Service, Illinois Department of Natural Resources, U.S. Department of Agriculture), and the private sector (e.g. environmental consulting firms, electric and water utilities, mining and solid waste firms). This enables graduates to address the most compelling and daunting challenges in natural resources and environmental science—identifying and solving problems that cross disciplinary boundaries.

The Ph.D. in Environmental Resources and Policy is housed within the School of Earth Systems and Sustainability and has participating faculty from the Schools of Agricultural Sciences, Biological Sciences, Civil, Environmental, and Infrastructure Engineering, Computing, Forestry and Horticulture, and Law as well as programs in the College of Business and Analytics and the College of Liberal Arts. The program offers the following concentrations:

Climatology Concentration

Students who take the Climatology concentration will study the past, present, and future of Earth's atmospheric system that, in interaction with the land and the hydrosphere, generate long-term weather patterns that is climate. Methods for investigating paleoclimates such as dendrochronology, ice and sediment cores, will be emphasized along with use of Atmospheric-Oceanic General Circulation Models for the investigation of future climate change.

Earth and Environmental Processes Concentration

Students who select this concentration combine elements of the modern, process-oriented geology curriculum (sedimentology, geomorphology, petrology, basin analysis, seismology, potential-field geophysics, organic and water geochemistry, tectonics, and paleo-environmental analysis) with allied disciplines to prepare for research into a broad range of environmental studies. This concentration emphasizes the geological process approach to analysis of such problems as flooding, earthquake hazards, land-use practices, aquifer degradation, and mine site remediation.

Ecology Concentration

Ecology studies the complex relationships between organisms, populations, communities, ecosystems, biomes and the biosphere, which are deeply affected by human decisions, actions and policies - actions and policies which are themselves influenced by the environment. Environmental Resources and Policy-ecology students will focus on the ecosystem-society relationship, such as the provision and management of ecosystem services. As the human footprint widens, and active management of ecosystems becomes more policy-relevant, understanding these connections is a vital component of training the next generation of scientists.

Energy and Mineral Resources Concentration

Energy and mineral resources include hydrocarbons (oil, natural gas, coal, and their naturally-occurring and manufactured derivatives), and both metallic and non-metallic (industrial) mineral and rock deposits. This concentration comprises studies of the origins and physical occurrences of these resources, together with technologies and policies concerning their extraction and use.

Environmental Policy and Administration Concentration

Making and administering environmental policy has become an exceedingly complex arena where science interacts strongly with law and the political process. Students enrolled in this concentration will examine these interactions and complexities with a focus on the socioeconomic driving forces that generate resource use and attendant environmental problems, and the political and legal frameworks through which societies make and implement public policy in the environmental field.

Forestry, Agricultural, and Rural Land Resources Concentration

Many environmental problems, challenges and policies take place on rural landscapes where forestry and agricultural land uses are intermingled with non-farm rural residents and others. Many rural land uses contribute to environmental problems and the development of environmentally benign and sustainable methods of production are goals of environmental policy. Consequently, through this concentration, students will examine the interaction among environmental quality, production, and the process and institutions of public policy.

Geographic Information Systems and Environmental Modeling Concentration

Modern environmental sciences, management and planning rely on acquisition, analysis and integration of large data bases using remote sensing, digital image processing, geographic information systems and environmental modeling. The purpose of this concentration is to enable students to develop high skills in these areas and to apply them to one or more natural resource domains (e.g., hydrogeology, forest inventory, spatial decision support systems, environmental modeling).

Water Resources Concentration

As a critical flow resource, water is of central importance to society and, through hydrologic processes, is involved in many environmental issues from water shortages in populous arid regions to ground water quality concerns associated with agri-chemical use. Through this concentration, students will examine the interaction among hydrologic processes, environmental quality, water resource use, and the processes and institutions of the private sector and public policy that govern water resources.

Doctor of Philosophy (Ph.D.) in Environmental Resources and Policy

Admission and Retention

Students will be admitted to the program on the basis of academic merit, statement of interest, and the availability of a willing Ph.D. advisor. Environmental Resources and Policy students will be selected on a national and international competitive basis. Admissions will not be rationed by concentration.

Students must have a Master's Degree or a J. D. Students with a Bachelor's Degree may be admitted conditional upon completion of a master's degree from one of the participating programs.

Admission and financial aid are competitive on the basis of Master's-level GPA, professional work experience, and GRE scores, as well as letters of recommendation. Applicants must have a Master's-level GPA of at least 3.25, and meet one of the following:

1. a combined verbal and quantitative GRE score of at least the 50th percentile.
2. three years of successful professional experience in the environmental/natural resources field.

Highly qualified applicants will be nominated for Doctoral Fellowships and Morris Fellowships.

Students must remain in good standing with a GPA of 3.0 or higher and be making good progress toward identification and completion of a dissertation project. Students in good standing who have qualified for assistantships will be offered funding for at least three nine-month academic years.

This program requires a nonrefundable $65 application fee that must be submitted with the application for admission to Graduate Study in Environmental Resources and Policy. Applicants must pay this fee by credit card.

Required Courses:

- ERP 502: Environmental Decision Making (3 CH)
- ERP 598: Applied Environmental Resources and Policy (1 credit hour each year in residence)

One Methodology class listed below:

- SOC 512: Sociological Research Methods & Design (4 CH)
- ECON 567A: Econometrics I (3 CH)
- QUAN 506: Inferential Statistics (4 CH)
- QUAN 507: Multiple Regression (4 CH)
- GEOL 513: Quantitative Methods in Earth Sciences (3 CH)
- GEOG 512: Applied Geographic Statistics (3 CH)
- ZOOL 557: Biostatistics (4 CH)

One Science class listed below:

- FOR 508: Historical Ecology (2 CH)
- FOR 531: Disturbance Ecology (2 CH)
- GEOG 534: Water Resources Hydrology (3 CH)
- GEOG 536: Natural Hazards (3 CH)
- GEOG 540: Rivers and Their Management (3 CH)
- GEOL 417: Isotope Geochemistry (3 CH)
- GEOL 515: Instrumental Analysis in Geology (3 CH)
- GEOL 517: Advanced Topics in Geochemistry (3 CH)
- GEOL 524: Advanced Topics in Sedimentary Geology (3 CH)
- PLB 443: Restoration Ecology (3 CH)
- PLB 445: Wetland Ecology and Management (4 CH)
- PLB 452: Plant Population Ecology (4 CH)
- ZOOL 411: Environmental Risk Assessment (3 CH)
- ZOOL 445: Wetland Ecology and Management (4 CH)
- ZOOL 521: Stream Ecology (3 CH)

- ZOOL 569: Advanced Fisheries Management (3 CH)

Candidacy and Dissertation

By the end of their second semester in residence, students must have chosen a concentration and formed a graduate committee to oversee their dissertation research. The graduate committee may have a maximum of three of the five members from one program. Completion of research tools will be determined by committee. Written and oral preliminary examinations consist of two parts: one based on the program core material, and one on the student's chosen concentration. When the student has passed prelims and a dissertation proposal is accepted by the committee, students are admitted to candidacy. If prelims are not passed, they must wait a minimum of three months for the second and final attempt to pass the exam.

Candidates will be required to present an acceptable dissertation describing original research. Dissertation approval is based on a successful oral defense of the dissertation research and approval of the dissertation by the graduate committee. The dissertation research must also be presented in ERP 598.

Curriculum

Prerequisites

Students must have at least three of the seven courses listed below to be admitted and must have five upon completion of the program. It is anticipated that most students will fulfill many of the prerequisites through their previous work at the undergraduate and Master's level and will have working facility with computers. For those students without adequate background, identified courses are required to provide students with the background necessary to successfully participate in the program.

Prerequisites for all Concentrations	SIUC Course if Unfulfilled
One course in statistics	QUAN 506 or more advanced
One course in calculus	MATH 150 or more advanced
One course in chemistry	CHEM 200 or more advanced
One course in earth science	GEOG 303I OR GEOL 474 or more advanced
One course in ecology	BIOL 307 or more advanced
One course in resource economics	ABE 440, FOR 411, GEOG 422, or more advanced
One course in U.S. env. law or policy	GEOG 426, LAW 548, or more advanced

Core: 36 Credit Hours (including 24 credit hours in ERP 600)
Concentration: 24 Credit Hours Minimum
Total: 60 Credit Hours

Core Curriculum for all Concentrations

Required Courses:

- ERP 502: Environmental Decision Making (3 CH)
- ERP 598: Applied Environmental Resources and Policy (1 credit hour each year in residence)

One Methodology class listed below:

- Qualitative
  - SOC 512: Sociological Research Methods & Design (4 CH)

- Quantitative
  - ECON 567A: Econometrics I (3 CH)
  - QUAN 506: Inferential Statistics (4 CH)
  - QUAN 507: Multiple Regression (4 CH)

- GEOL 513: Quantitative Methods in Earth Sciences (3 CH)
- GEOG 512: Applied Geographic Statistics (3 CH)
- ZOOL 557: Biostatistics (4 CH)
- ZOOL 558: Advanced Biostatistics (4 CH)

Curriculum for Concentrations

Each concentration will require mastery of one or more research tools. Specific courses and research tools will be determined by the student and the research supervisor in consultation with the student's faculty advisory committee. The multidisciplinary curriculum for each concentration is customized to meet the student's individual interests and career goals.

Climatology Concentration

The curriculum may include courses in Geography and Environmental Resources, Geology, Physics, Mathematics, and other areas relevant to the climate system processes.

Earth and Environmental Processes Concentration

The curriculum may include courses in geology, biological science, physical science areas other than geology, geography (GIS and cartography), environmental law, remote sensing, soil science, mining and civil engineering, computer science and statistics.

Ecology Concentration

The curriculum will include PLB 589A and other courses in Zoology, Plant Biology, Forestry, Geology, Geography and Environmental Resources, and other areas relevant to ecology.

Energy and Mineral Resources Concentration

The curriculum may include courses in geology, biological science, physical science areas other than geology, geography (GIS and cartography), environmental law, remote sensing, soil science, mining and civil engineering, computer science and statistics.

Environmental Policy and Administration Concentration

The curriculum may include courses in environmental law, political science, geography, forestry, agribusiness economics, economics, anthropology, zoology, and statistics. Emphasis is on the processes of public policy formulation and implementation.

Forestry, Agricultural, and Rural Land Resources Concentration

The curriculum may include courses in agribusiness economics, plant, soil, and agricultural systems, animal science, geography, remote sensing and GIS, human dimensions of natural resource management, plant biology, zoology, and statistics. Emphasis is on the processes of changing land uses of rural landscapes and the implications for the environment and adjacent land uses.

Geographic Information Systems and Environmental Modeling Concentration

Students may elect from several specializations within this concentration including Remote Sensing, Geospatial Modeling, Environmental Modeling, and Geological Modeling.

Water Resources Concentration

The curriculum should include courses in Water Policy and Planning and Hydrological Sciences.

Environmental Resources and Policy Courses

ERP500 - Physical and Biological Environmental Systems Application of principles of systems analysis, including chaos and complex adaptive systems, to Earth biogeochemical cycles (e.g. energy, carbon, water, nutrients), inter-relations among them and disruptions to them. Topical focus will vary among: the analysis of how contaminants travel, especially through ground water, and become dispersed in the environment; the origin of soils and the movement of nutrients among plants, water and soils; the origin and distribution of natural resources such as metals and fossil fuels and of natural hazards such as flooding, earthquakes, landslides and volcanism; the global carbon cycle, especially its role in global climate change. Credit Hours: 3

ERP502 - Environmental Decision Making This course's primary objectives are for the student to gain a firm understanding of the fundamentals of environmental decision making, to be able to communicate conversantly across disciplines in a policy setting and understand the role integrated modeling plays in environmental management. In this course, case studies in U.S. environmental history and policy will be used to provide the student with context for how past environmental decisions have set the template for contemporary natural resource management and policy. Topics to be covered in this course include regulatory approaches, market-based environmental management, structured decision making, federalism, water rights, and river management. Credit Hours: 3

ERP590 - Readings in Environmental Resources and Policy Readings in a specialized topic under the direction of an approved graduate faculty member. Graded S/U only. Credit Hours: 1-3

ERP598 - Applied Environmental Resources and Policy Invited speakers from federal, state, or local agencies; nongovernmental organizations; academic institutions; and Environmental Resources and Policy faculty will present case studies on the conduct of environmental research, the development of environmental laws and regulation, and the implementation of environmental policies. Additionally, students will present dissertation proposals and defend their dissertations. Taken for one credit each year in residence in the Environmental Resources and Policy program. Restricted to enrollment in the Environmental Resources and Policy program. Credit Hours: 1

ERP599 - Individual Research in Environmental Resources and Policy Individual investigation under faculty guidance in environmental resources and policy other than that for the dissertation. Only three hours may be credited toward the degree. Restricted to admission to Environmental Resources and Policy Program. Credit Hours: 1-3

ERP600 - Dissertation Research for and writing of the doctoral dissertation. Special approval needed from the instructor. Credit Hours: 1-12

ERP601 - Continuing Enrollment For those graduate students who have not finished their degree and who are in the process of working on their dissertation. The student must have completed a minimum of 24 hours of dissertation research before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Environmental Resources and Policy Faculty

Environmental Resources & Policy Faculty
Please see the program web pages (erp.siu.edu/faculty-staff/) for detailed information on the research activities of individual faculty members. Please also see the program entries in this catalog.

Biological Sciences

Butts-Wilmsmeyer, Carolyn, Associate Professor and Director of the Center for Predictive Analytics, Plant Genetics and Predictive Modeling

Computer Science

Che, Dunren, Professor, Big Data, Machine Learning, Cloud Computing

Economics

Lahiri, Sajal, Professor, Distinguished Scholar and Vandeveer Chair, International and Developmental Economics

Forestry

Akamani, Kofi, Assistant Professor, Human Dimensions of Natural Resource Management

Carver, Andrew, Professor and Director of Engagement, Land Use Planning, GIS

Park, Logan, Associate Professor, Recreation Ecology

Ruffner, Charles, Professor, Forest Ecology

Schoonover, Jon, Professor, Watershed Management and Hydrology

Williard, Karl, Professor, Hydrological Modeling, Watershed Management

Geography and Environmental Resources

Duram, Leslie, Professor, Agricultural Conservation Policy, Public Lands Policy, Organic Agriculture

Hurst, Kristin, Assistant Professor, Sustainability Psychology, Pro-Environmental Behavior, Climate Change Engagement

Li, Ruopu, Associate Professor, GIS-based Land Use Modeling, Water Resources Planning and Management, Groundwater Modeling

Remo, Jonathan, Associate Professor and ER&P Director, Hydrology, Water Resources Management, Fluvial Geomorphology, and Natural Hazard

Schoof, Justin, Professor, Climate Variability and Change, Climate Extremes

Wang, Guangxing, Professor, Remote Sensing, Spatial Statistics and GIS

Geology

Lefticariu, Liliana, Professor, Stable Isotope Geochemistry, Aqueous Geochemistry, Radiation Chemistry

Mathematics

Xu, Jianhong, Associate Professor, Numerical Analysis, Matrix Theory and Applications

Microbiology

Hamilton-Bhrem, Scott, Assistant Professor, Anaerobic and Aerobic Cultivation of Microorganisms, Environmental Sampling

Plant Biology

Gibson, David, Professor, Population and Community Ecology

Plant, Soil and Agricultural Systems

Gage, Karla, Assistant Professor, Biology and Ecology of Weeds

Sadeghpour, Amir, Assistant Professor, Integrated Soil Management

School of Law

McCubbin, Patricia, Professor, Environmental Law, Environmental Law, Advanced Environmental Litigation

SIUE Cooperative

Guehlstorf, Nicholas, Professor, Environmental Law, Political Theory

Lin, Zhi-Qing, Professor, Phytoremediation Technology, Biogeochemistry

Martinez, Adriana, Associate Professor, Fluvial Geomorphology, Riparian Zones, GIS

Retzlaff, William, Professor, Sustainable Infrastructure, Green Roofs, Green Technology

Theodarakis, Chris, Professor, Aquatic Ecotoxicology

Yoon, Kyong-Sup, Assistant Professor, Environmental Toxicology, Vector Biology

Zoology

Brooks, Marjorie, Associate Professor, Aquatic Ecology, Freshwater and Marine Biogeochemistry

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Forestry

The School of Forestry and Horticulture offers advanced courses for the Master of Science degree in Forestry. In addition, curricula are available which permit graduate students with an interest in forestry to pursue a Doctor of Philosophy degree program in other units, including the Ph.D. in Agricultural Sciences. The Forestry program offers Master of Science students the opportunity to tailor their program to address their interests and career aspirations. Our faculty have expertise in:

- Forest Resource Management
- Ecological Restoration
- Fire Science
- Recreation Ecology
- Human Dimensions of Natural Resource Management
- Wildlife Conservation and Habitat Management
- Watershed Management
- Hydrology and Soil Science

Individual programs of study and research are developed by students in consultation with their faculty advisor and graduate research committee to ensure timeliness and feasibility. Interdisciplinary research is encouraged. Prospective students should review the description of graduate courses offered in the program. Current and prospective students should visit the program's website for a current description of faculty interests and expertise.

Master of Science (M.S.) in Forestry

Admission

In addition to requirements set forth by the Graduate School, the Master of Science in Forestry admission requirements are:

1. A minimum grade point average of 2.7 or better is required for admission (*A* = 4.0) on the entire last undergraduate GPA earned at the time of application. A grade point average of 2.7 or higher is required for stipend eligibility when available.

2. The student is required to provide proof of proficiency in technical writing. Normally an expository essay is required to evaluate whether the student should have remedial grammar or writing courses.
3. Three letters of recommendation from former professors, employers, or other responsible individuals are required.
4. Each applicant must complete the statement of interest form. This form indicates the student's area of interest in forestry and the faculty member with whom the student desires to study. All correspondence should be directed to the program.
5. This program requires a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in Forestry. Applicants must pay this fee by credit card.

Retention and Completion Requirements

Upon the graduate student's arrival on campus, an advisory committee of three to five members of the graduate faculty will be formed to guide the student's work. The same committee will be responsible for preparation and administration of thesis exams and also for the review and evaluation of the thesis. The advisory committee chair and at least one other member of the committee shall be members of the program. The other members may be selected from any academic unit including forestry.

Summary of Events

1. The deadlines for receipt of applications and official transcripts in the office of the Graduate School are: (a) the second Saturday in July for admission to the fall semester (b) the last Saturday in November for admission to the spring semester (c) the last Saturday in March for admission to the summer term.
2. Letters of recommendation should reach the Forestry program by the same dates as above.
3. Acceptance by the program and Graduate School should be announced one month or earlier than the desired matriculation date. A thorough review will be made by a screening committee of Forestry graduate faculty and the program adviser. Students rejected for admission will also be notified.
4. Registration for first semester's work after student's acceptance by the program.
5. Appointment of advisory committee chair, written plan for course work, and selection of tentative thesis areas all within first two months of residence.
6. Preparation of formal written thesis outline and preparation of research proposal by the eighth week of the second semester.
7. Completion of final, typed or reproduced review copies of thesis and submission of advisory committee at least three weeks in advance of oral defense of thesis.
8. Oral exam to be followed by completion of required approval forms. If thesis requires modifications, this should be accomplished immediately to reach the graduate dean's office in due time set by the Graduate School. Electronic copies of the completed and approved thesis are submitted to the Graduate School. Electronic copies should also be provided to all committee members. Additional copies may be required for projects sponsored by outside agencies.

Assistantships and Fellowships

Research assistantships are sponsored each year by the McIntire-Stennis Cooperative Forest Research Act and through several externally funded research projects. Teaching assistantships funded by the School of Agricultural Sciences are also available.

In addition to general awards made through the Graduate School, stipends for research studies are available from the U.S.D.A. Forest Service, the U.S. Department of Interior, other federal and state agencies, and private corporations.

Requirements

Since the normal minimum requirement for graduation is 32 credit hours, the completion of degree work for students holding assistantships should be accomplished within four semesters (including summer) which is also the normal maximum span for financial aid.

Per Graduate Program Guidelines for the Master of Science degree in Forestry at least 16 credit hours of the approved academic program must consist of 500 level courses; and, at least three of the 500 level courses must be formally structured.

The student must attain a grade of B or better for all courses specifically required in the student's academic program and which are offered by the Forestry program.

To gain experience, graduate students are expected to assist in the classroom or laboratory for at least one academic semester (20 hours per week) during their tenure with the Forestry program. The remaining semesters will also involve either research or teaching at the rate of 20 hours a week.

Staff

In addition to the faculty listed in the Graduate School Catalog, several adjunct professors may also hold appointments in the Forestry program. These professors are assigned to various natural resource agencies and can serve on graduate guidance committees.

Research Facilities

SIUC is well endowed with a number of different forest types and agricultural land which are available to the Forestry program for teaching and research purposes. In particular, we are conducting or planning research and demonstration programs on forest plots and experimental fields of the 3,000 acres of the University and its experimental farms. We also have access to wooded lands of the 600 acres of the Touch of Nature Outdoor Education Center and other forests.

Through various memoranda of understanding and special use permits we have use of forested lands and plots on the 43,000 acres of the Crab Orchard Wildlife Refuge, the 270,000 acres of the Shawnee National Forest, and the 4,000 acres of the Trail of Tears State Forest, all of which are within an hour's drive of Carbondale. A number of research projects are also ongoing on private lands in southern Illinois. Graduate research has also been conducted throughout the country through agreements with the U.S. Forest Service Experiment Stations and the U.S. Department of Interior, as well as internationally.

A variety of laboratories are housed within the School of Forestry and Horticulture, including those specializing in historical ecology and fire, GIS, human dimensions, and water quality. A research greenhouse operated at the Tree Improvement Center on the western side of the campus is in operation for research and graduate teaching. Greenhouses and growth chamber facilities in the agriculture greenhouses in conjunction with the other programs in the College of Agricultural, Life, and Physical Sciences are also available.

Forestry Courses

FOR401 - Fundamentals of Environmental Education (Same as AGRI 401 and REC 401) A survey course designed to help education majors develop an understanding of environmental education principles and teaching both inside and outside the classroom. Prerequisite: ten hours of biological science or ten hours of recreation and/or education, or consent of instructor. Course fee: $25. Credit Hours: 3

FOR402 - Wildland Hydrology Fundamentals of hydrology as related to forest and wildland water resources will be emphasized. Considerations will include the hydrologic cycle with emphasis on soil and groundwater regimes, evapotranspiration, surface and subsurface runoff, and the quantity and timing of water yield. Credit Hours: 3

FOR403 - Agroforestry This course examines the deliberate integration of forestry and related land management practices within agricultural landscapes, primarily addressing wildlife habitat, water quality, crop yield, and animal production enhancement and sustainability. Emphasis is placed on systems successfully implemented in North America, particularly the Midwest, but international examples will also be discussed. Credit Hours: 3

FOR405 - Forest Management for Wildlife This course is designed to familiarize students with a scientific understanding of the theory and practice of forest management for wildlife. Students will gain knowledge of basic forestry management principles as they apply to wildlife; ecology and management of different types of forests for wildlife; and habitat requirements of forest birds, mammals, and herps and applicable forest management techniques. Credit Hours: 3

FOR409 - International Forest Resources Decision-Making Examines management planning decision-making for multiple-use forests around the world. Reviews concepts useful for analyzing flow-resource problems, emphasizing systems approaches, introduces use of modern quantitative and qualitative methods to evaluate resource use alternatives. Case studies from around the world. Prerequisite: FOR 411. Credit Hours: 3

FOR411 - Forest Resources Economics Application of micro and macro economics principles to forest timber and non-timber production: capital theory, benefit-cost analysis; and economics of conservation. Prerequisites: ABE 204 or ECON 240, FOR 310 and FOR 351, or consent of instructor. Credit Hours: 3

FOR412 - Tree Improvement Basic theories and techniques of obtaining genetically superior trees for forest regeneration. Restricted to 4th Year standing. Credit Hours: 2

FOR415 - Prescribed Burn Planning FOR 415 provides a practical overview of planning, mapping, and execution of prescribed burns for ecological restoration efforts in woodland and prairie habitats or other wildland areas. Emphasis will be placed on writing burn prescriptions, laying out burn units, planning and executing burns, and long term monitoring efforts. This will be accomplished with weekly on-line reading assignments followed by Friday morning field trips to visit burn units, prepare control lines, record weather observations, and conduct fuel model assessments. Course fee: $45. Offered during spring semesters. Prerequisite: FOR 315-Fire in Wildland Management. Consent of instructor. Credit Hours: 2

FOR416 - Forest Resource Management The application of business procedures and technical forestry principles to manage forest properties. Emphasis on integrated resource management for tangible and intangible benefits. Prerequisite: FOR 351, completion of Forest Resource summer camp series or consent of instructor. Course fee: $25. Credit Hours: 4

FOR417 - Forest Planning Forest planners and policy makers are often challenged by questions, such as what to manage forests for, and how to manage forests to achieve the desired goals. This course is designed to introduce students to the evolving theoretical perspectives in the field of planning, from rational-comprehensive planning to communicative action planning, and their influence on forest decision-making within the US as well as internationally. The course will also explore a broad range of approaches to forest management, ranging from community forestry to emerging approaches, such as climate-smart forestry, forest-based adaptation, and adaptive forest governance that promise to enhance the sustainable management of forests in a future that is characterized by climate change impacts and other forces of change. Credit Hours: 3

FOR418 - Marketing of Forest Products The role of marketing in the forest industries; review of economic principles; product policy, planning the product line, pricing, marketing channels, marketing programs, marketing organization, and marketing research as influences on the marketing of lumber, wood products, pulp, and paper. Taught in alternate years. Prerequisite: FOR 411 or consent of instructor. Credit Hours: 2

FOR420 - Park and Wildlands Management The management of state and federal parks and recreation areas. A systems approach toward management and decision-making will be emphasized. Course fee: $50. Credit Hours: 3

FOR421 - Recreation Land-Use Planning Principles and methods for land-use planning of park and recreation environments with emphasis on human dimensions of natural resource research. Focus on planning process and types of information to gather and organize. Application in group field projects. Prerequisite: FOR 220, 420, or consent of instructor. Course fee: $25. Credit Hours: 3

FOR423 - Environmental Interpretation (Same as AGRI 423 and REC 423) Principles and techniques of natural and cultural interpretation. Two hours lecture, three hours laboratory. Prerequisite: ten hours biological science or ten hours of recreation. Field Trip Transportation/Equipment fee: $40. Credit Hours: 3

FOR425 - Habitat Management for Wild Game Introduction to the field of habitat management for wild game species in the Central Hardwood Forest Region of North America. Special emphasis will be placed on providing and manipulating the essential habitat requirements for trophy game including deer, turkey, and upland birds. A holistic approach to habitat management will be emphasized to identify how

management of wild game habitat can satisfy other landowner goals and objectives. Restricted to 3rd Year standing or above or permission of instructor. Credit Hours: 3

FOR428 - Urban Forestry An introduction to principles and practices useful in the management of trees and forests in populated settings. Emphasis is placed on the development of comprehensive management strategies consistent with the biological, physical, economic and social constraints of the urban environment. Credit Hours: 2

FOR429 - Watershed Management Field Laboratory A field intensive laboratory course focused on hydrological and biological methods used to manage watersheds and assess watershed health. Laboratory topics include stream gauging, soil water and ground water sampling, channel morphology, stream benthos measurements, and water quality analysis of stream and lake ecosystems. Field Trip Transportation/Equipment fee: $30. Credit Hours: 2

FOR430 - Wildland Watershed Management Emphasis is placed on the principles, technical problems, procedures, alternatives, and consequences encountered in managing wildland watersheds for the production of quality water in harmony with other uses. Credit Hours: 3

FOR431 - Regional Silviculture This course examines prevailing management practices within each of the major forested regions of the United States. The course is primarily intended for students interested in wildlife habitat, wood production, or restoration. Emphasis is placed on understanding how underlying soils, silvics, climate, biotic agents, social forces, and past uses drive forestry differentially across the country. Prerequisite/Co-Requisite: FOR 310, or consent of instructor. Credit Hours: 3

FOR451 - Wildlife Habitat and Populations This course is designed to familiarize students with a scientific understanding of major topics in wildlife ecology and management, with a special focus on Forestry majors and natural resource inventory techniques. Students will gain knowledge of the history of the field of wildlife management, primary wildlife management principles and practices, ecological theory pertinent to wildlife populations and habitat, and current important issues/problems regarding wildlife management and natural resource inventory. Credit Hours: 3

FOR452 - Forest Soils Forest Soils is designed to give the student a more comprehensive in-depth study of the patterns and processes of soil formation and their relation to forest productivity. Upon completion of the course, student will be familiar with soil/plant interactions, water relationships, and forest soil management for sustainable productivity and environmental quality. This course provides a sound basis for learning basic soils concepts specifically related to forest ecosystems which are beneficial to Forestry majors and those majoring/minoring in Soil Science or related natural science disciplines. Prerequisite: FOR 352 or consent of instructor. Field Trip Transportation/Equipment fee: $25. Credit Hours: 3

FOR452L - Forest Soils Laboratory Companion laboratory for FOR 452. Emphasis is on methods to characterize and evaluate the chemical, physical, and biological properties of forest soils. Field Trip Transportation/Equipment fee: $25. Offered spring semester, even years. Credit Hours: 2

FOR453 - Environmental Impact Assessment in Forestry Methods of assessing the environmental impact of land-use systems on forest resources and assessing the impact of forest management systems on environmental quality are presented. Case studies culminating in the preparation of environmental impact statements are emphasized. Restricted to 4th Year standing in a natural resource major. Field Trip Transportation/Equipment fee: $25. Credit Hours: 2

FOR454A - Forest Ecology Field Studies-Boreal A study of forest communities, soils, and site conditions. Course requires a field trip of about 10 days. Each trip is worth three semester credits; a maximum of 6 credits may be applied toward degree. Restricted to 4th Year standing in natural resources or biological sciences, courses in tree identification, forest ecology, and soils. Special approval needed from the instructor. Field Trip Transportation/Equipment fee: $500. Credit Hours: 3

FOR454B - Forest Ecology Field Studies-Lake States A study of forest communities, soils, and site conditions. Course requires a field trip of about 10 days. Each trip is worth three semester credits; a maximum of 6 credits may be applied toward degree. Restricted to 4th Year standing in natural resources or biological sciences, courses in tree identification, forest ecology, and soils. Special approval needed from the instructor. Field Trip Transportation/Equipment fee: $500. Credit Hours: 3

FOR454C - Forest Ecology Field Studies-Southern Appalachians A study of forest communities, soils, and site conditions. Course requires a field trip of about 10 days. Each trip is worth three semester credits; a maximum of 6 credits may be applied toward degree. Restricted to 4th Year standing in natural resources or biological sciences, courses in tree identification, forest ecology, and soils. Special approval needed from the instructor. Field Trip Transportation/Equipment fee: $500. Credit Hours: 3

FOR454D - Forest Ecology Field Studies-Southern Pine A study of forest communities, soils, and site conditions. Course requires a field trip of about 10 days. Each trip is worth three semester credits; a maximum of 6 credits may be applied toward degree. Restricted to 4th Year standing in natural resources or biological sciences, courses in tree identification, forest ecology, and soils. Special approval needed from the instructor. Field Trip Transportation/Equipment fee: $500. Credit Hours: 3

FOR454E - Forest Ecology: Southwestern Fuels Management A study of forest communities, soils, and disturbance factors in the Southwestern United States. Course requires a field trip of about 8 days. Each trip in the Forest Ecology Series is worth three semester credits; a max of 6 credits may be applied toward student's degree program. The Southwestern Fuels Management course focus is on learning about fuels inventory and the mapping software in use by most federal agencies when developing fuels project work across jurisdictions. A main deliverable of this course will be hands-on experience in writing a fuels project analysis for an ongoing district planning team, learning about fuels, modeling software, and field methods. Students will also have the opportunity to work with an on-site field forester and fire ecologist and visit national historic sites. Prerequisites: FOR 315 or concurrent enrollment and FOR 351 and consent of instructor. Field Trip Transportation/Equipment fee: $500. Credit Hours: 3

FOR460 - Forest Industries Analysis of raw material requirements, the processes and the products of forest industries. The environmental impact of each forest industry will also be discussed. Credit Hours: 2

FOR470 - Wilderness Management, Policy, and Ethics Study of current management philosophy and practice in America's wilderness. Analysis of current wilderness policy and its historical evolution. Discussion of the evolution of the wilderness idea and the individuals that have influenced it. Weekend field trip required. Offered alternate (even) years. Restricted to 4th Year standing. Field Trip Transportation/Equipment fee: $80. Credit Hours: 2

FOR480 - Natural Resource Conflict Management Examines the role and methods of stakeholders in influencing natural resource policies. Emphasis on applied methods, techniques and strategies for conflict resolution, especially collaborative decision making and persuasion theory. Restricted to 3rd Year standing or consent of instructor. Credit Hours: 3

FOR486 - Invasive Plant Ecology and Management (Same as CSEM 486, PSAS 486) Ecology and evolution of invasive plant species, with a focus on land management, including characteristics and biology, introduction and spread, population dynamics, community impacts and ecological interactions, and invasive plant evolution and adaptation, as well as management techniques and considerations, including biological, chemical, and mechanical control. Prerequisite: BIOL 307 or consent of instructor. Restricted to 3rd Year standing. Credit Hours: 3

FOR494A - Practicum-Forest Environmental Assessment Supervised practicum in a professional setting. Emphasis on administration, supervision, teaching and program leadership in community, school, park, forest, institution, and public or private agencies. Students should enroll according to their curriculum specialization. Special approval needed from the instructor. Credit Hours: 1-6

FOR494B - Practicum-Outdoor Recreation Resource Management Supervised practicum in a professional setting. Emphasis on administration, supervision, teaching and program leadership in community, school, park, forest, institution, and public or private agencies. Students should enroll according to their curriculum specialization. Special approval needed from the instructor. Credit Hours: 1-6

FOR494C - Practicum-Forest Resources Management Supervised practicum in a professional setting. Emphasis on administration, supervision, teaching and program leadership in community, school, park, forest, institution, and public or private agencies. Students should enroll according to their curriculum specialization. Special approval needed from the instructor. Credit Hours: 1-6

FOR500 - Principles of Research Research philosophy, approaches to research; theory, hypotheses inference, and predicting; problem identification, project development and organization; methods of data collection, analysis and presentation; drawing conclusions and organizing results. Credit Hours: 2

FOR501 - Graduate Seminar Presentation and critiques of current research project of faculty, graduate student and selected resource persons. Credit Hours: 1

FOR502 - Advanced Watershed Hydrology and Management A study of current issues relating to hydrology and the management of water resources in forested and mixed land-use watersheds. Readings, discussions and projects will focus on research and management topics in water quality and quantity at regional, national and international levels. Prerequisite: FOR 402 or FOR 430 or equivalent or consent of instructor. Credit Hours: 3

FOR504 - Tree Physiology Concepts and Applications in Forest Management A study of physiological concepts and attributes of trees that underlies growth, ontogeny, and reproduction in the context of applied forest management. Physiological concepts will be presented and discussed in a framework that relates their influence on forest stand management activities such as establishing natural regeneration, tree planting, and other silvicultural processes in native, plantation and urban forests as well as forest tree and stand responses to disturbance, and the development and maintenance of old growth. Students who have achieved a passing grade in FOR 404 are not eligible to take this course. Prerequisite: PLB 200, or FOR 201, or FOR 331 or a plant physiology course. Credit Hours: 3

FOR506 - Advanced Landscape Ecology Review and evaluation of current research and concepts in landscape ecology management. Principles of landscape ecology in the context of forested systems will be presented and discussed. Emphasis on how spatial heterogeneity and human activities influence landscape patterns. Students who have taken FOR 406 are ineligible to enroll. Prerequisite: G.I.S. course or consent of instructor. Credit Hours: 3

FOR508 - Historical Ecology Introduction to the basic concepts and foundations of historical ecology, a discipline which joins traditional ecology with an investigation of human landscape transformation. Emphasis is placed on the interdisciplinary approach to historical ecology with readings in pollen analysis, dendrochronology, land-use history, archival and historical sources, and traditional vegetation surveys and reconstructions. Offered alternate years. Prerequisite: 300 level plant ecology course or equivalent or consent of instructor. Field trip cost approximately $35. Credit Hours: 2

FOR510 - Advanced Silviculture: Landscape Rehabilitation Current and emerging issues in silviculture and landscape-scale natural resource and agricultural sustainability are addressed at the individual manager/farmer or small community level. Case studies consider underlying physical and biological principles underlying successful rehabilitation practices across a wide range of social contexts and physical landscapes. Experimental methodologies and their application to management problems are critiqued. Water, grazing, food crop, wildlife/biodiversity conservation, and biofuels are emphasized with accommodations for students with related interests. This course is intended for students with undergraduate training or practical backgrounds in natural resource management or agriculture and who are seeking to integrate these disciplines toward developing actionable solutions. Special approved needed from the instructor. Credit Hours: 2

FOR511 - Advanced Forest Resources Economics Application of microeconomic, macroeconomic and capital theory to forest resource problems; introductory econometric methods; long range supply and demand projections; international forest economics and policy problems decision theory in forest resource management. Offered alternate years. Prerequisite: FOR 411 or equivalent or consent of instructor. Credit Hours: 2

FOR512 - Tree Selection and Breeding Quantitative methods of describing variation patterns of trees, testing genetic and environmental effects and interactions and evaluations of tree improvement program. Prerequisite: FOR 412 or consent of instructor. Credit Hours: 2

FOR515 - Advanced Urban Ecosystem Management An examination of concepts and processes associated with urban environments. Physical, chemical, and biological stresses associated with land use change and urban sprawl will be discussed and presented with a focus on water resources. Class

discussion, readings, and projects will concentrate on current research in the urban environment. Restricted to graduate standing or consent of instructor. Credit Hours: 3

FOR516 - Advanced Forest Management Case studies in forest land management, management planning, utilizing computer programming, CFI and TSI role in long range management planning. Credit Hours: 2

FOR520 - Advanced Park Planning Study of nature and functions of the recreation environmental planning process in theoretical and policy terms. Types of plans at local, regional and state levels. Evaluation of different types of planning approaches and their utility in particular situations. Offered alternate years. Prerequisite: FOR 421 or consent of instructor. Credit Hours: 2

FOR521 - Recreation Behavior in Wildlands Environments Review of sociological and psychological theories relevant to outdoor recreation planning; management alternatives. Review of current behavior research in outdoor recreation. Application of behavioral concepts to recreation planning and administration. Offered alternate years. Credit Hours: 2

FOR523 - Advanced Resource Interpretation Survey of theories and methods relating to resource interpretation planning and practice resulting from research in communication, education and marketing. Examines case studies and existing issues current to the profession of interpretation. Stresses relationship between theory and application. Prerequisite: FOR 423 or consent of instructor. Offered alternate years. Credit Hours: 2

FOR528 - Urban Tree Management Establishment and maintenance of trees as beneficial components of urban environments. Tree functionality is addressed from biological, social, and economic opportunities and constraints commonly associated with cities and towns. Management of trees and wooded areas within ecological urban landscapes is addressed from the perspective of multiple constituencies. This course is primarily intended to be taken as part of the ecological urban landscapes graduate program and is offered Online Only. May be taken as a substitute for FOR 428. Students who have achieved a passing grade in FOR 428 are not eligible to take this course. Credit Hours: 3

FOR530 - Forest Site Evaluation A discussion of the factors affecting site quality and their use in present site evaluation methods. Lectures will draw upon recently published scientific literature as well as forest research data collected and analyzed for southern Illinois forests. Laboratories will include sampling of forest sites and stands with subsequent analysis of data using graphic and statistical techniques and a computer to develop site evaluation models. Prerequisite: BIOL 307 or consent of instructor. Cost: $20. Credit Hours: 2

FOR531 - Disturbance Ecology Provide a historical overview and current perspective on major topics in forest ecology including natural disturbance, gap and patch dynamics, and relevant restoration ecology techniques. This is accomplished through a critical examination of the literature through reading, group discussions, and field trips. Two to three field trips will be organized during the semester to observe the effects of natural disturbance with an approximate total cost of $25 per student. Offered alternate years. Credit Hours: 2

FOR550 - Hierarchical Modeling in Ecology: Introduction to Bayesian Analysis Based explicitly in R, this course demonstrates an applied approach to Bayesian inference of hierarchical models. Side-by-side comparison of Classical and Bayesian analyses will be illustrated. Course content will focus on problems in wildlife ecology but will likely translate to other disciplines. Graduate-level statistics and R experience is beneficial but not required. Credit Hours: 2

FOR551 - Wildlife-Habitat Relationships Theory and practice of analyses pertaining to the study of wildlife-habitat relationships. Understanding of common data collection techniques in wildlife and forestry science. Use of computers, statistical programs, and other forms of data analysis. Ability to work on practical and applied problems in wildlife conservation. Special approval needed from the instructor. Credit Hours: 3

FOR561 - Spatial Ecology Current and emerging topics in spatial ecology that serve to confront conservation and management issues in natural resources. This course will introduce students to the study of how space directly and indirectly affects ecological processes that drive biodiversity and ecosystem functioning. Readings cover topics from quantifying spatial patterns to evaluating ecological

responses to space. Offered spring semester of even years. Restricted to graduate standing or consent of instructor. Credit Hours: 2

FOR585 - Human Dimensions of Natural Resource Management Multidisciplinary study of influences and constraints on human-renewable natural resource interactions. Readings, discussion and problem solving to enhance appreciation of human dimensions as an integral component of natural resource management. Emphasis on diverse perspectives on forest, fisheries, and wildlife; conceptual frameworks and research methodologies. Offered alternate (odd) years. Credit Hours: 3

FOR588 - International Graduate Studies University residential graduate program abroad. Prior approval by the program is required both for the nature of program and the number of hours of credit. Credit Hours: 1-6

FOR590 - Readings in Forest Resources Intensive consideration is given to current practices and problems in forestry. Special approval needed from the instructor. Credit Hours: 1-4

FOR591A - Directed Studies in Forest Resources-Dendrology Intensive study of disciplines fundamental to forestry. Study of the identification of native and exotic trees. Special approval needed from the instructor. Credit Hours: 1-4

FOR591B - Directed Studies in Forest Resources-Forest Autecology Intensive study of disciplines fundamental to forestry. Study of the physiology of individual tree species in relation to their environment. Special approval needed from the instructor. Credit Hours: 1-4

FOR591C - Directed Studies in Forest Resources-Forest Community Ecology Intensive study of disciplines fundamental to forestry. Study analysis and integration of tree growth, forest structure and classification in relation to climate/edaphic factors as an ecological basis for forest management. Special approval needed from the instructor. Credit Hours: 1-4

FOR591D - Directed Studies in Forest Resources-Forest Measurements Intensive study of disciplines fundamental to forestry. Study of measurement, statistical and data processing concepts; volume, growth, yield of forest products and methods of sampling forest resources. Special approval needed from the instructor. Credit Hours: 1-4

FOR591E - Directed Studies in Forest Resources-Forest Recreation Intensive study of disciplines fundamental to forestry. Study of principles and methods for land-use planning of park and recreation environments. Special approval needed from the instructor. Credit Hours: 1-4

FOR591F - Directed Studies in Forest Resources-Silviculture Intensive study of disciplines fundamental to forestry. Study of concepts and techniques utilized in the silvicultural treatment of forests. Special approval needed from the instructor. Credit Hours: 1-4

FOR591G - Directed Studies in Forest Resources-Wildland Fire Management Intensive study of disciplines fundamental to forestry. Study of all aspects of fire as a phenomenon in wildland management. Special approval needed from the instructor. Credit Hours: 1-4

FOR591H - Directed Studies in Forest Resources-Forest Soils Intensive study of disciplines fundamental to forestry. An introduction to the characterization and fundamental concepts of forest soils and their relationships to forest communities and forest management practices. Emphasis is on the chemical, biological, and physical properties of forest soils as related to forests and forest management. Credit Hours: 1-4

FOR591I - Directed Studies in Forest Resources-Mapping and GIS Integrate the use of mapping, orthophotographs, and field information to evaluate resources in the development of land management plans. Topics covered range from orthophoto interpretation, to GIS database management, and vegetation mapping. Course includes classroom presentation, field trips, and laboratory exercises. $50 Field trip fee. Credit Hours: 3

FOR593 - Individual Research Directed research in selected fields of forestry. Credit Hours: 1-4

FOR599 - Thesis A minimum of three and a maximum of eight hours to be counted toward a Master's degree. Credit Hours: 1-8

FOR601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Forestry Faculty

Akamani, Kofi, Associate Professor, Ph.D., University of Idaho, 2011; 2011.

Carver, Andrew, Professor, Ph.D., Purdue University, 1998; 1998.

Groninger, John W., Professor, Ph.D., Virginia Polytechnic Institute and State University, 1995; 1997.

Holzmueller, Eric J., Professor, Ph.D., University of Florida, Gainesville, 2006; 2007.

Nielsen, Clayton K., Professor, Ph.D., Southern Illinois University Carbondale, 2001; 2009.

Park, Logan, Associate Professor, Ph.D., Virginia Polytechnic Institute and State University, 2009; 2010.

Pease, Brent, Assistant Professor, Ph.D., North Carolina State University, 2021; 2021.

Ruffner, Charles M., Professor, Ph.D., Pennsylvania State University, 1999. 1999.

Schoonover, Jon E., Professor, Ph.D., Auburn University, 2005; 2006.

Williard, Karl W. J., Professor, Ph.D., Pennsylvania State University, 1999; 1999.

Zaczek, James J., Professor, Ph.D., Pennsylvania State University, 1994; 1997.

Emeriti Faculty

Chilman, Kenneth C., Associate Professor, Emeritus, Ph.D., University of Michigan, 1972; 1973.

Mangun, Jean C., Associate Professor, Emeritus, Ph.D., Purdue University, 1991; 1996.

Phelps, John E., Professor, Emeritus, Ph.D., University of Missouri, 1980; 1990.

Geography and Environmental Resources

The School of Earth Systems and Sustainability offers a program that leads to the Master of Science degree in Geography and Environmental Resources. It also houses an interdisciplinary Doctor of Philosophy in Environmental Resources and Policy.

Geography and Environmental Resources is the study of how humans modify, impact, adapt to, monitor, and manage the natural environment. Students in the M.S. program study the dynamic relationship between nature and society in the field and the computer laboratory as well as in the traditional classroom. Students choose from two concentrations: environmental geography and sustainability and geographic information science.

Graduate students in Geography and Environmental Resources take core courses that provide them a strong disciplinary foundation, then work with a faculty advisor to develop a research focus area with appropriate analytical and research skills.

The graduate program stresses a problem-solving perspective, for which skills of critical analysis and dialogue are essential. Geography maintains strong collaborations with many other SIU Carbondale (SIUC) programs and students are encouraged to take advantage of courses and faculty expertise in other units. Each student’s progress is assessed at regular intervals by the faculty and provided with feedback. Students are expected to show continued progress in carrying out the program of study, and in developing habits of scholarship and professionalism.

This program requires a $65 nonrefundable application fee that must be submitted with the application for Admissions to Graduate Study in Geography and Environmental Resources. Applicants must pay this fee by credit card when completing the online application. Questions regarding the program can be directed to geog@siu.edu.

Master of Science (M.S.) in Geography and Environmental Resources

Advisement

Students newly admitted to the M.S. in Geography and Environmental Resources degree program are advised by the graduate program director, with the assistance of program faculty. Students choose a permanent adviser at the end of the first semester in residence. The choice of permanent adviser and advisory committee is made in consultation with the graduate faculty, taking into consideration such matters as faculty expertise and faculty advisee loads.

Degree Requirements

To obtain the M.S. in Geography and Environmental Resources degree, the student shall:

1. Complete all degree requirements specified by the Graduate School, and explained under degree requirements, M.S. in Geography and Environmental Resources degree program in the *Graduate Catalog*. A total of 30 Graduate Credit Hours must be completed, with 50% of these hours at the 500 level or above.
2. Include as required courses the following: GEOG 500, Principles of Research, during the first fall semester in residence; GEOG 501, the following semester; GEOG 504, Spatial Analysis, or GEOG 512, Applied Geographic Statistics or equivalent. GEOG 502, Geographic Information Systems is recommended depending on the student's background.
3. In consultation with an adviser, develop a program of study, identifying courses to be taken, research skills to be developed, deficiencies to be rectified. This shall be approved by the faculty. The program of study shall include a core of substantive courses in geography and environmental resources, as explained in the policy statement on core curriculum for master's degree students, available from the graduate program director. The program of study may include courses offered by other programs. The graduate faculty will meet to review and approve/disapprove the program of study of each M.S. in Geography and Environmental Resources degree student enrolled in GEOG 500. An approved program of study will be filed with the graduate program director as part of GEOG 500.
4. Develop a thesis or research paper proposal. The thesis or research paper proposal must be approved by the student's master's advisory committee before the student registers for GEOG 599, Thesis, or GEOG 593A-C, Research in Geography and Environmental Resources. A total of six credit hours of GEOG 599 may be awarded for a thesis at the discretion of the advisory committee upon final examination on the thesis (see #5 below). A total of three credit hours may be awarded for a research paper.
5. Submit a thesis or research paper to the advisory committee at least two weeks before the defense. A student who writes a thesis will be examined by the committee at a meeting that may be attended by other faculty and students. A research paper may be evaluated and approved by the advisory committee with or without public presentation.

Environmental Geography and Sustainability Concentration

Environmental Geography and Sustainability is for students who want training in physical and social aspects of environmental and sustainability science. We focus on the interactions between people, natural resources, policies, and the environment. Relevant skills and techniques include the ability to collect, evaluate, and analyze social and environmental data, engage with stakeholders, assess policy, and solve environmental problems. Students in Environmental Geography and Sustainability pursue

careers as sustainability consultants, environmental managers, environmental educators, community organizers, environmental regulators, and more.

Geographic Information Science Concentration

Geographic Information Science is for students who are interested in environmental applications of geospatial technologies, such as GIS and remote sensing. GIS links locational and database information to enable people to visualize patterns, relationships and trends. Students in Geographic Information Science develop skills related to cartography, geographic data management, and quantitative methods and pursue careers spanning the public and private sectors. Career options for those pursuing the Geographic Information Science specialization include GIS analyst, GIS manager, data scientist, environmental consultant, and others.

Doctor of Philosophy (Ph.D.) in Environmental Resources and Policy

The central focus of the Ph.D. in Environmental Resources and Policy is advanced interdisciplinary training and research on geological, physical, biological, and social processes responsible for natural resource and environmental problems facing contemporary society. Additionally, the Ph.D. in Environmental Resources and Policy focuses on assessing public policy alternatives to address those problems and create new opportunities.

Within the broad and flexible Environmental Resources and Policy framework, a customized program is developed for each student, permitting them to conduct research in traditional and non-traditional earth science sub disciplines, under the direction of one or more Geology faculty members. Please see the Environmental Resources and Policy section of this catalog for detailed information and admission procedures.

Certificate in GIS

The GIS post-baccalaureate certificate enables students to focus on advanced geospatial techniques and analytical skills. This certificate meets the needs of the expanding job opportunities for Masters' and Ph.D. students. Students must be admitted to an SIUC graduate program or the SIUC non-declared graduate program and maintain a 3.0 GPA in the certification courses. This certificate ensures that the students understand advanced mapping technologies; know how to combine individual models and functions in ArcGIS to carry out a complicated spatial analysis task; master advanced digital image processing and analysis technologies; and obtain competence in designing, developing, and managing spatial databases. Further, they will demonstrate an understanding of GIS's relationships with remote sensing, global positioning system (GPS), mathematics, statistics, and other sciences and obtain capacity in integrating multi-disciplinary methods for problem-solving. Finally, they will be competent in planning, developing, and implementing a complex GIS project. The program requires students to complete 18 credit hours of graduate level coursework from the following:

- GEOG 502: Geographic Information Systems (3 CH)
- GEOG 504: Spatial Analysis (3 CH)
- GEOG 506: Intro to Remote Sensing (3 CH)
- GEOG 508: Advanced Remote Sensing (3 CH)
- GEOG 520: Advanced GIS Studies (3 CH) -OR- GEOG 517: GIS Programming and Customization (3 CH)
- GEOG 528: GIS Portfolio/GIS Capstone Project (3 CH)

Certificate in Sustainability

The Sustainability post-baccalaureate certificate enables students to expand their knowledge and understanding of the long-term sustainable use of the earth's resources, including water, land use and

food systems, climate change, urban sustainability, and “green” energy. This certificate meets the needs of the expanding job opportunities in environmental sustainability. Students must be admitted to an SIUC graduate program or the SIUC non-declared graduate program and maintain a 3.0 GPA in the certification courses. The program requires students to complete 18 credit hours of graduate level coursework, as follows:

- GEOG 521: Urban Sustainability (3 CH)
- GEOG 524: Sustainable Development (3 CH)
- GEOG 536: Natural Hazards (3 CH)
- GEOG 539: Global Climate Change (3 CH)
- GEOG 570: Contemporary Issues in Environmental Studies (3 CH)

Plus, one of the following:

- GEOG 502: Geographic Information Systems (3 CH)
- GEOG 512: Applied Geographic Statistics (3 CH)

Geography and Environmental Resources Courses

GEOG419 - Enterprise GIS Planning and Implementation Students will gain both theoretical and practical understanding of the design process of enterprise GIS; be able to assess the scope of a system and address data and technology requirements of that system; become exposed to a host of the state-of-the-art tools and concepts in enterprise GIS; and learn skills for hardware, software and computer networking issues. Students are expected to have a basic working knowledge of ArcGIS and ArcIMS. Prerequisite: GEOG 401 or consent. Lab fee: $20. Credit Hours: 3

GEOG430 - Environmental Systems Analysis Exploration of the major environmental systems relevant to planning. Topics include concepts of systems and system behavior; basics of systems analysis and modeling environmental systems; environmental fluxes of energy and materials (e.g., hydrologic cycle, carbon cycle, energy budgets, erosion and sediment transport, role of biosphere in organizing fluxes); environmental variability. Credit Hours: 3

GEOG452 - Environment and Population Introduction to population geography. Emphasis is on the relationships between population trends, resource use patterns and environmental impacts. Topics include methods and data used to describe and predict populations, theories of population and policy issues that relate to the interaction between population, quality of life and environmental quality. Prerequisite: GEOG 320 or consent of instructor. Credit Hours: 3

GEOG457 - American Environmental History (Same as HIST 457) An exploration of the attitudes toward and the interaction with the natural resource environment of North America by human settlers. Coverage from the Neolithic Revolution to the present. Credit Hours: 3

GEOG458 - Applied GIS This course provides practical GIS applications and draws from special topics in data visualization and environmental applications. The topic on data visualization includes an overview of techniques for visualizing large-scale datasets and is inspired by concepts from information visualization. Topics in environmental applications consist of risk assessment, digital elevation model processing, and watershed delineation and hydrological modeling. Students taking this course will distinctively learn: (1) how to visualize geographic data; (2) how to use different environmental risk assessment methods; (3) how to assess, detect, and characterize environmental risks and potential threats; and (4) how to create meaningful visualization scenes to support environmental decision-making. Active learning experiences will be achieved through the use of classroom lectures, lab exercises, group tasks, and presentations. Prerequisite: GEOG 401 or GEOG 310I or consent of instructor. Lab fee: $20. Credit Hours: 3

GEOG471 - Environmental Impact Analysis Techniques of assessing the impact of human activities on the environment, including weighting schemes, cost-benefit analysis, linear programming, ecological impact assessment. Emphasis is on placing NEPA and EIS writing in legal, economic, and environmental perspective. Credit Hours: 3

GEOG481 - Cooperative Work Experience in Geography Placement of advanced undergraduate or graduate student in private or public organization for one or more semesters in paid career-related position identified by student. Student gains professional experience, under faculty and on-site supervision. A report or professional poster on the work is required at the end of the semester. Three credit hours of either 480 or 481 may apply toward requirements for a Geography undergraduate major or graduate degree. Restricted to students majoring in Geography and Environmental Resources or minoring in Environmental Studies. Special approval needed from the program. Credit Hours: 3-12

GEOG500 - Principles of Research This course teaches students the key components of graduate research: identify a research problem, determine research questions, structure a literature review, and develop research methods. Examples of geographic research are discussed and students work to identify independent research projects. The course culminates with students developing their own research proposals. Credit Hours: 3

GEOG501 - Research Methods Students enrolled in research methods will work directly with their faculty mentor to complete background research on methods of analysis required to complete proposed graduate work. Specific topics will depend on the mutual interests of the student and faculty member and may include qualitative and quantitative approaches to graduate-level research. Credit Hours: 3

GEOG502 - Geographic Information Systems This course will prepare students with comprehensive working knowledge and technical skills related to geographic information systems (GIS). It covers important topics in the context of GIScience, including coordinate systems and georeferencing, data structures (vectors and rasters), map principles and design, spatial analysis and modeling, GPS, GIS data sources, and data uncertainty, which are critical to support the implementation of a GIS project. A series of GIS labs and a leadership role on a final class project will help equip students with necessary skills (e.g., mapping, spatial analysis, and geocoding) to fulfill the tasks of an entry-level GIS position. Graduate students are expected to demonstrate in-depth problem-solving skills and complete a term paper with additional requirements. Students who have passed GEOG 401 are not eligible to enroll in GEOG 502. Lab fee: $40. Credit Hours: 3

GEOG504 - Spatial Analysis This spatial analysis course is an introduction to spatial statistical methods for geographers. The course provides an overview of the application of spatial statistical theories, concepts and approaches in the general context of the emerging fields of geographic information systems (GIS) and science (GISci). The main focus of this course is on how techniques for the analysis of spatial data can be effectively applied in a GIS environment, with a particular emphasis on the study of spatial patterns, distributions, and associations. Moreover, students will learn how to integrate the advanced spatial analysis technologies with GIS, computer science and mathematics to solve practical problems. Students are also required to read research articles and write three literature review essays to learn the state of the arts in spatial analysis. Students who have passed GEOG 404 are not eligible to enroll in GEOG 504. Prerequisite: GEOG 401 or GEOG 502 with a grade of C or higher, or consent of instructor. Lab fee: $40. Credit Hours: 3

GEOG506 - Introduction to Remote Sensing This course is an introduction to the fundamentals of remote sensing and application to environmental management. In addition to the theoretical and applied approaches associated with the use and analysis of aerial photography and satellite imagery, this course provides an introduction to advanced satellite systems and their development. These include how remote sensing data are acquired, displayed, analyzed and applied, and how environmental information can be extracted from such data and integrated with other spatial data. Students will be introduced to manual interpretation and digital image processing and analysis techniques of remotely sensed imagery and will have the opportunity to gain hands-on experience using image processing software. Through reading research articles and writing three literature review essays, in addition, students will learn the state of the art, potential developments, and the important remote sensing programs such as Landsat in detail. More importantly, students will learn how to integrate remote sensing with geographic information science, global positioning systems, computer science, mathematics, statistics, and other fields, to solve practical problems in the fields of geography and environment. Students who have successfully passed GEOG 406 are not eligible to enroll in GEOG 506. Lab fee: $60. Credit Hours: 3

GEOG508 - Advanced Remote Sensing Advanced techniques in the analysis of remotely sensed data. Focus is placed on advanced digital image processing algorithms and contemporary analysis and modeling approaches using state-of-the-art technologies. This course will also emphasize integration of multidisciplinary approaches from mathematics, statistics, computer science, geographic information

system (GIS), geography and environmental science to advance image analysis and application. Students will be expected to develop individual problem-driven projects that use the knowledge, tools, advanced techniques and skills developed in this course for solutions to real world problems. This course will enhance the ability of students to independently conduct remote sensing relevant research work through reading research articles and writing literature review essays and completing course projects. Students who have passed GEOG 408 are not eligible to enroll in GEOG 508. Prerequisite: GEOG 406 or GEOG 506, with grade of C or higher, or consent of instructor. Lab fee: $60. Credit Hours: 3

GEOG512 - Applied Geographic Statistics Introduction to statistical methods and skills related to the application of statistics to problems in geography. Lectures are supplemented with practical exercises to stress the applied nature of statistics in environmental problem solving. Topics covered include descriptive statistics, time series, probability, point and interval estimation, hypothesis testing, correlation and regression, analysis of variance, and spatial statistics, and other special topics relevant to enrolled students. Students who have passed GEOG 412 are not eligible to enroll in GEOG 512. Credit Hours: 3

GEOG513 - Research Methods for Environmental Social Science This course provides a foundation in social inquiry for environmental scientists. Topics include quantitative and qualitative social science research methods that can be applied to understand and identify solutions to complex socio-environmental issues. Research paradigms, research design, sampling frameworks, measurement, and the ethics of social research will be discussed. The course structure includes a combination of lectures, seminar-style discussions, and in-class activities. Credit Hours: 3

GEOG516 - Cartographic Design Introduction to the concepts and principles of map design and automated cartographic techniques used to promote the understanding of a map as a powerful communication model. Students will examine techniques for the representation, manipulation, display, and presentation of spatial data using computer mapping techniques and graphics software. This course will also provide an introduction of contemporary map-making and communication technologies and their applications for solutions of real world problems. Team-based projects will address a geographic or environmental problem and produce professional maps. In addition, through reading research articles and writing three literature review essays, students will learn the history of cartographic design, the state of the arts and potential developments in detail. Students will learn how to integrate cartographic design with spatial analysis, geographic information science, Global Positioning System, remote sensing, computer sciences, and statistics, to solve practical problems in geography and other environmental fields. Students who have passed GEOG 416 are not eligible to enroll in GEOG 516. Prerequisites: GEOG 401 or GEOG 502, with grade of C or higher, or consent of instructor. Lab fee: $40. Credit Hours: 3

GEOG517 - GIS Programming and Customization GIS programming trains students in customizing GIS applications and streamlining spatial analysis by assembling functions provided by the underlying GIS platforms. This course is an introduction to programming and scripting for intermediate GIS users who need to automate the geoprocessing of GIS datasets. This course focuses the most popular commercial platform, ArcGIS ModelBuilder and Python Scripting for ArcGIS. Through this course, students will understand the object-oriented programming principles, master the advanced skills of building a complex workflow for GIS analysis, and develop customized geoprocessing programs to edit, manipulate and analyze spatial data using ArcPy and Python. Graduate students are expected to develop in-depth analytical procedures for addressing complex GIS problems, and to present the results in the form of oral presentations and written reports. Students who have passed GEOG 417 are not eligible to enroll in GEOG 517. Prerequisite: GEOG 401 or GEOG 502, with grade of C or higher, or consent of instructor. Lab fee: $40. Credit Hours: 3

GEOG520 - Advanced GIS Studies This course focuses on advanced conceptual and technical issues underlying GIS, including GIS data modeling, geodatabase model and structure, analytical methods and procedures associated with geospatial modeling, and the latest developments in geospatial sciences. Laboratory assignments include the analysis of digital geographic information of physical and social phenomena, emphasizing the use of standard GIS software to illustrate techniques of geodatabase, map digitization, spatial data exploration, spatial analysis/modeling, and GIS-based decision support. Graduate students will independently design, implement and present a GIS project that takes full advantage of advanced GIS theories and techniques to solve spatial problems. Students who have passed GEOG 420 are not eligible to enroll in GEOG 520. Prerequisite: GEOG 401 or GEOG 502, with grade of C or higher, or consent of instructor. Lab fee: $40. Credit Hours: 3

GEOG521 - Urban Sustainability Students develop professional expertise to identify, analyze and explain urban problems and their sustainable solutions. Students use a geographic perspective to develop novel inquiries through independent research about the meaning and application of sustainability in an urban setting. Students who have passed GEOG 421 are not eligible to enroll in GEOG 521. Credit Hours: 3

GEOG522 - Environmental and Energy Economics Economics of renewable and nonrenewable natural resources management and environmental policy. Topics covered include: static and dynamic efficiency, market efficiency and market failures (market power, externalities, and public goods), the economics of nonrenewable resource extraction, renewable resources management (with a focus on forests and water), mechanism design choices and their implementation in the real world, and the role of the private and public sectors in research and development. Students that have successfully passed GEOG 422 are not eligible to enroll in GEOG 522. Credit Hours: 3

GEOG524 - Sustainable Development Students will develop professional expertise to analyze multiple dimensions of sustainable development focusing on institutions with impacts that vary from local to global scales. In addition to learning about extant examples of sustainable development initiatives, students conduct independent research to expand academic understanding of the concept of sustainable development. Students who have successfully passed GEOG 424 are not eligible to enroll in GEOG 524. Credit Hours: 3

GEOG526 - US Environmental Policy This course investigates the US system of environmental regulation: the background of social and environmental movements that influence US policy and the agencies involved in US environmental regulation. Emphasis is on US regulations and US participation in global environmental policies. Overall, the focus is on spatial variations in environmental regulations; or the geography of environmental quality. Credit Hours: 3

GEOG528 - GIS Portfolio/Capstone Project Students propose a topic and independently develop, design and implement a GIS research project for solution of a real world problem with guidelines and guidance from the instructor. The focus is placed on integration of multidisciplinary methods and multi-source spatially referenced and aspatial data to search for an effective solution for a real world problem. Submission of a project portfolio or a research paper with a poster is required for successful completion. Prerequisite: GEOG 401 or GEOG 502 and GEOG 406 or GEOG 506, with a grade of C or higher, or consent of instructor. Lab fee: $20. Credit Hours: 3

GEOG529 - Geography of Local and Organic Food A graduate level course related to food systems. Focus on local issues such as farmer decision-making, landscapes, sense-of-place, marketing, etc. to national/global concerns including organic certification, corporate influences, agricultural productivity, food safety, etc. Students who have passed GEOG 429 are not eligible to enroll in GEOG 529. Credit Hours: 3

GEOG531 - Climate Data Analysis This course focuses on identifying, locating, and applying appropriate climate data sets (e.g., station observations, atmospheric reanalyses, and climate model output), techniques for obtaining and processing these data sets, and methods commonly used for applied climate analysis. Student-lead, applied research projects provide students with the opportunity to utilize a variety of data sets and analytical tools introduced during the semester. The curriculum is organized around graduate-level research projects that utilize climate data sets. Students will become familiar with a range of computational packages, including Matlab. Students should have a basic understanding of climatology and statistics prior to taking this class. Students who have passed GEOG 431 are not eligible to enroll in GEOG 531. Credit Hours: 3

GEOG533 - Advanced Field Methods in Geography Quality graduate level geographic research depends on obtaining reliable data through an informed research design. Exploring both social and environmental processes, students will actively participate in developing and conducting research. Using the SIU Carbondale campus and surrounding region as a laboratory, lab exercises will include human geography, geomorphology, hydrology, climatology, spatial analysis, and biogeography. As a graduate level class, advanced analytical techniques will be presented and utilized by the students. These techniques will include graduate level statistics and spatial analysis. Students who have successfully passed GEOG 433 are not eligible to enroll in GEOG 533. Lab fee: $40. Credit Hours: 3

GEOG534 - Water Resources Hydrology This course covers the major components of the hydrologic cycle with emphasis on surface water and fluvial (stream) processes. Students will gain a detailed

understanding of the major hydrologic processes and develop substantial experience in collecting, compiling, and analyzing hydrologic data for use in water resource analysis and management. In addition, they will learn and demonstrate their proficiency in using advanced statistics and spatial analyses used in hydrologic research. Students that have successfully passed GEOG 434 are not eligible to enroll in GEOG 534. Lab fee: $20. Credit Hours: 3

GEOG536 - Natural Hazards This course introduces students to the geophysical and human dimension of natural hazards and focuses on five main areas: 1) characterization of natural hazards; 2) human dimensions of natural hazards; 3) natural hazard risk assessment; 4) natural hazard mitigation planning; and 5) the use of geospatial tools and models used in risk assessments and mitigation planning activities. It is expected that graduate students will develop an advanced understanding of both geophysical and human dimensions of natural hazards. They will also learn and then demonstrate their proficiency in using advanced statistics and spatial analyses used in hazards research. Students who have successfully passed GEOG 436 are not eligible to enroll in GEOG 536. Lab fee: $20. Credit Hours: 3

GEOG539 - Global Climate Change This course examines the major environmental, social and policy impacts and solutions related to global climate change, including anthropogenic greenhouse gas emissions, land use/land cover change, extinction and biodiversity, environmental communication, climate hazards, and potential climate change related impacts on human health. Students that have successfully passed GEOG 439 are not eligible to enroll in GEOG 539. Credit Hours: 3

GEOG540 - Rivers and Their Management In this class, students will develop an advanced understanding of the linkages between physical river processes and the services rivers provide to society. The topics covered in this course include river hydrology, fluvial geomorphology, river management, and human impacts on rivers and their ecosystems. Students will gain an advanced knowledge and experience in collecting, compiling, and analyzing hydrologic, sedimentological, and hydraulic data for use in quantitative analyses and management. Students will also be expected to be able to synthesize and then present key concepts and ideas from the academic literature to their peers. This additional level of scholarship will be demonstrated through graduate student led seminars. Students who have passed GEOG 440 are not eligible to enroll in GEOG 540. Lab fee: $20. Credit Hours: 3

GEOG544 - Soils and Human Health Exploration of the ways that soils, and to a lesser extent air and water, influence human health both positively and negatively. Soil properties and processes that control this interaction. Techniques used to explore the soil-human health relationship and needs for future advancement. Prerequisite: CSEM 240 or GEOG 303I or FOR 352 with a grade of C or better. Credit Hours: 3

GEOG554 - Conservation and Environmental Movements This course covers topics that include: environmental non-governmental organizations (ENGOs), human perceptions of the environment, theories of human interactions with nature, conservation literature, key environmentalists, historical environmental movements, societal perception of nature, and impacts of environmentalism on policy. Students who have successfully passed GEOG 454 are not eligible to enroll in GEOG 554. Credit Hours: 3

GEOG555 - Environmental Behavior Change This course will cover foundational psychological principles and theories related to how people think about, feel about, relate to and experience the natural environment. Students will learn how these theories and principles can be applied to change behavior and encourage environmental sustainability. Throughout the semester, students will practice drawing upon their theoretical knowledge to design behavioral interventions and communication strategies of their own. Students will also learn to design studies to evaluate whether those interventions are effective in achieving their goals. Finally, students will learn to read, understand, evaluate and critique peer-reviewed psychological research papers. Readings will be drawn from several areas of psychology, including behavioral, social, cognitive and experimental psychology. The course structure includes a combination of lectures, seminar-style discussions and in-class activities. Credit Hours: 3

GEOG556 - Geographic Visualization In addition to an overview of the theories, concepts and approaches of geographic visualization, this course will provide an introduction of advanced methods for information visualization, data quality assessment, and communication enhancement in the fields of exploratory data analysis (EDA), cartographic design, thematic mapping, web cartography, map animation, virtual environment, and multimedia applications. Students will learn the use of commercial software packages commonly used for graphic-based applications and complete the required hands-

on exercises. However, the focus is put on integration of multidisciplinary methods for geographic visualization. Students will also learn about contemporary technologies through writing literature review essays and completing a course project. Students who have successfully passed GEOG 456 are not eligible to enroll in GEOG 556. Lab fee: $30. Credit Hours: 3

GEOG565 - Introduction to Energy Geography This course explores energy as a critical geographic and social phenomenon, emphasizing the spatial and temporal dimensions of energy distribution, availability, accessibility, and acceptability. Students will (1) understand energies beyond disciplinary technical and engineering domains but from interdisciplinary geographic perspectives, and (2) examine the interplay between energy and place, as well as the relationships between energy and people. The course covers both physical and social perspectives, offering a comprehensive understanding of the complexities of energy systems, their role in economic development, environmental sustainability, and community resilience. Prerequisite: GEOG 502 with a grade of C or better. Credit Hours: 3

GEOG570 - Contemporary Issues in Environmental Studies Topics may include history of environmentalism, conservation/preservation, US environmental policy, green jobs, innovative technology, sustainability, environmental non-governmental organizations, climate change, and environmental education. Students who have passed GEOG 470 are not eligible to enroll in GEOG 570. Credit Hours: 3

GEOG580 - Internship in Geography Practical experience on-site with an environmental organization or GIS office. A report or professional poster on the work is required at the end of the semester. Special approval needed from the program. Credit Hours: 2-3

GEOG591 - Independent Studies in Geography Restricted to graduate standing. Credit Hours: 2-4

GEOG593A - Research in Environmental Sustainability Restricted to graduate standing. Credit Hours: 2-6

GEOG593B - Research in Geographic Information Science Prerequisite: GEOG 500 and GEOG 501. Restricted to graduate standing. Credit Hours: 2-6

GEOG593C - Research in Climate & Water Resources Restricted to graduate standing. Credit Hours: 2-6

GEOG596 - Field Course Restricted to graduate standing. Credit Hours: 2-4

GEOG599 - Thesis Restricted to graduate standing. Credit Hours: 2-6

GEOG601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their thesis or research paper. The student must have completed the minimum thesis or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF. Credit Hours: 1

GEOG699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Geography and Environmental Resources Faculty

Duram, Leslie A., Professor, Geography and Environmental Resources, Ph.D., University of Colorado, 1994; 1994. Environmental geography, local food systems, climate change and society, campus sustainability.

Hurst, Kristin, Assistant Professor, Geography and Environmental Resources, Ph.D., Virginia Polytechnic Institute and State University, 2019; 2021. Sustainability psychology, pro-environmental behavior, climate change engagement, and human-environment interaction.

Li, Ruopu, Associate Professor, Geography and Environmental Resources, Ph.D., University of Nebraska, 2012; 2015. GIS analysis and modeling, water resources modeling and management, energy geography, agricultural land use.

Remo, Jonathan, Associate Professor, Geography and Environmental Resources, Ph.D., Southern Illinois University, 2008; 2012. Fluvial geomorphology, flood hydrology, hydraulic modeling, disaster mitigation planning, disaster loss modeling.

Schoof, Justin, Professor and Director School of Earth Systems and Sustainability, Geography and Environmental Resources, Ph.D., Indiana University, 2004; 2006. Climate variability and change, synoptic climatology, statistical climatology, climate extremes.

Wang, Guangxing, Professor, Geography and Environmental Resources, Ph.D., University of Helsinki, 1996; 2007. Remote sensing, GIS, forest and city carbon modeling and mapping, spatial uncertainty analysis of remote sensing products.

Weinert, Julie, Professor of Practice, Ph.D., The Ohio State University, 2008; 2005. Tourism geography, ecotourism, feminist geography, globalization, geography of development.

Emeriti Faculty

Baumann, Duane D., Professor, Emeritus, Ph.D., Clark University, 1968.

Dziegielewski, Benedykt, Professor, Emeritus, Ph.D., Southern Illinois University, 1983.

Horsley, Doc, Assistant Professor, Emeritus, Ph.D., Southern Illinois University, 1974.

Lieber, Stanley R., Professor, Emeritus, Ph.D., University of Iowa, 1974.

Sharpe, David M., Professor, Emeritus, Ph.D., Southern Illinois University, 1968.

Geology and Geosciences

The School of Earth Systems and Sustainability offers programs leading to the Master of Science degree in Geology (thesis required), a Master of Arts degree in Geology (thesis not required), a Post-Baccalaureate Certificate in Earth Science, and a Doctor of Philosophy degree in Geosciences. Students may also pursue an interdisciplinary Ph.D. in Environmental Resources and Policy.

All graduate programs require a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in Geology. Applicants must pay this fee online by credit card.

Graduate Programs

The objectives of the graduate degree programs are to develop the student's competence in the basic fields of earth science and to provide for specialization dependent on student and faculty interest. Facilities and staff are available for studies involving: environmental geology, geomorphology, hydrogeology, paleontology, micropaleontology, paleoecology, coal petrology, coal geology, Pleistocene geology, environmental geochemistry, molecular organic geochemistry, solid earth geophysics, environmental geophysics, applied geophysics, geographic information systems, remote sensing, surface and subsurface mapping, structural geology, stratigraphy, sedimentation, sedimentary petrology, sedimentary environments, ore deposits, petrology, mineralogy, crystallography, energy resources, and petroleum geology. Many of the faculty are actively conducting research in which statistical and computer techniques are applied to problem solving in the earth sciences. Interdisciplinary research with other programs is encouraged.

SIUC Geology faculty and graduate students conduct internationally-recognized research all over the globe. In North America, there are current and recent research efforts in locations ranging from Alaska to Florida, from Nova Scotia to the Sonoran Desert. Farther afield, SIUC Geology researchers are active in Antarctica, Asia, South America, South Africa, and Europe. The Southern Illinois region itself offers a wide variety of geological conditions ideal for individual study and research.

Students must be admitted unconditionally to the Graduate School before they can be officially admitted to the Graduate Program in Geology. Admission to the Graduate Program in Geology is based on an evaluation of the preparation, ability, and promise of the applicant. Prerequisites for admission include: 1) completion of the online application; and 2) receipt of at least three letters of recommendation from professors, academic advisers, former employers, or others familiar with the applicant's academic

performance, research, or other relevant work. GRE test scores are optional and can be sent directly to the Geology Program at geology@geo.siu.edu. The Geology Program normally admits graduate students for entrance in the fall semester; however, applicants will be considered for spring admission.

A student admitted with course deficiencies may be required to complete or audit some undergraduate courses. First year teaching assistants are required to enroll in and complete GEOL 500. Other specific requirements will be determined by the student's advisory committee. Students are evaluated on an individual basis. Their programs are determined by their career goals and the results of informal interviews with individual faculty members.

Assistantships

Teaching assistantships are awarded and supervised by the Geology Program. Research assistantships are usually available only from research grants of individual faculty members and are supervised by the faculty member in receipt of the sponsoring grant. Research assistantship awards require prior approval of the assistantship committees of the program. Students in the M.S. in Geology Program, the Ph.D. in Geosciences Program, and the Ph.D. in Environmental Resources and Policy program are eligible to apply for teaching and research assistantships from the Geology Program.

As a matter of policy, the Geology Program does not ordinarily provide any student working on a master's degree financial support for more than two years, or four years for doctoral students. Requests for relaxation of this policy must be made in writing to the Director of Graduate Studies.

Master of Arts (M.A.) in Geology

The Master of Arts Degree in Geology is open to post-baccalaureate students with degrees in earth science, geology, or related fields. It is a non-thesis option. It is intended to expand the knowledge, skills, and specialized training in geological topics. The courses taken will be determined by interests of the individual student, but must be approved by the student's three-person program advisory committee. At least three (3) credit hours of GEOL 591, Individual Research in Geology must be taken.

There are two concentrations in the M.A. in Geology program:

- Environmental Geology
- Geospatial Analysis

Recommended Courses for the Environmental Geology Concentration:

- GEOG 520: Advanced GIS Studies (3 CH)
- GEOL 417: Isotope Geochemistry (3 CH)
- GEOL 420: Petroleum Geology (3 CH)
- GEOL 421: Organic Geochemistry (3 CH)
- GEOL 428: Paleoecology & Environments of Deposition (3 CH)
- GEOL 470: Hydrogeology (3 CH)
- GEOL 471: Hydrogeology Laboratory (1 CH)
- GEOL 474: Geomorphology (3 CH)
- GEOL 476: Quaternary Geology (3 CH)
- GEOL 481: Sedimentary Basin Analysis (3 CH)
- GEOL 484: Geologic Remote Sensing (3 CH)
- GEOL 517: Advanced Topics in Geochemistry (3 CH)
- GEOL 526: Advanced Topics in Applied Paleoecology (3 CH)
- GEOL 527: Micropaleontology (3 CH)
- GEOL 577: Advanced Topics in Surficial Geology (3 CH)
- GEOL 578: Fluvial Geomorphology (3 CH)
- GEOL 591: Individual Research in Geology (3 CH)

Recommended Courses for the Geospatial Analysis Concentration:

- GEOG 520: Advanced GIS Studies (3 CH)
- GEOL 420: Petroleum Geology (3 CH)

- GEOL 428: Paleoecology and Environments of Deposition (3 CH)
- GEOL 435: Solid-Earth Geophysics (3 CH)
- GEOL 466: Tectonics (3 CH)
- GEOL 474: Geomorphology (3 CH)
- GEOL 476: Quaternary Geology (3 CH)
- GEOL 481: Sedimentary Basin Analysis (3 CH)
- GEOL 484: Geologic Remote Sensing (3 CH)
- GEOL 526: Advanced Topics in Applied Paleoecology (3 CH)
- GEOL 535: Advanced Topics in Geophysics (3 CH)
- GEOL 536: Earthquake Seismology (3 CH)
- GEOL 577: Advanced Topics in Surficial Geology (3 CH)
- GEOL 578: Fluvial Geomorphology (3 CH)
- GEOL 591: Individual Research in Geology (3 CH)

Master of Science (M.S.) in Geology

The Master of Science in Geology is intended to expand the knowledge, skills, and specialized training in geological topics. A thesis is required. The courses taken will be determined by interests of the individual student, but must be approved by the student's three-person program advisory committee. There are two concentrations in the M.S. in Geology program:

- Environmental Geology
- Geospatial Analysis

Requirements

- A minimum of 50% of credit hours must be numbered 500 or above, and must be earned at SIUC.
- Courses taken are determined by the student and an advisory committee. The student will not be allowed to apply more than eight credit hours of independent study or research courses toward the M.S. in Geology degree (exclusive of thesis credits).
- A student majoring in geology may select a minor field. The minimum course work should then include 20 credit hours of geology and 10 credit hours in the minor field.
- A thesis subject must be approved by the chair of the advisory committee at least 20 weeks before the date of graduation.
- A final oral examination, primarily concerned with defense of the thesis, is administered as the last step before graduation. The student may be asked any questions the committee feels are relevant.
- In order to pass the final oral examination, students must receive a favorable majority vote from their thesis committee meeting in formal session. Should the student fail the final oral examination, the student, upon concurrence of a majority of the committee, may arrange a time for a re-examination not less than 30 nor more than 120 days after the first examination. Students who fail the final orals on their second attempt will be ineligible for the M.S. in Geology degree from the Geology program.
- Two copies of the approved thesis must be presented to the Graduate School at least three weeks prior to graduation, and a third copy must be presented to the Geology program.

Doctor of Philosophy (Ph.D.) in Geosciences

The primary objective of the doctoral program in Geosciences is to develop a student capable of successfully conducting original research and the presentation of an acceptable dissertation describing the results, analysis, and implications of that research. To achieve this goal, the student must meet the criteria established by the University, the Graduate School, and the faculty participating in the Ph.D. in Geosciences. The program of study is flexible, to allow students to take courses offered by programs within the College of Agricultural, Life, and Physical Sciences, and across campus. Each student is expected to take graduate level courses (excluding readings, independent studies, and internship) of at least 3 credit hours each from at least four different faculty members at SIUC. The program requires a minimum of 48 credit hours, 24 of which may be 600-level dissertation credits.

Before the end of their second year in the program, students shall have:

1. established an advisory committee including their dissertation adviser and four additional members (any member of the graduate faculty in the University can serve on the committee, but at least one member must be from a program other than Geology);
2. demonstrated competence in at least one research tool (the student's advisory committee will determine the requirements and research tool competence); and
3. presented themselves to the advisory committee for a comprehensive written and oral examination.

The format of the comprehensive examinations shall be established by the faculty participating in the Ph.D. in Geosciences. Students who fail the comprehensive examinations and wish to remain in the program may, with faculty consent, retake the examinations. Students who fail the second written-oral examination will be dropped from the program. After successful completion of the comprehensive exams, the student must prepare and defend a dissertation proposal. If a student successfully defends the dissertation proposal, he or she is admitted to candidacy for the Ph.D. in Geosciences degree. The comprehensive examinations and dissertation proposal defense are part of the formal assessment process.

As a candidate for the Ph.D. in Geosciences, the student is expected to make normal progress toward the successful completion and presentation of original research. Ordinarily, the doctoral student should expect to spend a minimum of two years beyond the Master's degree, or its equivalent, in residence. Students will be required to present an acceptable dissertation describing original research performed with minimal supervision and deemed by the advisory committee to be of such quality as to merit publication in appropriate professional journals. A final oral examination will be held after completion of the doctoral dissertation. This examination will concentrate on the defense of the dissertation but is not restricted to the dissertation topic or area. The dissertation will be accepted, provided the dissertation advisor and at least three of the other four members of the committee so agree.

Degree requirements, graduation, and time limits are subject to the general guidelines of the Graduate School.

Doctor of Philosophy (Ph.D.) in Environmental Resources and Policy

The central focus of the Ph.D. in Environmental Resources and Policy is advanced interdisciplinary training and research on geological, physical, biological, and social processes responsible for natural resource and environmental problems facing contemporary society. Additionally, the Ph.D. in Environmental Resources and Policy focuses on assessing public policy alternatives to address those problems and create new opportunities.

Within the broad and flexible Environmental Resources and Policy framework, a customized program is developed for each student, permitting him/her to conduct research in traditional and non-traditional earth science sub disciplines, under the direction of one or more Geology faculty members. Please see the Environmental Resources and Policy section of this catalog for detailed information and admission procedures.

For more information, see the catalog page for the program.

Certificate in Earth Science

The graduate (post-baccalaureate) certificate in Earth Science is open to students with degrees in earth science, geology, or related fields. It is intended to expand the knowledge, skills, and specialized training in geological topics. The coursework will include eighteen (18) graduate credit hours in Geology. While there are no specific courses required, the courses taken will be determined by the student and the program Coordinating Committee.

Students must maintain a B average in graduate courses. Maximum time allowed to complete the requirements for the certificate is five years.

Geology and Geosciences Courses

GEOL401 - Physical Nature of the Earth for Teachers This is an on-line course that offers an overview of the materials that form the Earth and the dynamic processes that shape the Earth, including both surficial processes and plate tectonics. This course will cover content appropriate for science teachers preparing to teach Physical Geology as a Dual-Credit course in high schools. Topics include: components and processes that create rocks and the cycles that change one rock into another; how plate tectonics has shaped the Earth; surficial processes (weathering, landslides, movement of ice, water, and wind); hazardous processes (earthquakes, volcanoes, flooding); and resources such as water, soil, and mineral and energy sources. This course is designed to be taken in conjunction with GEOL 402, a 1-hr laboratory course. Only open to students in the Dual Credit Certificate for Teachers program. Credit Hours: 3

GEOL402 - Physical Nature of the Earth Laboratory for Teachers Through active learning activities, this course offers examination of the materials that form the Earth and the dynamic processes that shape the earth, including surficial processes and plate tectonics. This course will cover content appropriate for science teachers preparing to teach labs associated with Physical Geology as a Dual-Credit course in high schools. This is offered as a hybrid distance education (on-line) class and includes both at-home and in-class laboratory assignments. For the in-class components, students will come to SIUC's campus for 2 half days (Saturdays) as indicated in the schedule. This course is designed to be taken in conjunction with GEOL 401, a 3-hr online course in which the students learn about earth materials and earth processes in greater depths. Only open to students in the Dual Credit Certificate for Teachers program. Credit Hours: 1

GEOL403 - Historical Geology Teacher Enhancement GEOL 403 is an online course designed to train science teachers to teach Historical Geology as a Dual Credit course in high schools. This course covers the basic principles involved in the study of geology and the history of the Earth preserved in the rock record. We begin with the large-scale components of Earth systems and geologic time, and then learn about the evolution of life recorded in the fossil record from the earliest life through the present. This course covers not just WHAT we know, but how we know it. This course is designed to be taken in conjunction with GEOL 404, a 1-hr laboratory course. Only open to students in the Dual Credit Certificate for Teachers program. Credit Hours: 3

GEOL404 - Historical Geology Teacher Enhancement Lab GEOL 404 is the laboratory section that accompanies the online Historical Geology Teacher Enhancement. This laboratory course offers hands-on activities to complement the online lectures and will provide teachers with a structure to teach labs in their own Dual Credit high school courses. This course covers the basic principles involved in the study of geology and the history of the Earth preserved in the rock record. We study sedimentary rocks, and learn how to read the clues to past environments and life preserved within samples. This course is done partially at home, but requires a six hour in house lab session. Only open to students in the Dual Credit Certificate for Teachers program. Credit Hours: 1

GEOL411 - Volcanology Study of volcanoes, their distribution, forms, composition, eruptive products and styles of potential hazards. Relationship of magmatic characteristic, eruptive style, and depositional products to the geologic framework is examined. Prerequisite: GEOL 315. Credit Hours: 3

GEOL412 - Advanced Petrology In-depth study of the rock forming processes. The relations of rock forming processes to petrographic analysis will be emphasized. Laboratories will deal with hand-specimen and thin-section analysis from selected rock suites with genetic modeling of the resulting data. Prerequisite: GEOL 310, 315. Credit Hours: 3

GEOL415 - Optical Mineralogy The optical properties of minerals and the use of the petrographic microscope for identification of crystals by the immersion method and by thin section. Lecture, laboratory. Prerequisite: GEOL 310, PHYS 203B or 205B. Credit Hours: 3

GEOL416 - The Geochemistry of Natural Waters The purpose of this class is to provide students with a strong theoretical background in aqueous geochemistry, environmental geochemistry, and groundwater geochemistry for application in a wide range of research topics. The approach combines conceptual knowledge with quantitative skills in a cyclic fashion to build independent understanding and chemical intuition. Prerequisites: GEOL 310, CHEM 200, 201, 210, 211 or consent of instructor. Lab fee: $15. Credit Hours: 3

GEOL417 - Isotope Geochemistry Isotope fractionation in natural systems containing D/H, carbon, oxygen, nitrogen, and sulfur. Application of stable isotope studies to environmental processes, paleoclimatology, and geothermometry. Stable and radioactive isotopes as tracers in hydrologic processes, ore deposits, sedimentology, and in crust-mantle differentiation processes. Prerequisite: GEOL 310, CHEM 200, 201, 210, 211, or equivalent. Credit Hours: 3

GEOL418 - Low Temperature Geochemistry The application of chemical principles to geologic processes that occur on and near the earth's surface. Lecture, laboratory. Prerequisite: GEOL 310, CHEM 200, 201, 210, 211 or equivalent. Credit Hours: 3

GEOL419 - Ore Deposits Overview of the occurrence, geology and origin of metalliferous mineral deposits. Geologic principles and research techniques important to the understanding of mineral deposits. Introduction to exploration and mining methods. Lectures, laboratories and field trips required. Prerequisite: GEOL 302, 315 or consent of instructor. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed $60. Credit Hours: 3

GEOL420 - Petroleum Geology The geological occurrences of petroleum including origin, migration and accumulation; a survey of exploration methods, and production problems and techniques. Laboratory study applies geological knowledge to the search for and production of petroleum and natural gas. Prerequisite: GEOL 221, 224. Credit Hours: 3

GEOL421 - Organic Geochemistry The nature, origin and fate of natural and artificial organic materials in rocks and sediments. Topics include characterization of fossil fuels using biological marker compounds, petroleum source rock evaluation, and organic pollutants in the environment. Prerequisite: GEOL 325 or consent of instructor. Credit Hours: 3

GEOL423 - Geomicrobiology (Same as MICR 423 and MBBS 423) The course will focus on the role that microorganisms play in fundamental geological processes. Topics will include an outline of the present understanding of microbial involvement of weathering of rocks, formation and transformation of soils and sediments, and genesis and degradation of minerals. Elemental cycles will also be covered with emphasis on the interrelationships between the various geochemical cycles and the microbial tropic groups involved. Prerequisite: Microbiology 301 and Chemistry 210 and 211. Recommended: GEOL 220, 221 or 222. Credit Hours: 3

GEOL425 - Invertebrate Paleontology and Paleoecology Concepts of paleontology and paleoecology. Emphasis on functional morphology, lifestyles and habitats of fossil invertebrates and algae. The nature and evolution of marine and coastal paleocommunities. The effects of extinction events on paleocommunities and biodiversity. Laboratory. Field trips required. Prerequisite: GEOL 325 or ZOOL 220 with a grade of C- or better. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed $199. Credit Hours: 3. Credit Hours: 3

GEOL428 - Paleoecology and Environments of Deposition Characteristics, distribution, and classification of recent and ancient environments. Criteria for recognizing ancient environments. Sedimentological and paleoecological approaches. Recognition of ancient environments and environmental associations. Laboratory. Field trips required. Prerequisite: GEOL 425, 325, or concurrent enrollment. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed $199. Credit Hours: 3

GEOL430 - Planetary Geology Study of the solar system and planet formation, focusing on formation, differentiation and secondary processes. Geologic histories and geological processes of other planets are examined and compared with our understanding of the Earth. Prerequisite: GEOL 310. Credit Hours: 3

GEOL431 - Catastrophes and Consequences Much has been written in recent years about the impact of human civilization on the environment. There has been much less discussion of the impact of the environment on human civilization, but the fact is that gradual or rapid changes in the environment can profoundly affect human populations-in both direct and indirect ways. This is an interdisciplinary course that reviews both the short term/short range and long term/long range effects of natural perturbations of the environment on the development of civilization and the course of history. We will review historical case studies of the consequences of various kinds of natural disasters which resulted in major disruptions

to the environment from local and regional phenomena to those that affected the entire planet. Examples include major volcanic eruptions, earthquakes and climate change. Credit Hours: 3

GEOL432 - Energy Strategic Elements and Critical Minerals Energy critical and strategic elements (ECSE) are essential to modern society. This course would introduce the ECSE and their various use in the energy efficient and national security technologies. Key concepts, such as ECSE physical and chemical properties, are introduced and then employed to describe the main controls on their behavior in both natural and anthropocentric systems. Topics covered include: (1) the geological systems in which ECSE occur and the processes responsible for migration and enrichment of ECSE in the Earth's crust; (2) the ECSE global availability, supply risk, vulnerability to supply restriction, and environmental implications; and (3) strategies for addressing the criticality and sustainability of ECSE. This course will provide a training academy for students who want to join the emerging clean energy economy. Credit Hours: 3

GEOL435 - Solid Earth Geophysics Earth's size, shape, mass, age, composition, and internal structure are reviewed in detail as understood from gravity, magnetic fields, seismicity, thermal processes, and motion of continents and ocean basins. Prerequisite: MATH 150 or MATH 151 with a C or better. Credit Hours: 3

GEOL436 - Applied Geophysics Theory and practice of geophysics applied to exploration for natural resources including oil, minerals, coal, groundwater, and for archaeology, environmental, and meteorite impact sites and earthquake zones. Methods include seismic reflection, refraction, and surface waves also gravity, magnetic, and electrical. Up to 3 one-day field trips may be conducted on weekends. Recommend: GEOL 220 or 222, PHYS 203A/B or PHYS 253A/B. Prerequisite: MATH 150. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed $80. Credit Hours: 3

GEOL437 - Field Course in Geophysics Use of geophysical equipment for collection, analysis and interpretation of seismic, gravity, magnetic, electrical, and other types of geophysical data. Field trips required. Prerequisite: GEOL 436 or consent. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed $199. Credit Hours: 3

GEOL440 - Advanced Topics in the Geological Sciences Individual study or research or advanced studies in various topics. Restricted to advanced standing. Special approval needed from the instructor. Credit Hours: 1-9

GEOL445 - Museum Studies in Geology History, nature and purpose of geology in museums, relationships of geology to other museum disciplines, application of geologic methods to museum functions, preparation and preservation of specimens; nature, acquisition and utilization of geologic collections in museums; role of research in museums. Credit Hours: 3

GEOL450 - Introduction to Field Geology Introduction to field techniques, principles of geologic mapping and map interpretation. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Prerequisite: GEOL 310 with a grade of C or better. Credit Hours: 3

GEOL451 - Field Experience in Geology Preparation for and participation in academically rigorous field trips guided by faculty members. Trips will be to areas of geological interest and will occur during official breaks within or between semesters. Expense will vary in proportion to the distance traveled and duration of trip and will be determined before each trip. A student may only take a specific trip once for credit. Special approval needed from the instructor. Credit Hours: 1-12

GEOL464 - Earth's Deep Interior Structure and composition of Earth's interior from the lithospheric mantle to the inner core. Mineralogy and petrology of the upper mantle, transition zone, lower mantle, outer core, and inner core, equilibrium phase relations and phase changes, equations of state, spin transitions, seismic discontinuities, seismic anisotropy, geomagnetic field, laboratory and seismic methods used to explore Earth's interior. Prerequisite: GEOL 310 and 315 with a grade of C or better, graduate status, or instructor approval. Credit Hours: 3

GEOL466 - Tectonics Fundamentals of geodynamics applied to plate tectonics: mantle composition and rheology, deformation of the lithosphere, structural characteristics of plate margins, stability of triple

junctions, and orogenesis will be examined in detail. One 3-day field trip may be required. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed $150. Prerequisite: GEOL 302 with a grade of C or better or consent. Credit Hours: 3

GEOL470 - Hydrogeology Study of the distribution, origin, and movement of groundwater, and the properties of geologic materials that control groundwater flow and contaminant transport. Includes topics on the sustainable development of groundwater resources. Prerequisite: GEOL 220 or 222 with a C or better; or consent of instructor. Credit Hours: 3

GEOL471 - Hydrogeology Laboratory Problem sets, laboratory experiments, and field exercises in hydrogeology. Includes projects on the sustainable development of groundwater resources. Field trips required. Prerequisite: GEOL 220 or 222 with a C or better; or consent of instructor. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed $150. Credit Hours: 1

GEOL474 - Geomorphology Study of erosional and depositional processes operating at the earth's surface and landforms resulting from these processes. Relationship of processes and landforms to the geologic framework is examined. Laboratory. Field trips required. Prerequisite: GEOL 220 or 222; 223. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed $60. Credit Hours: 3

GEOL476 - Quaternary Geology Methods used to identify, map, date and correlate Quaternary deposits and interpret Quaternary history. Covers glacial, fluvial, coastal, lacustrine and eolian chronologies, oxygen-isotope records from ocean sediments and continental ice cores, volcanic activity, and Quaternary climate change. Field trips required. Prerequisite: GEOL 220 or 222; 221, 223, 224; or consent of instructor; GEOL 474 recommended. Credit Hours: 3

GEOL480 - Geology of Coal Stratigraphy, sedimentation and structure of coal deposits; modern analogs; origin of splits and partings in coal seams; coal quality and rank; coal exploration and mining; methods of resource evaluation. Prerequisite: GEOL 220 or 222; 221, 223, and 224; or consent of instructor. Credit Hours: 3

GEOL481 - Sedimentary Basin Analysis The use of stratigraphy, structure, sedimentology and geophysics to determine the paleogeographic evolution of sedimentary basins. Topics include the study of the relationships between host strata and both primary and post-depositional non-renewable resources, plate tectonics and basin evolution and subsurface geologic methods. Special approval needed from the instructor. Lab fee: $10. Credit Hours: 3

GEOL482 - Organic Petrology Petrology and geochemistry of coals and dispersed organics; emphasis on applications to the coal and oil industries; origin of coal and source rock constituents; geochemical and petrographic changes with increased maturation. Prerequisite: GEOL 220 or 222; 221, 223, and 224; or consent of instructor. Lab fee: $50. Credit Hours: 3

GEOL483 - Forensic Geology An introduction to the use of geological materials and techniques in criminal investigation. Details from actual criminal cases will be used as examples in all the topics covered which include rock and mineral types, geological and topographic maps, fossils, sand, soils, spores and pollen, geological building materials, art fraud and gemstones. Techniques covered will include optical microscopy, scanning electron microscopy and x-ray diffraction. Lab fee: $10. Credit Hours: 3

GEOL484 - Geologic Remote Sensing Applications of remote sensing using aerial photographs, multi-spectral imagery, hyperspectral imagery, thermal infrared imagery, and radar imagery, in structural geology, stratigraphy, geomorphology, oil and mineral exploration, geologic hazard analysis and planetary exploration. Prerequisite: GEOL 220 or consent of the instructor. Lab fee: $25. Credit Hours: 3

GEOL490 - Internship Credit for supervised practical experience with an external geological agency or company; prior approval of the sponsoring agency and the program is required. Restricted to advanced standing. Credit Hours: 1-6

GEOL500 - Teaching for Geology Graduate Students To help teaching assistants develop skills in conducting laboratory work and leading discussions. One hour required for all teaching assistants in geology. Graded S/U only. Credit Hours: 1-2

GEOL507 - Science Writing and Scientific Communication Course will teach "survival skills" in scientific reading, writing, communicating, and publishing for new graduate students. Topics will include database search, analysis of journal articles, abstracts, figures, and tables, Powerpoint presentations, proposals, posters, thesis writing, and preparation of journal submissions. Enrollment is open to graduate students in agriculture and the sciences and is by permission of the instructor. Credit Hours: 2

GEOL510 - Advanced Sedimentology Basic principles of field observation, field and laboratory sampling, and data analysis of clastic sedimentary rocks; introduction to laboratory techniques; introduction to statistical, physical and empirical models in sedimentary geology. Field trips required. Prerequisite: GEOL 325 or GEOL 474. Credit Hours: 2

GEOL513 - Quantitative Methods in the Earth Sciences An introduction to methods of data analysis in an Earth Sciences context. Topics include data interpretation, analysis of time series geological data, and development of quantitative models. Course will deal with quantitative examples from different areas of geology with an emphasis on scientific computing. Credit Hours: 3

GEOL515 - Instrumental Analysis in Geology An introduction to modern methods of instrumental inorganic geochemical analysis that are particularly important in the geology sciences. This includes both operational theory and practical application of methods for the analysis of minerals, rocks and aqueous solutions. Lecture, laboratory. Prerequisite: GEOL 310, CHEM 210 or equivalent; GEOL 418 recommended. Credit Hours: 3

GEOL516 - Geochemical Modeling of Water-Rock Interaction The Water-Rock Interactions is a topic of fundamental importance to a wide range of scientists from academic, industry, and government. If you are a ore-deposits explorer, petroleum engineer, soil scientist, environmental geochemist, or planetary scientist you need to have knowledge of reactions between geologic materials (i.e., minerals, organic matter) and aqueous solutions. During this class, we will focus on understanding interactions between solids and aqueous solutions at the molecular level and explore topics including growth and dissolution, surface complexation, adsorption and desorption, contaminant fate, microbe-mineral interactions, and biomineralization processes. Common microanalytical techniques, including synchrotron techniques, used in mineral-water interface studies will be introduced throughout the course. Ultimately, this class is about obtaining the problem-solving skills to allow you to better analyze complex natural and anthropogenic systems. Prerequisite: GEOL 416 or equivalent with a grade of C or better. Credit Hours: 3

GEOL517 - Advanced Topics in Geochemistry Specialized topics in geochemistry. Topics covered might include thermodynamic modeling of mineral-solution equilibria, the role of kinetics in mineral-solution reactions, experimental hydrothermal geochemistry or other topics to be announced by the program. Maximum credit nine semester hours. Prerequisite: GEOL 418 or consent of instructor. Credit Hours: 2-6

GEOL518 - Clay Mineralogy Study of the structure, chemistry, origin, and geologic importance of clay minerals. Industrial and other applications of clays. Lecture, laboratory. Prerequisite: GEOL 310 or consent. Credit Hours: 3

GEOL519 - Advanced Mineralogy Advanced concepts in crystallography, analysis of mineral structures and compositions, and distribution and evolution of minerals on Earth. X-ray diffraction theory, reciprocal space, single crystal methods, space group symmetry, Rietveld refinement, electron microscope and microprobe techniques for quantitative analysis, mineral ecology, mineral network analysis, and stages of mineral evolution. Restricted to graduate status, or instructor approval. 3 Credit hours. 3 Lecture hours. Credit Hours: 3

GEOL520 - Advanced Topics in Igneous and Metamorphic Petrology Petrologic principles and their relationships and other selected topics to be announced by the program. Special approval needed from the instructor. Credit Hours: 2-6

GEOL522 - Sedimentary Petrology-Siliciclastics The petrography and petrology of siliciclastic rocks, emphasizing sandstone. Microscopic studies of composition and components of detrital clastic rocks, their

origin, provenance, characteristics, diagenesis, cementation and lithification. Special approval needed from the instructor. Credit Hours: 3

GEOL523 - Sedimentary Petrology-Carbonates The origin, classification, diagenesis, and geochemistry of carbonate rocks, with emphasis on petrographic analysis. Study of recent carbonate depositional environments. Laboratory required. Prerequisite: GEOL 325; GEOL 418 recommended. Credit Hours: 3

GEOL524 - Advanced Topics in Sedimentary Geology Topics may include clastic depositional environments, carbonate depositional environments; diagenesis of sedimentary rocks, and other topics to be announced by the program. Up to 3 one- or two-day field trips may be required on the weekends. Special approval needed from the instructor. Credit Hours: 2-6

GEOL525 - Advanced Topics in Invertebrate Paleontology Lectures, readings, field and laboratory studies, including techniques and quantitative methods of study. Preparation for research in paleontology. Topics may include corals, bryozoans, brachiopods, mollusks, echinoderms, biostratigraphy, tempo and mode of invertebrate evolution and other topics to be announced by the program. Maximum credit six semester hours. Prerequisite: GEOL 425 or consent of instructor. Credit Hours: 2-3

GEOL526 - Advanced Topics in Applied Paleoecology Lectures, field, and laboratory studies, including techniques and quantitative methods. Preparation for research in paleoecology. Emphasis on using fossil marine invertebrates and trace fossils to interpret ancient sedimentary environments. Prerequisite: GEOL 428 or consent. Credit Hours: 3

GEOL527 - Micropaleontology Structure, classification, paleoecology, stratigraphic distribution, and evolution of microfossils. Laboratory work in techniques of collection, preparation and study of microfossils. Identification and use of microfossils in solving stratigraphic and paleoenvironmental problems. Preparation for research in micropaleontology. Field trips required. Prerequisite: GEOL 425 or consent of instructor. Field trip fee: $85. Credit Hours: 3

GEOL529 - Paleoclimatology This course will examine what is known ? and still unknown ? about the history of Earth?s climate, from the Hadean through the Anthropocene. We will study the mechanisms and feedbacks that comprise the global climate system, how and why Earth's climate has changed through time, and the methods that paleoclimatologists use to reconstruct past climate and environmental change. Credit Hours: 3

GEOL535 - Advanced Topics in Geophysics Specialized topics in geophysics. Examples include but are not limited to seismic stratigraphy, mid-continent seismicity, isostacy, data processing techniques. The topic to be covered is announced by the program. Maximum credit nine semester hours. Up to 3 one- or two-day field trips may be required on the weekends. Prerequisite: GEOL 435 or GEOL 436 or consent of instructor. Credit Hours: 1-6

GEOL536 - Earthquake Seismology Observational seismology. Topics include earthquake source mechanisms; propagation, reflection and refraction of elastic waves; ray theory; dispersion of surface waves; the effect of earth structure on the seismogram; and the seismograph. Research projects will be conducted using data from the SIU Geophysical Observatory. Up to 3 one- or two-day field trips may be required on the weekends. Prerequisite: GEOL 435 or GEOL 436, MATH 150 or consent of instructor. Credit Hours: 3

GEOL537 - Applied Seismology Study of the seismic reflection techniques, including theory and methods of collection and analysis of seismic reflection data, the seismic method, waveform analysis, and digital filtering with computer applications and seismic instrument characteristics. Up to 3 one- or two-day field trips may be required on weekends. Prerequisite: MATH 150 or consent. Credit Hours: 3

GEOL540 - Numerical Methods in the Earth Sciences Dynamic processes shape the surface and interior of Earth and other Planets. An important tool for understanding dynamic processes is numerical modeling. In this class, we will explore the development and application of numerical methods to natural processes, with particular focus on finite difference methods. Credit Hours: 3

GEOL543 - Soil Geomorphology A study of the interactions between geomorphic and pedogenic processes. How geomorphology influences soil formation and how soils influence geomorphology as well

as how soils can be used to interpret geomorphic history. Historical development of soil geomorphology as a field. Prerequisite: CSEM 489, PSAS 589 or GEOL 489/589 with a grade of C or better. Credit Hours: 3

GEOL550 - Advanced Economic Geology In-depth examination of the geologic characteristics, classification and origin of metallic mineral deposits. Aspects of mineral exploration and mining techniques are also discussed. Laboratory exercises emphasize hand specimen and petrographic study of ore and host rock suites. Up to 3 one- or two-day field trips may be required on weekends. Credit Hours: 4

GEOL555 - Advanced Topics in Economic Geology Advanced study in a specific area of economic geology to be determined by course participants. Course content may focus on a specific type of mineral deposit or such topical areas as field characteristics, mineral exploration techniques, stable isotope geochemistry, fluid inclusion studies and hydrothermal processes. Maximum six credit hours. Field trips may be required on up to 3 weekends and possibly over Spring vacation. Prerequisite: GEOL 550. Credit Hours: 1-6

GEOL566 - Advanced Topics in Structural Geology Lectures, readings, and discussion of advanced aspects of rock deformation: dislocation theory and its applications to flow processes of rocks; experimental rock deformation; incremental and finite strain theory and analysis; and recent developments in structural geology. Special approval needed from the instructor. Credit Hours: 3

GEOL570 - Advanced Hydrogeology A combination of lectures, seminars, and independent studies of advanced topics in hydrogeology, particularly geochemistry and the response of aquifers to stresses such as tides, recharge and saline intrusion. Prerequisite: GEOL 470. Credit Hours: 3

GEOL574 - Soil Physical Properties A study of the physical properties of soils with special emphasis on soil and water relationships, chemical transport, and methods of physical analysis. Prerequisite: CSEM 240 or GEOL 220 or FOR 352 with a grade of C or better. Credit Hours: 3

GEOL577 - Advanced Topics in Surficial Geology Studies of processes, landforms, and deposits in the surface or near surface geologic setting. Selected topics to be announced by the program. Maximum credit nine semester hours. Special approval needed from the instructor. Credit Hours: 2-6

GEOL578 - Fluvial Geomorphology Detailed study of fluvial processes and landforms within the context of major concepts in geology and geomorphology. Topics include drainage basins, hydro-climatology and surface water hydrology, channel processes, fluvial depositional systems, paleohydrology and changes in fluvial systems through time. Field trips required. Prerequisite: GEOL 474. Special approval needed from the instructor. Field trip fee: $35. Credit Hours: 3

GEOL582 - Advanced Coal Petrology Microscopy, source materials, coalification, constitution, and classification of peats, lignites, bituminous coal, anthracite; applications to industrial problems. Prerequisite: GEOL 482. Lab fee: $50. Credit Hours: 1-3

GEOL584 - Advanced Geologic Remote Sensing An advanced course covering the nature of electromagnetic radiation, the electromagnetic spectrum and the interaction between electromagnetic radiation and matter. Remote sensing systems will be presented and the fundamentals of digital image processing will be introduced from a theoretical and practical viewpoint. A series of case studies with applications ranging from mineral exploration to volcano monitoring will be covered. Field Trip fee: $40. Credit Hours: 3

GEOL585 - Earth and Space Science for Teachers Class designed to help teachers gain an understanding of some of the earth science concepts they need to teach today's standards-based curricula. Develops an understanding of earth materials, how the earth works, earth resources, the causes of natural disasters, and the exploration of the bodies of our solar system. Prerequisites: A general physical science course or equivalent. Special approval needed from the program. Credit Hours: 3

GEOL588 - Global Energy Resources Ready access to energy is essential to sustaining modern societies. This course will discuss the nature of the resources that have been, are, or potentially could be used to provide energy in the US and around the globe, including fossil fuels, nuclear energy resources,

bioenergy resources and emerging energy resources such as geothermal, wind, tidal, and solar energy. Credit Hours: 3

GEOL589 - Soil Genesis, Morphology, and Classification Development, characteristics, and identification of soils, study of profiles, and interpretation and utilization of soil survey information in land use planning. Prerequisite: CSEM 240 or GEOL 220 or FOR 352 with a grade of C or better. Credit Hours: 3

GEOL591 - Individual Research in Geology Investigations in geology other than those for theses or dissertations. Credit Hours: 1-6

GEOL599 - Thesis (1 to 8 hours per semester) Research for and writing of the master's thesis. Maximum of six hours to be counted toward a Master's degree. Credit Hours: 1-8

GEOL600 - Dissertation Research for and writing of the doctoral dissertation. Special approval needed from the instructor. Credit Hours: 1-30

GEOL601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

GEOL699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Geology and Geosciences Faculty

Anderson, Ken B., Professor and Director Advanced Energy Institute, Geology, Ph.D., University of Melbourne, 1989; 2003. Clean coal technology, ambers and fossil resins, resource analysis.

Conder, James A., Professor, Geology, Ph.D., Brown University, 2001; 2008. Mantle geodynamics and melt generation, active tectonics.

Gibson, Derek, Assistant Professor, Geology, Ph.D., Indiana University, 2022; 2025. Paleoclimatology, geomorphology, limnology/limnogeology, sedimentology.

Henson, Harvey, Associate Professor and Interim Director STEM Education Research Center, Curriculum and Instruction/Geology, Ph.D., Southern Illinois University, 2015; 2016. Science education, geology, geophysics.

Hummer, Daniel R., Associate Professor, Geology, Ph.D., The Pennsylvania State University, 2010; 2016. Mineralogy, crystallography, high temperature geochemistry.

Lefticariu, Liliana, Professor, Geology, Ph.D., Northern Illinois University, 2004; 2007. Geochemistry, low-temperature geochemistry, stable isotopic analysis, environmental geology.

Potter-McIntyre, Sally, Associate Professor, Geology, Ph.D., University of Utah, 2012; 2013. Clastic sedimentology, paleogeography and basin evolution, astrobiology, Mars sedimentology using terrestrial analogs.

Emeriti faculty

Esling, Steven P., Associate Professor, Emeritus, Ph.D., University of Iowa, 1984.

Fifarek, Richard H., Associate Professor, Emeritus, Ph.D., Oregon State University, 1985.

Rimmer, Sue, Professor, Emerita, Ph.D., The Pennsylvania State University, 1985.

Sexton, John, Professor, Emeritus, Ph.D., Indiana University, 1974; 1985.

Health Administration

The Master of Health Administration program is a comprehensive program that prepares students for administration roles in healthcare organizations. The program is offered through the School of Health Sciences in the College of Health and Human Sciences. Courses are accelerated and offered in eight-week formats to expedite completion.

Master of Health Administration (M.H.A.) in Health Administration

To earn the M.H.A., students must successfully complete 36 credit hours of the core MHA courses including: MHA 510, MHA 511, MHA 520, MHA 531, MHA 536, MHA 551, MHA 566, MHA 575, MHA 580, MHA 582, MHA 585, and MHA 593 (3-6 CH).

Course material covers topics specific to the healthcare field including, but not limited to: effective organizational operations, healthcare systems, health policy, healthcare supply chain and inventory management of controlled substances, strategic leadership for differing healthcare settings, health promotion, legal and ethical foundations, managerial epidemiology and evidence based management, and financial issues specific to the healthcare industry, such as charge masters and relative value units, etc. Upon completion of the program, students are expected to be equipped to operate effectively in administrative roles in healthcare organizations. Special project assignments, case readings, presentations, and journal article reviews are an integral part of the curriculum. Course delivery may be via synchronous and asynchronous methods.

All students graduating from the MHA program will be required to meet the qualifications of the Graduate School at SIUC. Students will be required to complete a culminating scholarly work which includes a research paper.

Students must earn a “B” in all required MHA courses. If a student earns less than a "B" in any MHA course, they must retake it, only once. If they earn less than a “B” the second time, they are dropped from the MHA program due to unsatisfactory academic performance. Students dropped due to unsatisfactory academic performance will not be allowed re-entry into the MHA program at a later date.
MHA courses are restricted to MHA, MHI students, and concurrent admitted students from the MSRS, and/or MDOS, and/or Law School programs, with MHA Advisor approval. Online MHA courses are restricted to those online MHA students; on campus MHA courses are restricted to those on campus MHA students. The MHA program strictly prohibits students for changing delivery formats unless there is a well-documented medical reason proposed to the MHA Program Director to consider for approval.
Up to 9 credit hours of transfer credit may be allowed from other regionally accredited academic institutions upon review and approval by the MHA Program Director, or designee. The student will submit through the MHA Academic Advisor the full course syllabi of the course they would like to be considered as transfer credit. This must be submitted for consideration prior to the end of the first semester after being admitted to the MHA program. No late submissions for transfer credit will be considered.
A 2.7/4.0 GPA or better (SIUC calculation) on the entire last undergraduate GPA earned at the time of application is required for admission to the MHA program. Students with a 2.5-2.7/4.0 undergraduate GPA (SIUC calculation) may enter as a non-declared student, following Graduate School policies, and will be allowed to take up to 9 credit hours of MHA courses. At the end of the 9 credit hours, the student must hold a 3.0/4.0 GPA to be then admitted to the MHA program. Students not meeting the 3.0/4.0 GPA at the end of the 9 credit hours will not be allowed to take any other MHA courses.

The MHA program follows Graduate School policies. The MHA program will not petition to retain a student who does not meet the academic performance guidelines of the Graduate School.

All international applicants must demonstrate proficiency in the English language by submitting an approved English Language Competency Test score with their application. These applicants must have one of the following minimum scores for consideration:

- 550 on the paper-based TOEFL
- 80 on the internet-based TOEFL
- 6.5 on the IELTS
- 105 on the Duolingo English Exam

This applies to all international applicants. No waivers or exemptions will be provided. Students must provide a copy of their scorecard, verifying test results, with their application to the MHA. Given the accelerated nature of the MHA, the academic program does not agree to or approve late arrivals.

M.H.A. Concurrent Degrees

The MHA offers concurrent degrees with other graduate programs as provided below. All students interested in a concurrent degree option must meet with the MHA academic advisor to design a plan for completing both degrees. All Graduate School policies and procedures apply as well as program policies and procedures for both concurrent degrees as noted in the Graduate Catalog, and/or each individual program's Student Handbook and/or website, as applicable.
A concurrent degree allows students to complete the requirements of two programs and be awarded two master's degrees at the same time with the benefit of shared coursework between the two programs. If a student is awarded a single degree, they will not be eligible for the concurrent pathway which allows up to 9 hours of coursework to be shared between two degrees.
When entering any program offering a concurrent degree option (MHI, MHA, MSRS, MDOS Track II), students will be advised on the concurrent degree option and the eligibility requirements. Students will sign a document acknowledging that if the first degree is conferred that the shared hours in the concurrent option are forfeited.
Additionally, if a student chooses to have the first degree conferred, a second document will be signed by the student acknowledging that the concurrent degree option (and shared hours) will be forfeited.

1. MHA/MHI - offers the MHA student the opportunity to earn two Master's degrees for just 21 additional credit hours. For the MHA student who is interested in advancing their career by also earning the Master in Health Informatics (MHI), they will complete the following additional MHI courses all with a B or higher including:
   MHI 515 - Systems Analysis, Design and Database Management in Healthcare (3 CH)
   MHI 525 - Health Informatics Applications and Project Management (3 CH)
   MHI 581 - Health Information Interoperability (3 CH)
   MHI 583 - Health Informatics Essentials (3 CH)
   MHI 584 - Applied Data Analytics in Healthcare (3 CH)
   MHI 593 - Research in Healthcare Informatics (3 CH)
   -AND- **one** of the following:
   HCM 463 - Environment of Care (3 CH), or
   HCM 464 - Infection Prevention Informatics (3 CH), or
   HCM 465 - Infection Prevention and Control Operations (3 CH).
   Students must be admitted separately to the MHA and MHI programs and all policies apply for each program independently.
2. MHA/JD - prepares students for positions related to litigation, advisement, regulation, advocacy, transactions, and administration across the healthcare spectrum, such as in hospital systems, insurers, pharmaceutical companies, government agencies, and health policy organizations.
   When completed separately, the JD degree requires completion of 90 credit hours of coursework and the MHA degree requires completion of 36 credit hours of coursework. However, in the MHA/JD concurrent degree program, the School of Law accepts nine credit hours of MHA coursework toward meeting the JD credit hour requirement and the MHA accepts nine credit hours of law toward meeting the MHA credit hour requirement. This allows students in the concurrent degree program to complete 81 credit hours of law courses and 27 credit hours of MHA courses, saving 18 credit hours.
   Students must be admitted separately to the MHA program and the School of Law and all policies apply for each program independently. During the first academic year, students enroll only in the first-year law curriculum. In any subsequent academic term, the student may enroll for courses either in the School of Law and/or in the MHA program. A student registered for both law and MHA courses in the same term must enroll in a minimum of 10 hours in law to meet the academic requirements of the School of Law.
3. MSRS to MHA - prepares students for administrative roles in healthcare organizations within and beyond the field of radiology. The Master of Science in Radiologic Sciences (MSRS) requires 36 credit hours for degree completion. For the MSRS student who is interested in advancing their career by also earning the MHA, they will complete just 21 additional credit hours of MHA courses all with a B or higher including:

MHA 510 - Effective Healthcare Operations (3 CH)
MHA 520 - Healthcare Policy (3 CH)
MHA 566 - Managing Health Information (3 CH)
MHA 575 - Current Events Seminar in Healthcare (3 CH)
MHA 580 - Managerial Epidemiology and Evidence Based Management (3 CH)
MHA 582 - Healthcare Economics (3 CH)
MHA 585 - Financial Issues in Healthcare (3 CH).
Students must be admitted separately to the MSRS and MHA programs and all policies apply for each program independently.

4. MDOS Track II to MHA - prepares Master of Science in Medical Dosimetry (MDOS) Track II students for administrative roles pertinent to clinical and administrative positions in healthcare, within and beyond the field of medical dosimetry. MDOS Track II students interested in advancing their career by also earning the MHA will complete just 21 additional credit hours of MHA courses all with a B or higher including:
   MHA 510 - Effective Healthcare Operations (3 CH)
   MHA 520 - Healthcare Policy (3 CH)
   MHA 566 - Managing Health Information (3 CH)
   MHA 575 - Current Events Seminar in Healthcare (3 CH)
   MHA 580 - Managerial Epidemiology and Evidence Based Management (3 CH)
   MHA 582 - Healthcare Economics (3 CH)
   MHA 585 - Financial Issues in Healthcare (3 CH).
   Students must be admitted separately to the MDOS Track II and MHA programs and all policies apply for each program independently.

Certificate in Infection Prevention and Control

The post-baccalaureate certificate in Infection Prevention and Control is designed for students with an interest in infection prevention and control within healthcare organizations. The certificate consists of 18 credit hours of coursework. A grade of “B” or higher is required in all courses and all coursework must be completed at SIUC. Students must complete the following courses:

- MHA 580: Managerial Epidemiology & Evidence Based Management (3 CH)
- MHA 593: Research in Healthcare Administration (3-6 CH)
- MHA 510: Effective Healthcare Operations (3 CH)
- HCM 463: Environment of Care (3 CH)
- HCM 464: Infection Prevention Informatics (3 CH)
- HCM 465: Infection Prevention & Control Operations (3 CH)

Students earning a grade lower than a “B” must retake individual courses, only once. If a grade of “B” or higher is not received on the second attempt of an individual course, the student is removed from the certificate program due to unsatisfactory academic performance.

For more information contact:
School of Health Sciences
Phone: 618-453-7211
Email: health.sciences@siu.edu

Health Administration Courses

MHA510 - Effective Healthcare Operations An investigation of the functions of HCOs compared to other business operations including logistics and supply chain control. Addresses excessive resource spending focusing on support systems and ineffective operational issues within constraints of highly regulated healthcare sector. eCommerce, hospital materials supply, inventory control of medical supplies/ controlled substances, vendor collaboration, purchasing/receiving, and total value analysis explored with PERT/CPM, mathematical programming and quality controls. Restricted to School graduate majors. Credit Hours: 3

MHA511 - Fundamentals of Health Care Systems This course provides a multi-disciplinary analysis and is designed to provide students with information pertaining to the issues surrounding access to care, medical technology, and the complex financial structures of the healthcare system. Students will extensively examine aspects of the complex healthcare system such as managed care, Medicare, Medicaid, pharmaceuticals, health promotion and disease prevention, and the quality of care. Restricted to School graduate majors. Credit Hours: 3

MHA520 - Healthcare Policy Explores the public policy interventions within the varying healthcare domains and defines the theoretical reasons for pursuing policy development in the presence of intense political, bureaucratic, and social environments within the healthcare industry. The effects, consequences, and social implications of policy decisions are evaluated through real-world case analysis of actual public health policies. Focus is placed on how policies impact patients and medical providers. Restricted to School graduate majors. Credit Hours: 3

MHA531 - Human Resources in Health Care (Same as MHI 531) Describes the key human resource functions that play a significant role in the healthcare environment and focuses specifically on how those functions support management initiatives and Joint Commission accreditation and/or regulatory compliance. Extensive review of how the failure to systematically apply effective human resource strategies can result in organizational demise is conducted. Explores the dynamic legal and regulatory environment and carefully examines how legislative changes influence the healthcare organization overall focusing particularly on those functions that are linked to patient satisfaction and balanced scorecards and/or benchmarking of provider performance. Credit Hours: 3

MHA536 - Strategic Leadership in Healthcare This course provides students with an examination of nature, function, and techniques of administration and supervision in HCOs. Topics include the ever-changing healthcare environment and trends impacting leadership competencies. Specific healthcare factors that influence organizing managing of varying health systems such as hospitals vs. ambulatory care. Focus will be given on the professional bureaucracy that is complex given regulatory issues, political factors, and the era of the informed patient. Restricted to School graduate majors. Credit Hours: 3

MHA551 - Legal & Ethical Fundamentals in Healthcare This course provides students with an analysis of the legal and ethical environment of the healthcare industry. Focused on the healthcare environment, the course closely examines the judicial process pertaining to torts, contracts, antitrust, corporate compliance, access to care, negligence, and professional liability. The nature of ethics in the multi-cultural healthcare environment is examined with analysis of the moral issues in healthcare. Restricted to School graduate majors. Credit Hours: 3

MHA555 - Theories of Health Promotion and Evaluation An exploration of the concepts, theories, and status of research in health promotion and disease prevention emphasizing varying methods used to modify the health-related behaviors of groups and individuals. This course examines methods of ascertaining health behaviors, the design and interpretation of behavioral intervention programs to modify behaviors, and current trends in the study of how lifestyle and preventive health practices the field of health care. Restricted to School graduate majors. Credit Hours: 3

MHA556 - Individual Research in Healthcare This course requires students to complete a research project in the field of healthcare based upon student interest and instructor approval. Each project will have a written paper as a final product and this paper will be submitted for publication, as approved by the instructor, in one of the professional journals within the field of healthcare. Restricted to School of Health Sciences graduate majors and MHA advisor approval. Credit Hours: 3. Credit Hours: 3

MHA566 - Managing Health Information A detailed review of the components of an information system as utilized for the capture of health information. Focus is on EHR, HIPAA, and implementation of information systems in healthcare organizations. Classification systems, clinical terminology, and use of health information in terms of operational management and decision making will be explored. Emerging technologies related to the security of health information management are explored. Restricted to School graduate majors. Credit Hours: 3

MHA575 - Current Events Seminar in Healthcare A current issues seminar course for the field of healthcare where students identify and analyze legislative changes/mandates, healthcare reform, governmental oversight, etc. Students conduct presentations and may participate in discussions with healthcare professionals via a variety of potential classroom methods including, but not limited to, live

video conferencing, podcasts, and/or discussion postings, etc. Restricted to School graduate majors. Credit Hours: 3

MHA580 - Managerial Epidemiology and Evidence Based Management Epidemiological principles pertinent to the delivery, management, and marketing of healthcare services. Examines evidence- and population-based decisions which are critical to effective delivery of patient care. Utilizes evidence-based theories to prepare the students to identify management problems and develop related paths of focused inquiry. Restricted to School graduate majors. Credit Hours: 3

MHA582 - Healthcare Economics Covers micro-economic theory focusing on patient demand for services and supply of services based on the complex regulatory environment in healthcare organizations. Students will learn to analyze health policies, as well as the behaviors of patients, insurers, and physicians in varying HCOs. Issues will be explored such as fee structuring; controversial policy issues, such as access to care and/or the medically under-insured or uninsured; the demand and mandate of health insurance; and the increased presence of governmental control that impacts healthcare economics. Restricted to School graduate majors and School advisor. Credit Hours: 3

MHA585 - Financial Issues in Healthcare A macro-examination of the role of finance in healthcare. Emphasis is not on financial formulas, but rather on the application of financial information within the healthcare sector. Discussion of charge-masters, healthcare payment systems and sources of revenue, profit vs. duty, regulatory issues and profit maximization, provider payments and pricing in capitated-managed care markets, and IDS, etc. Case principles specifically related to the healthcare field are completed. Restricted to School graduate majors. Credit Hours: 3

MHA593 - Research in Healthcare Administration Students complete a research project or paper on a topic related to healthcare administration in patient care environments. Each research project and/or paper will result in submission for publication consideration, as approved by the instructor, in one of the professional, peer-reviewed journals within the field of healthcare, healthcare informatics, or healthcare education. Restricted to MHA/MHI students with consent of MHI advisor. Credit Hours: 3-6

MHA599 - Independent Study Directed independent study in selected areas of health administration. Special approval needed from the MHA Program Director. Students must have the Independent Study Proposal Form approved by the MHA Program Director prior to enrolling in the course. Independent study options are not always available and cannot be guaranteed. Restricted to MHA majors only. Credit Hours: 1-3

MHA601 - Continuing Enrollment This course is required to satisfy the Graduate School's requirement of continuous enrollment and is intended for those students who are enrolled in the program but cannot take a core academic course during a given semester. Consent of School Academic Advisor. Credit Hours: 1

Health Administration Faculty

Collins, Sandra K., Professor, Program Director, Distinguished Faculty, Ph.D., Southern Illinois University Carbondale, 2010; 2002. Management theory, health care law and ethics, HPV; opioid addiction, and online education.

Shaw, Thomas A., Associate Professor, Distinguished Faculty, Ph.D., Southern Illinois University Carbondale, 2005; 1995. Health care policy, health care law, social determinants of health.

Health Informatics

The Master of Health Informatics (MHI) program is a comprehensive program that prepares students for professional roles in the field of health informatics within the healthcare organizations. The program is offered through the School of Health Sciences in the College of Health and Human Sciences.

Master of Health Informatics (M.H.I.) in Health Informatics

To earn the MHI, students must complete 36 credit hours of the core MHI courses including: MHI 510, MHI 511, MHI 515, MHI 525, MHI 531, MHI 536, MHI 551, MHI 566, MHI 581, MHI 583, MHI 584, and MHI 593.

Course material covers topics specific to the healthcare informatics field including, but not limited to: healthcare systems, knowledge management, personnel development and oversight, electronic health records, strategic leadership and marketing, legal and ethical foundations, systems design, modeling, database management, security, privacy, and health information exchange. Upon completion of the program, students are expected to be equipped to operate effectively in administrative roles in healthcare organizations. Special project assignments, case readings, presentations, and journal article reviews are an integral part of the curriculum. Course delivery may be via synchronous and asynchronous methods.

All students graduating from the MHI program will be required to meet the qualifications of the Graduate School at SIUC. Students will be required to complete a culminating scholarly work which includes a research paper.

Students must earn a “B” in all required MHI courses. If a student earns less than a "B" in any MHI course, they must retake it, only once. If they earn less than a “B” the second time, they are dropped from the MHI program due to unsatisfactory academic performance. Students dropped due to unsatisfactory academic performance will not be allowed re-entry into the MHI program at a later date.

MHI courses are restricted to MHA, MHI students, and concurrent admitted students from the MSRS, and/or MSDOS, with MHI Advisor approval. Online MHI courses are restricted to those online MHI students; on campus MHI courses are restricted to those on campus MHI students. The MHI program strictly prohibits students for changing delivery formats unless there is a well-documented medical reason proposed to the MHI Program Director to consider for approval.

Up to 9 credit hours of transfer credit may be allowed from other regionally accredited academic institutions upon review and approval by the MHI Program Director, or designee. The student will submit through the MHI Academic Advisor the full course syllabi of the course they would like to be considered as transfer credit. This must be submitted for consideration prior to the end of the first semester after being admitted to the MHA program. No late submissions for transfer credit will be considered.

A 2.7/4.0 GPA or better (SIUC calculation) on the entire last undergraduate GPA earned at the time of application is required for admission to the MHI program. Students with a 2.5-2.7/4.0 undergraduate GPA (SIUC calculation) may enter as a non-declared student, following Graduate School policies, and will be allowed to take up to 9 credit hours of MHI courses. At the end of the 9 credit hours, the student must hold a 3.0/4.0 GPA to be then admitted to the MHI program. Students not meeting the 3.0/4.0 GPA at the end of the 9 credit hours will not be allowed to take any other MHI courses.

The MHI program follows Graduate School policies. The MHI program will not petition to retain a student who does not meet the academic performance guidelines of the Graduate School.

All international applicants must demonstrate proficiency in the English language by submitting an approved English Language Competency Test score with their application. These applicants must have one of the following minimum scores for consideration:

- 550 on the paper-based TOEFL
- 80 on the internet-based TOEFL
- 6.5 on the IELTS
- 105 on the Duolingo English Exam

This applies to all international applicants. No waivers or exemptions will be provided. Students must provide a copy of their scorecard, verifying test results, with their application to the MHI. Given the accelerated nature of the MHI, the academic program does not agree to or approve late arrivals.

M.H.I. Concurrent Degrees

The MHI offers concurrent degrees with other graduate programs as provided below. All students interested in a concurrent degree option must meet with the MHI academic advisor to design a plan for completing both degrees. All Graduate School policies and procedures apply as well as program policies

and procedures for both concurrent degrees as noted in the Graduate Catalog, and/or each individual program's Student Handbook and/or website, as applicable.

A concurrent degree allows students to complete the requirements of two programs and be awarded two master's degrees at the same time with the benefit of shared coursework between the two programs. If a student is awarded a single degree, they will not be eligible for the concurrent pathway which allows up to 9 hours of coursework to be shared between two degrees.

When entering any program offering a concurrent degree option (MHI, MHA, MSRS, MDOS Track II), students will be advised on the concurrent degree option and the eligibility requirements. Students will sign a document acknowledging that if the first degree is conferred that the shared hours in the concurrent option are forfeited.

Additionally, if a student chooses to have the first degree conferred, a second document will be signed by the student acknowledging that the concurrent degree option (and shared hours) will be forfeited.

1. MHI/MHA - offers the MHI student the opportunity to earn two Master's degrees for just 21 additional credit hours. For the MHI student who is interested in advancing their career by also earning the Master in Health Administration (MHA), students will complete the following MHA courses with a B or higher including:
   MHA 520 - Healthcare Policy (3 CH)
   MHA 575 - Current Events Seminar in Healthcare (3 CH)
   MHA 580 - Managerial Epidemiology and Evidence Based Management (3 CH)
   MHA 582 - Healthcare Economics (3 CH)
   MHA 585 - Financial Issues in Healthcare (3 CH)
   MHA 593 - Research in Healthcare Administration (3 CH)
   -AND- **one** of the following:
   HCM 463 - Environment of Care (3 CH), or
   HCM 464 - Infection Prevention Informatics (3 CH), or
   HCM 465 - Infection Prevention and Control Operations (3 CH)
   Students must be admitted separately to the MHI and MHA programs and all policies apply for each program independently.
2. MSRS to MHI - prepares students for data analytics roles in healthcare organizations within and beyond the field of radiology. The Master of Science in Radiologic Sciences (MSRS) requires 36 credit hours for degree completion. For the MSRS student who is interested in advancing their career by also earning the MHI, they will complete just 21 additional credit hours of MHI courses all with a B or higher including:
   MHI 510 - Effective Healthcare Operations (3 CH)
   MHI 515 - Systems Analysis, Design and Database Management in Healthcare (3 CH)
   MHI 525 - Health Informatics Applications and Project Management (3 CH)
   MHI 566 - Managing Health Information (3 CH)
   MHI 581 - Health Information Interoperability (3 CH)
   MHI 583 - Health Informatics Essentials (3 CH)
   MHI 584 - Applied Data Analytics in Healthcare (3 CH)
   Students must be admitted separately to the MSRS and MHI programs and all policies apply for each program independently.
3. MDOS Track II to MHI - prepares Master of Science in Medical Dosimetry (MDOS) Track II students for analytical roles pertinent to clinical and administrative positions in healthcare, within and beyond the field of medical dosimetry. MDOS - Track II students interested in advancing their career by also earning the MHI will complete just 21 additional credit hours of MHI courses all with a B or higher including:
   MHI 510 - Effective Healthcare Operations (3 CH)
   MHI 515 - Systems Analysis, Design and Database Management in Healthcare (3 CH)
   MHI 525 - Health Informatics Applications and Project Management (3 CH)
   MHI 566 - Managing Health Information (3 CH)
   MHI 581 - Health Information Interoperability (3 CH)
   MHI 583 - Health Informatics Essentials (3 CH)
   MHI 584 - Applied Data Analytics in Healthcare (3 CH)
   Students must be admitted separately to the MDOS Track II and MHI programs and all policies apply for each program independently.

For more information contact:

School of Health Sciences
Phone: 618-453-7211
Email: health.sciences@siu.edu

Health Informatics Courses

MHI510 - Effective Healthcare Operations An investigation of the functions of HCOs compared to other business operations including logistics and supply chain control. Addresses excessive resource spending focusing on support systems and ineffective operational issues within constraints of highly regulated healthcare sector. eCommerce, hospital materials supply, inventory control of medical supplies/controlled substances, vendor collaboration, purchasing/receiving, and total value analysis explored with PERT/CPM, mathematical programming and quality controls. Restricted to School graduate majors. Credit Hours: 3

MHI511 - Fundamentals of Health Care Systems This course provides a multi-disciplinary analysis and is designed to provide students with information pertaining to the issues surrounding access to care, medical technology, and the complex financial structures of the healthcare system. Students will extensively examine aspects of the complex healthcare system such as managed care, Medicare, Medicaid, pharmaceuticals, health promotion and disease prevention, and the quality of care. Restricted to School graduate majors. Credit Hours: 3

MHI515 - Systems Analysis, Design, and Database Management in Health Care Students explore methods for designing and managing health care organization databases and their use in computer based information systems. Focus is given on the impact that health care information systems have on administrative functions, data security and integrity, and business processes. Use of relational database management software, network hardware technologies, data modeling, clinical data warehousing and mining are explored, as well as, the tools necessary for successful system implementation and human computer interfaces. Restricted to School graduate majors. Credit Hours: 3

MHI520 - Healthcare Policy Explores the public policy interventions within the varying healthcare domains and defines the theoretical reasons for pursuing policy development in the presences of intense political, bureaucratic, and social environments within the healthcare industry. The effects, consequences, and social implications of policy decisions are evaluated through real-world case analysis of actual public health policies. Focus is placed on how policies impact patients and medical providers. Restricted to School graduate majors. Credit Hours: 3

MHI525 - Health Informatics Applications and Project Management Course designed to explore the history of health information. Students learn how to integrate the clinical, financial and administrative data needed to resolve managerial and patient care problems. Explores the strengths and limitations of health information systems and principles of computer science. Focus is given on project planning, project management tools. Students will develop a workflow project plan for a health informatics project and conduct biomed simulations. Restricted to School graduate majors. Credit Hours: 3

MHI531 - Human Resources in Health Care (Same as MHA 531) Describes the key human resource functions that play a significant role in the healthcare environment and focuses specifically on how those functions support management initiatives and Joint Commission accreditation and/or regulatory compliance. Extensive review of how the failure to systematically apply effective human resource strategies can result in organizational demise is conducted. Explore the dynamic legal and regulatory environment and carefully examines how legislative changes influence the healthcare organization overall focusing particularly on those functions that are linked to patient satisfaction and balanced scorecards and benchmarking of provider performance. Restricted to School graduate majors. Credit Hours: 3

MHI536 - Strategic Leadership in Healthcare This course provides students with an examination of nature, function, and techniques of administration and supervision in HCOs. Topics include the ever-changing healthcare environment and trends impacting leadership competencies. Specific healthcare factors that influence organizing managing of varying health systems such as hospitals vs. ambulatory

care. Focus will be given on the professional bureaucracy that is complex given regulatory issues, political factors, and the era of the informed patient. Restricted to School graduate majors. Credit Hours: 3

MHI551 - Legal & Ethical Fundamentals in Healthcare This course provides students with an analysis of the legal and ethical environment of the healthcare industry. Focused on the healthcare environment, the course closely examines the judicial process pertaining to torts, contracts, antitrust, corporate compliance, access to care, negligence, and professional liability. The nature of ethics in the multi-cultural healthcare environment is examined with analysis of the moral issues in healthcare. Restricted to School graduate majors. Credit Hours: 3

MHI566 - Managing Health Information A detailed review of the components of an information system as utilized for the capture of health information. Focus is on EHR, HIPAA, and implementation of information systems in healthcare organizations. Classification systems, clinical terminology, and use of health information in terms of operational management and decision making will be explored. Emerging technologies related to the security of health information management are explored. Restricted to School graduate majors. Credit Hours: 3

MHI580 - Managerial Epidemiology and Evidence Based Management Epidemiological principles pertinent to the delivery, management, and marketing of healthcare services. Examines evidence- and population-based decisions which are critical to effective delivery of patient care. Utilizes evidence-based theories to prepare the students to identify management problems and develop related paths of focused inquiry. Restricted to School graduate majors. Credit Hours: 3

MHI581 - Health Information Interoperability Addresses issues related to the exchange of clinical data across multiple healthcare environments. Special focus is placed on health IT standards, privacy and security issues specifically related to the protection of patient information. Provides an overview of health information system standards and the types of products available to facilitate the use of data exchanges. Students will work in virtual groups to discuss current trends and challenges, best practices for health information systems, and health information standards pertinent to the field of healthcare. Restricted to School graduate majors. Credit Hours: 3

MHI583 - Health Informatics Essentials This course is designed to meet the increasing demand among health care practitioners, researchers, and students for a comprehensive introduction to the field of health informatics. It introduces both a conceptual framework and a practical approach for the implementation and management of IT used to enhance health care delivery. In addition, this course covers fundamental research methodologies, topics, and trends in health informatics. Restricted to MHA or MHI students with consent of MHI advisor. Credit Hours: 3

MHI584 - Applied Data Analytics in Healthcare This course provides healthcare professionals, health information management students, and health informatics students with guidance on how to analyze, categorize, and manage the data they encounter in the increasingly data-dependent health care professional setting. This course examines the use of healthcare data, including an overview of best practices and the realities of obtaining useful data from digital health systems at different stages of the data life cycle. From this course, students will learn how to use data to solve problems and make data-driven health care decisions using various data analytics and data visualization techniques, as well as how to effectively communicate the analysis results to facilitate care quality. Restricted to MHA or MHI students with consent of MHI advisor. Credit Hours: 3

MHI585 - Financial Issues in Healthcare A macro-examination of the role of finance in healthcare. Emphasis is not on financial formulas, but rather on the application of financial information within the healthcare sector. Discussion of charge-masters, healthcare payment systems and sources of revenue, profit vs. duty, regulatory issues and profit maximization, provider payments and pricing in capitated-managed care markets, and IDS, etc. Case principles specifically related to the healthcare field are completed. Restricted to School graduate majors. Credit Hours: 3

MHI593 - Research in Healthcare Informatics Students complete a research project or paper on a topic related to healthcare informatics in patient care environments. Each research project and/or paper will result in submission for publication consideration, as approved by the instructor, in one of the professional, peer-reviewed journals within the field of healthcare, healthcare informatics, or healthcare education. Restricted to MHA/MHI students with consent of MHI advisor. Credit Hours: 3-6

MHI599 - Independent Study Directed independent study in selected areas of health informatics. Special approval needed from the MHI Program Director. Students must have the Independent Study Proposal Form approved by the MHI Program Director prior to enrolling in the course. Independent study options are not always available and cannot be guaranteed. Restricted to MHI majors only. Credit Hours: 1-3

MHI601 - Continuing Enrollment This course is required to satisfy the Graduate School's requirement of continuous enrollment and is intended for those students who are enrolled in the program but cannot take a core academic course during a given semester. Consent of SAH Academic Advisor. Credit Hours: 1

Health Informatics Faculty

Collins, Sandra K., Professor, Distinguished Faculty, Program Director, Ph.D., Southern Illinois University Carbondale, 2010; 2002. Management theory, health care law and ethics, HPV, opioid addiction, and online education.

Shaw, Thomas A., Associate Professor, Distinguished Faculty, Ph.D., Southern Illinois University Carbondale, 2005; 1995. Health care policy, health care law, social determinants of health.

Higher Education

The School of Education provides graduate study leading to the Master of Science in Education degree in Higher Education. The program offers students an opportunity to study and explore the concept of higher education as a field of study. The faculty of this program encourages and assists students in developing a lifetime commitment to the study of higher education. They also provide preservice and inservice preparation for persons who are teaching or serving as administrators or who expect to teach or serve as administrators in two-year and four-year colleges and universities, and related post-secondary educational institutions and agencies.

This program requires a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in Higher Education. Applicants must pay this fee by credit card.

Academic Standing

Each student pursuing a degree, certificate, or endorsement offered by the Higher Education program must establish and maintain adequate academic standing in order to complete the selected program. To be sure, the Academic Standing expectations in the programs are in addition to the Satisfactory Progress Standards established by the Graduate School. (Refer to the Financial Assistance section of the Graduate Catalog for more information.) In an effort to promote and support program completion, EAHE defines Academic Standing as follows:

Adequate

Student actively engages in at least one of the following based on the structure of their academic program:

- Takes classes annually that count toward program completion (not including continuing enrollment credit)
- Completes internship(s)
- Participates in preliminary examinations
- Conducts research as illustrated by the scheduling of a prospectus or defense
- Fulfills other requirements in their academic program
- Maintains regular contact with their faculty advisor (at least once per semester)

Results: Student will continue to work on completing their academic program.

Inadequate

Without attaining a formal leave of absence (requested one semester at a time with a maximum of two semesters during a degree program) from the program and the Graduate School, the student neglects to do at least one of the following based on the structure of their academic program:

- Take classes annually that count toward program completion (not including continuing enrollment credit)
- Complete internship(s)
- Participate in preliminary examinations
- Conduct research as illustrated by the scheduling of a prospectus or defense
- Fulfill other requirements in their academic program

Additionally, the student does not maintain contact with or respond to communication from their faculty advisor, program director, and/or school.

Results: The program will alert the student on what they need to do to attain Adequate Academic Standing. The student will receive time to meet these requirements based on the availability of course offerings, examinations, or other missing requirements. Following the satisfaction of the missing requirements, the program will reassess academic standing of the student.

Delinquent

Over a sustained period without attaining a formal leave of absence from the program and the Graduate School, the student repeatedly fails to do at least one of the following based on the structure of their academic program:

- Take classes annually that count toward program completion (not including continuing enrollment credit)
- Complete internship(s)
- Participate in preliminary examinations
- Conduct research as illustrated by the scheduling of a prospectus or defense
- Fulfill other requirements in their academic program -OR-
- The student does not maintain contact with or respond to communication from their faculty advisor, program director, and/or school over a sustained period -OR-
- The student fails to complete all of the program requirements within the specified time limit.

Results: The program will alert the student to their academic deficiencies and provide an opportunity for the student to author a written appeal to this status within a specified time limit. This appeal should include the steps that the student intends to take to address academic deficiencies. The program will respond upon receipt of the student's written appeal.

If the program elects to approve the student's written appeal, the student will receive a specified period of time to fulfill the conditions of the appeal. Successful completion of these conditions will lead to a reassessment of the academic standing of that student.

A student who fails to provide or satisfy the conditions of a written appeal may be subject to dismissal from their academic program and the Graduate School.

As specified by the Graduate School, it is the responsibility of each student to keep the University and the program apprised of their up-to-date contact information. (Refer to the Financial Assistance section of the Graduate Catalog for more information.)

Program Expectations and Time Limits

Once enrolled, the program expects each student to make continuous academic progress toward completing their specified program. Please refer to the information below to learn more about the expectations for your specific program.

Master's Degrees, Certificates, and Endorsements

Upon admission to pursue a master's degree, certificate, and/or endorsement in Higher Education offered by School of Education, the program will expect students to maintain adequate academic

standing. To maintain this status, each student must enroll in, complete, and pass courses, internships, exams, and other requirements that lead to the completion of their specified academic program. As specified by the Graduate School, each student will have six calendar years, from the date of initial enrollment, to complete all of the requirements for their specified academic program. (Refer to the Degree Requirements section of the Graduate Catalog for more information.)

Graduate Credit From Post-Master's Courses

The Higher Education program in the School of Education will accept selected post-master's degree credits earned by students prior to acceptance into the Ph.D. in Education program. Credit will not be accepted for Independent Readings, Independent Studies, or Internship courses. EAHE will accept up to the maximum of credits allowed by the Graduate School at SIUC.

Rationale - We need to do this to establish consistency for all of the students. Previously, some students had the opportunity to utilize these courses, while others did not.

Written Appeals

Any student enrolled in a program may author a written appeal regarding their academic standing. Written appeals should include the following:

- Your name (according to University records), DAWG tag #, and current contact information (postal address, phone, and email).
- An outline detailing why the program should allow you to remain an active student in your specified program.
- A description of the difficulties or any extraordinary circumstances that have inhibited your progress toward completing your degree, certificate, or endorsement.
- A specific timeline of strategies and plans that you will use to make satisfactory progress toward program completion from this point forward. Note: if the faculty members choose to reinstate you as a student, we will regard this timeline and expressed strategies as a contract. Failure to make progress under these conditions will be cause for immediate dismissal from the specified academic program without the opportunity for any further appeals.
- Identification of and established communication with a current EAHE faculty member who has agreed to serve as your adviser and will assist you in completing your program.

Upon receipt of notification that the program deems the student's academic standing to be either Inadequate or Delinquent, the student will have 45 calendar days to provide a written appeal to the program. If a student chooses not to author a written appeal regarding their academic standing, then the original determination issued by the program will remain and the program will inform the Graduate School of the student's status, which may result in dismissal from the specified program and the Graduate School. Students who disagree with the final decision issued by the program must refer to the Graduate Student Academic Grievance Policy established by the Graduate School. (Refer to the Academic Grievances Policy/Procedures section of the Graduate Catalog for more information.)

Master of Science in Education (M.S.Ed.) in Higher Education

The emphasis of this degree is to provide individuals with the background and skills important to accepting a wide range of teaching and administrative positions in higher education. Concentrations in community college teaching and college student personnel are offered.

Students applying for admission are encouraged to have some leadership experience prior to starting graduate study. Students who expect to complete a program to prepare them for teaching in a community college are expected to have an undergraduate major in a subject area commonly taught in a community college.

Community College Teaching (32 credit hours, minimum) Concentration

Students who wish to teach in a community college must complete at least 20 credit hours in their teaching specialty and at least 12 credit hours in specified courses in educational administration and higher education, for a minimum of at least 32 credit hours. Students in this program must secure prior

to admission a subject matter adviser from the faculty of the subject area who will agree to help plan the student's academic program.

The common core of courses required of students in this program includes the following:

- EAHE 516: College Students and College Culture (3 CH)
- EAHE 518: College Teaching (3 CH)
- EAHE 524: Curriculum Design and Policy (3 CH)
- EAHE 526: The Community College (3 CH)

Students must also complete a minimum of 20 credit hours in their teaching specialty. Recommended courses beyond the minimum requirements are as follows, and must be taken unless waived by the program coordinator:

- EAHE 598: Higher Education Internship (1-6 CH) -OR-
- EAHE 599: Thesis (3 CH)/Individual Research 593A-L (3 CH)

College Student Personnel (36 credit hours) Concentration

This program focuses on preparing new professionals to work as student affairs administrators and educators within institutions of higher education. Students must complete a minimum of 36 credit hours of courses designed to prepare them as higher education generalists. Through internships, electives, and professional development seminars, students individualize their programs to acquire specialized emphasis in various student affairs units, including admission and recruitment, student development, student activities and programming, alumni relations, career planning, financial aid, orientation, placement, and residence life.

College Student Personnel Common Core (12 credit hours):

- EAHE 508: Student Development Theory (3 CH)
- EAHE 510: Higher Education in the United States (3 CH)
- EAHE 513: Organization and Administration in Higher Education (3 CH)
- EAHE 515: Student Affairs Administration (3 CH)

Cognate (12-18 credit hours):

- Students will work with advisor to construct a cognate, which is compatible with their academic and professional interests. Possible cognates include, but are not limited to: Administration, Cultural Contexts, and Student Affairs.

Professional Development (3 to 9 credit hours):

- EAHE 591: Individual Study (1-6 CH)
- EAHE 598: Higher Education Internship (3-6 CH)

Capstone (3 credit hours):

- EAHE 546: Co-Curricular Assessment (3 CH)
- EAHE 593L: Research Paper (3 CH)
- EAHE 599: Thesis (3 CH)

Electives (3 to 6 credit hours):

- As selected with advisor.

Waiver for Internship Requirement

Each student must complete or obtain a waiver for the required internship in addition to any paid assistantship that the student may secure. Internships must be in a setting different from the student's assistantship or professional work environment. Internship opportunities exist through most areas of Student Affairs on the SIU Carbondale campus; other locations or settings might be eligible; each student

must obtain approval from their advisor before initiating any internship. Students with non-assistantship based, professional experience in higher education may seek a waiver of the internship requirement. All waivers must be in writing and require advisor approval. Students permitted to waive the internship requirement must complete an additional three credit hours of independent study to satisfy the credit requirements needed to obtain the degree.

Research/Capstone Requirements

Community College Teaching concentration students shall demonstrate research competencies through writing an acceptable research paper or master's thesis (which involves original research). College Student Personnel concentration students complete a capstone. Options for the capstone may include a research paper, master's thesis, or complete EAHE 546: Co-Curricular Assessment. Students who select the thesis option must have an approved prospectus on file at least six months in advance of the anticipated graduation date; they must enroll for three credit hours of EAHE 599 (Thesis); and they must have a committee of at least three faculty members. Students who elect to write a research paper must have a committee of two faculty members, and they must enroll in three credit hours of EAHE 593A-L (Research Paper). Students who choose the thesis or research paper option are required to complete successfully a final examination, which usually consists of a presentation and defense of the research paper or thesis; this exam may be written, oral, or both.

M.S.Ed./J.D. Concurrent Degrees

This concurrent degree in higher education and law helps to provide students with an academic foundation in areas where the two fields intersect. Specifically, this joint program allows students to acquire knowledge and develop problem-solving skills applicable to both areas. Participants in this program will develop an understanding of legal matters, history, foundations, theories, policies, and processes that influence postsecondary institutions. Students completing this joint degree will attain unique qualifications preparing them for careers such as higher education administrators, postsecondary counsel, policymaking, student advocacy, and other areas where law and postsecondary institutions intersect. Prospective students must meet the admissions requirements and gain acceptance separately to Higher Education and the School of Law. Students concurrently enrolled in either degree program must attain a minimum GPA and grading scales. Students interested in Higher Education portion of this concurrent program should consult with the Director of the Higher Education Programs. Students will need to take a minimum of 21 credit hours of Higher Education courses and nine credit hours of electives through the School of Law as selected with the appropriate advisors.

Certificate in College Teaching

The program offers a postsecondary focused teaching post-baccalaureate certificate to any graduate student enrolled in or who has completed at least a master's degree. The program will operate within a cohort format as a way of streamlining course scheduling, promoting intergroup socialization and development, and supporting routine, consistent, and timely completion. To establish and maintain cohort delivery, the program will offer all students the following courses:

Course/Category	Required Credit Hours
Common Core	
EAHE 508: Student Development Theory	3
EAHE 510: Higher Education in the United States	3
EAHE 518: College Teaching	3
EAHE 524: Curriculum Design and Policy	3
Organizational Core (choose one)	
EAHE 513: Organization and Administration in Higher Education	3
EAHE 526: The Community College	3
Capstone	

Course/Category	Required Credit Hours
EAHE 598: Higher Education Internship	3
Total Credit Hours:	**18**

All of these courses are 500-level courses.

Admission

To gain admission to the program, prospective students must have earned a grade point average (GPA) of 2.7 or better (A=4.00) on the entire last undergraduate GPA earned at the time of application and hold or be enrolled in a graduate degree program and maintain a minimum 3.0/4.0 GPA. Applications for admission must include the following: a completed program application, three letters of references attesting to the applicant's potential for success as a postsecondary instructor, and a teaching statement. Higher Education faculty members will review applications and select students for admission to the certificate program.

Higher Education Courses

EAHE402 - Principles of Student Personnel Group Work Acquaints the student with group work possibilities and functions in higher education. Credit Hours: 1-3

EAHE470 - College Student Sexuality (Same as WGSS 470) Seminar designed to provide students with a strong grounding in the field of college student sexuality and sexual identity, covering the lived experiences of U.S. college students, the construction of sexualized collegiate identities through U.S. history, and how institutions of higher education have attempted to regulate, control, and (intentionally as well as inadvertently) effect college student sexuality. Credit Hours: 3

EAHE501 - Vision and Planning for School Improvement In this graduate level course, school professionals will be introduced to the role and functions of the school principal as defined in federal, state, and local statutes. It will also address the variations of that role based on school level (Pre-K, elementary, middle, and high school). Professionals will be able to define and conceptualize what it means to be an instructional leader and the notion of distributed leadership. Professionals will gain an understanding of the needs of all students (ELL/bilingual; special needs, other). Professionals will understand how literacy and numeracy instruction impacts student learning and how student performance data informs the school vision and plans for school improvement. Credit Hours: 3

EAHE502 - Administrative Leadership and Practice This course provides an introduction to key concepts, issues, and proficiencies relevant to doctoral study. This course concentrates on fostering skills and competencies that help educators develop into practitioner-scholars. Topic areas will include cultivating systemic knowledge and perspectives; identifying and reviewing existing literature; critically examining educational programs, policies, and structures; connecting research and theory to administrative practice; and recognizing and working to address the needs of students, faculty, staff, board members, policymakers, and other stakeholders. Credit Hours: 3

EAHE503 - Building Collaborative Structures and Systems of Professional Practice In this graduate level course, school professionals will focus on structures that allow engagement between educators on issues of practice (i.e., professional learning communities, communities of practice) as a means for leaders to support the development of organizational goals, group and individual student, parent involvement, professional teaching/learning, and school success. School professionals will learn to track cohort data to determine the successes of groups and subgroups as a means to determine whether or not school culture is unified and cohesive. School professionals will apply theory to practice as they engage in decision-making activities involving school-wide change processes and monitoring effective instruction, expanding upon their awareness of the 2013 Illinois Professional Teaching Standards that foster a culture of student learning. Credit Hours: 3

EAHE504 - School Leadership Through Personnel Administration and Evaluation In this graduate level course, school professionals will acquire knowledge and skills to become qualified evaluators of licensed teachers. School professionals will learn to collaborate using observation and conversation to

provide feedback to change teaching practices. Techniques to collect, analyze, and accurately document objective data will be learned and practiced with the goal to acquire the skills to rate the professional/ instructional performance of teachers and other licensed school personnel. Restrictions: Admitted to a PK-12 graduate program in COEHS. Credit Hours: 3

EAHE505 - The Administration and Supervision of the Middle School Reviews the philosophy of the middle school concept and emphasizes the role of the principal in the areas of management, supervision of human resources, program development, the direction of students and the concern for ethical standards of operation. Credit Hours: 3

EAHE506 - The Administration and Supervision of the Secondary School Deals with problems met specifically by the high school principal. Emphasizes the principal's role in relation to guidance, curriculum, schedule-making, extra-curricular activities, public relations, budgeting of time, etc. Credit Hours: 3

EAHE508 - Student Development Theory A study of the major theories of human development as applied to college students with implications for the student affairs specialist. Restricted to students admitted to master's degree or certificate in higher education, or consent of instructor. Credit Hours: 3

EAHE509 - School Community Relations and District Policy In this graduate level course, school professionals will learn to achieve the school's vision and obtain support for school improvement through effectively communicating and collaborating with the central office, faculty and staff, school families, and community members. School professionals will define community in terms of diversity, develop plans to build a cohesive school community, connect research with the professional context, engage in effective decision-making practices, and communicate results to constituents using appropriate written and verbal formats. Credit Hours: 3

EAHE510 - Higher Education in the United States An overview of American higher education in historical and sociological perspectives: its development, scope, characteristics, issues, problems, trends and criticism. Restricted to students admitted to master's degree or certificate in higher education, or consent of instructor. Credit Hours: 3

EAHE511 - Leading Curriculum and Assessment In this graduate level course, school professionals will learn to promote a shared vision of the elements of school and curriculum that make higher achievement possible, setting high expectations for all students to learn high-level content. Through this course, the school professional establishes effective curriculum delivery systems and utilizes leadership and facilitation skills to effectively manage curricular change. Additionally, the school professional promotes the success for all students by using data to initiate and continue improvement in school and classroom practices and increased student achievement. The school professional will accomplish these course goals by acquiring an understanding of the use of rigorous formative, interim, and summative assessments. Credit Hours: 3

EAHE513 - Organization and Administration in Higher Education Theories and practices in governance of various types of higher education institutions with attention to problems of formal and informal structures, personnel policies, decision making, institutional self-study and societal-governmental relations. Restricted to students admitted to master's degree or certificate in higher education, or consent of instructor. Credit Hours: 3

EAHE514 - Case Studies in Higher Education This course is designed to allow graduate students studying to be administrators in higher education practice at analyzing problems and issues in postsecondary education, as well as problems and issues facing college students. Extended, semester-long case studies are utilized. Prerequisite: EAHE 508 or consent of instructor. Credit Hours: 3

EAHE515 - Student Affairs Administration Study of organization, functions, and under girding principles and policies of student development and the related student personnel services and programs in contemporary colleges and universities including community colleges. Restricted to students admitted to master's degree or certificate in higher education or consent of instructor. Credit Hours: 3

EAHE516 - College Students and College Culture Study of the nature of students, the impact of the college on student development, and the nature of the college as a unique social institution. Study of student subcultures and the interaction between students, institutions, and communities. Restricted to

students admitted to master's degree or certificate in higher education, or consent of instructor. Credit Hours: 3

EAHE517 - The Legal Framework of Education A study of administrative, judicial, statutory and constitutional laws which have application in American public schools. Credit Hours: 3

EAHE518 - College Teaching Emphasis is given to teaching and learning styles, the teaching-learning process, specific methods of teaching, strategies to improve teaching, resources available to the classroom teacher, and methods of evaluating teaching. Other topics will include: models of effective teaching behavior, academic freedom and due process. Course also open to teaching assistants from other departments. Credit Hours: 3

EAHE519 - School Law and Educational Policy In this graduate level course, school principal candidates will become acquainted with fundamental legal issues that impact P-12 schools. The candidates will acquire knowledge to understand, respond to, and influence the larger political, legal, social, economic, and cultural context while making ethical decisions, promoting democratic values and building equitable and just learning communities. Credit Hours: 3

EAHE520 - Current Issues in Educational Administration An examination of current issues that affect the various administrative levels in educational systems. The issue(s) selected receives intensive treatment and review. This class is offered specifically for those seeking the superintendent's endorsement. Credit Hours: 1-6

EAHE521 - Leadership for Equity: Special Populations In this graduate level course, school professionals will learn the role of educational leadership in promoting and supporting educational equity as a critical dimension of democracy, social justice, and related legal aspects. They will consider the moral/ethical, contextual, communal, dialogic, and transformative dimensions of school leadership that support the development of an equitable school environment, with particular emphasis on special programming for students with disabilities, economically disadvantaged, homeless, gifted, early childhood, English-language learners, and racial/ethnic minority students. Credit Hours: 3

EAHE523 - Effective Management and Operations: Finance, Facilities, Technology & Grants In this graduate level course, school professionals will acquire skills for successful school management of finances, facilities, technology and grants. The course covers vital aspects of managing fiscal, human, and material resources that facilitate student learning, safety and support curriculum and instruction. Restricted to admission to a PK-12 graduate program in COEHS. Credit Hours: 3

EAHE524 - Curriculum Design and Policy A study of assumptions, materials, methods and evaluation in the designs of various curricula in colleges and universities, with attention to curriculum resources and policy. Credit Hours: 3

EAHE525 - Equity and Diversity in Higher Education This course is designed to educate students in two ways: by broadening understanding and deepening readings into diverse higher education populations and issues, and by applying those understandings and readings to their practices as postsecondary administrators and educators. Credit Hours: 3

EAHE526 - The Community College A study of the characteristics and functions of the community or junior college in American higher education. Course content aids the student in developing a general understanding of the philosophy, objectives, organization, and operations of this significant institution. Credit Hours: 3

EAHE528 - Finance in Higher Education A study of financing higher education in American society and related economic aspects. Emphasis is given to sources of funds and management of financing in colleges and universities including budgeting, control, accountability and current trends. Restricted to students admitted to master's degree or certificate in higher education, or consent of instructor. Credit Hours: 3

EAHE532 - Accounting and Budgeting in School Operations This course provides candidates with a foundation in accounting and budgeting as relates to K-12 school operations and management. Topics covered will include budgeting, payroll administration, bonded indebtedness, accounting for receipts and expenditures, extracurricular funding, analysis of statements, financial issues related to auxiliary

enterprises, and other principles of accounting as related to school operations. This course is specifically for candidates seeking to complete the Chief School Business Official Endorsement. Credit Hours: 3

EAHE534 - School Fiscal Management and Planning This course provides candidates with a foundation in accounting and budgeting as relates to K-12 school operations and management. Applications addressed in this course will include: data processing systems to school fund accounting, payroll, inventories, curriculum, personnel, registration procedures, budget, textbook accounting, and other business office functions. This course is specifically for candidates seeking to complete the Chief School Business Official Endorsement. Prerequisite: EAHE 532 or consent of the instructor. Credit Hours: 3

EAHE535A - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Student organization and activities advising. Credit Hours: 1-3

EAHE535B - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Law and higher education. Credit Hours: 1-3

EAHE535C - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Student financial assistance. Credit Hours: 1-3

EAHE535D - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Admissions and records. Credit Hours: 1-3

EAHE535E - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Academic and faculty administration. Credit Hours: 1-3

EAHE535F - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Current issues in student affairs. Credit Hours: 1-3

EAHE535G - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Housing administration. Credit Hours: 1-3

EAHE535H - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Non-traditional students. Credit Hours: 1-3

EAHE535I - Higher Education Seminar I (Same as WGSS 535) A series of seminars for specialized study of areas of administrative practice and policy. Gender in higher education. Credit Hours: 1-3

EAHE535J - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Student union administration. Credit Hours: 1-3

EAHE535K - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Special topics. Credit Hours: 1-3

EAHE535S - Higher Education Seminar I A series of seminars for specialized study of areas of administrative practice and policy. Special Topics. Credit Hours: 1-6

EAHE536 - History of Education in the United States An historical study of the problems of American education. Credit Hours: 3

EAHE537 - The Adult Learner The focus of study will be adult learners, their motivations, learning styles, needs, goals, life stages, life cycles and developmental patterns. Implications for adult learning will be sought. Credit Hours: 3

EAHE538 - Education, Policy, and Social Forces In this graduate level course, students will examine the foundations of educational policy and practice. Students will develop the ability to critically analyze historical and contemporary issues in American education by exploring the social, political, economic, and cultural context of education. Students will be able to evaluate educational policies and practices in light of various assumptions, ideals, and values about public education. This knowledge will enable educators to understand the broader social and political forces that shape their educational community (i.e., students, faculty, and staff) and their roles as educational leaders. Credit Hours: 3

EAHE542 - Contrasting Philosophies of Education An examination of current educational problems and trends in the light of contrasting philosophies of education. Credit Hours: 3

EAHE543 - Collective Bargaining An investigation of theory as related to collective bargaining and professional negotiations. Course will emphasize various approaches to collective bargaining and the roles included in those processes. Course will also use cases and simulations to illustrate examples of collective bargaining processes. Credit Hours: 3

EAHE544 - Education and Culture A study of the concept of culture and its relation to the process of education. Credit Hours: 3

EAHE545A - Higher Education Seminar II-Community College Administration A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-3

EAHE545B - Higher Education Seminar II-Federal Initiatives in Higher Education A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-3

EAHE545C - Higher Education Seminar II-Institutional Policy Research A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-3

EAHE545D - Higher Education Seminar II-Current Issues in Higher Education A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-3

EAHE545E - Higher Education Seminar II-Higher Education Administration A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-3

EAHE545F - Higher Education Seminar II-Institutional Finance and Administration A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-3

EAHE545G - Higher Education Seminar II-History of Higher Education A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-3

EAHE545H - Higher Education Seminar II-Sociology of Higher Education A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-3

EAHE545J - Higher Education Seminar II-Adult and Continuing Education A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-3

EAHE545S - Higher Education Seminar II-Selected Topics A series of seminars for scholarly inquiry into significant aspects of higher education. Credit Hours: 1-8

EAHE546 - Co-Curricular Assessment The purpose of this class is to develop an understanding of assessment practices as applied to the out-of-class experiences of college students. Throughout this course, students will become familiar with concepts and approaches used to assess various areas within student affairs. Credit Hours: 3

EAHE547 - Evaluating Educational Research The goal of this course is to develop student skills as consumers of research in education. Standards and practices in multiple traditions of educational research are reviewed in order to help students critically read, assess, and evaluate research. Restricted to master's degree and certificate in higher education, or consent of instructor. Credit Hours: 3

EAHE548 - Developing Professionals and the Inquiry of Professional Practice In this graduate level course, school professionals learn to critically read, evaluate and apply educational research so that they can engage their school systems in continuous inquiry to positively affect student achievement. School professionals will develop an action research project proposal designed to appropriately address a building-level issue. Students will learn to lead action research through the development of sound research design. Credit Hours: 3

EAHE550 - School Business Administration A study of the principles and practices governing management of business affairs of a public school system. Included are such topics as revenues, expenditures, accounting, auditing, reporting and applications of electronic data processing as a management tool. Practical experience is given in using the Illinois financial accounting manual as well as

other managerial procedures. Detailed study is made of the role of the school business administrator in the local school district. Credit Hours: 3

EAHE551 - Policy and Politics in American Education Systems An examination of the political setting of educational administration and a general study of public policy in the American educational system. This course is open to students in certification and doctoral programs only. In addition to educational leadership related to the politics and policy of education, emphasis is given to innovative and contemporary practices of school administration. This course will also cover policy analysis as a tool for examining and evaluating existing and proposed policies. Credit Hours: 3

EAHE553 - Planning Processes and Policy Development Surveys issues involved with accountability in education. Explores in some detail various planning models. Examines concepts and strategies in public policy development. Credit Hours: 3

EAHE555 - Leadership and Change in Education Organizations An advanced seminar devoted to the study of leadership and change in the administration of complex education organizations. Particular emphasis is placed on organizations as social units that pursue specific goals, which they are structured to serve. Leadership and change are examined in terms of how they can influence organizational goals, organizational structure and organizations and the social environment. Credit Hours: 3

EAHE556 - The School Superintendent and Board of Education Focuses on superintendent-school board relationships. It investigates the administrative team's role and functions as they relate to leadership in educational policy making. Credit Hours: 3

EAHE558 - Personnel Evaluation and Administration This course will provide the administrator with the concepts, strategies and assessment measures to evaluate and manage personnel in both simple and complex organizational settings. Credit Hours: 3

EAHE564 - Seminar in Ethics and Social Justice in Education The goals of this course are to provide educational leaders with a framework for understanding the dynamics of oppression, to offer tools for ethical decision making, and to increase awareness and responsibility toward social justice issues in education. Credit Hours: 3

EAHE569 - School Operations and the Law This course presents information pertinent to understanding, interpreting, and applying appropriate law as a central office school administrator. A major emphasis concentrates on understanding basic principles of law in order to apply them at a school district-level. An emphasis focuses on interpreting current legislation for application purposes as a school administrator. Prerequisite: EAHE 519 or equivalent. Credit Hours: 3

EAHE575 - Women in Higher Education (Same as WGSS 575) The goal of this course is to provide an overview of women in higher education. Topics that will be considered are: feminism's impact of women in higher education; the division of labor for women (including faculty and professional staff positions); historical and sociological perspectives of access to higher education including curriculum and pedagogy. Credit Hours: 3

EAHE576 - College Men and Masculinities (Same as WGSS 576) This course is a readings-based seminar covering concepts of masculinity as demonstrated by collegiate men in the United States. The readings in this course cover cultural as well as identity elements of what being a "college man" means (and how that definition has changed over time and contexts). The readings consist of historical, contemporary and theoretical scholarship concerning collegiate masculinity. Credit Hours: 3

EAHE588 - General Graduate Seminar Selected topics or problems related to administration and leadership in education. Credit Hours: 3-6

EAHE590A - Readings Advanced reading in one of the following areas-Administration. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590B - Readings Advanced reading in one of the following areas-Buildings. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590C - Readings Advanced reading in one of the following areas-Supervision of curriculum. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590D - Readings Advanced reading in one of the following areas-Finance. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590E - Readings Advanced reading in one of the following areas-School law. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590F - Readings Advanced reading in one of the following areas-Supervision. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590G - Readings Advanced reading in one of the following areas-Comparative education. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590H - Readings Advanced reading in one of the following areas-History of education. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590I - Readings Advanced reading in one of the following areas-Philosophy of education. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590J - Readings Advanced reading in one of the following areas-Sociology of education. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590K - Readings Advanced reading in one of the following areas-Adult and community education. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE590L - Readings Advanced reading in one of the following areas-Higher education. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-6

EAHE591 - Individual Study Individual inquiry into selected problems or special topics in higher education under supervision of a graduate faculty member. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-6

EAHE593A - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in administration. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593B - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in buildings. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593C - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in supervision of curriculum. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593D - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in finance. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593E - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in school law. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593F - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in supervision. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593G - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty

member in comparative education. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593H - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in history of education. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593I - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in philosophy of education. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593J - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in sociology of education. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593K - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in adult and community education. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE593L - Individual Research Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in higher education. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-3

EAHE595 - Principal Internship The School Principal Internship is a sustained, continuous, structured, and supervised learning opportunity for practicing principals (interns) to observe firsthand the role and function of the school principal. The internship takes place within 12 months during which students complete a total of 6 credit hours. Students may repeat the course to improve outcomes to meet standards for educator licensure/endorsement. Credit Hours: 2-6

EAHE596 - School Business Management Internship An internship conducted in a K-12 school setting for fulfillment of the state of Illinois' School Business Management Endorsement. Special approval needed from student's adviser or designee. Students must complete a total of 6 credit hours of internship to qualify for the state endorsement. Students may repeat the course to improve outcomes to meet standards for educator licensure/endorsement. Credit Hours: 1-6

EAHE597 - Superintendent Internship An internship conducted in a central administrative setting for fulfillment of the state of Illinois' Level III Administrative Certificate. Special approval needed from student's adviser. Students may repeat the course to improve outcomes to meet standards for educator licensure/endorsement. Credit Hours: 1-6

EAHE598 - Higher Education Internship The internship provides an opportunity for practical experience related to college level teaching or administration. Each student must obtain prior approval from his/her advisor before registering for or starting an internship. Additionally, each student must pass all of the assigned internship requirements in order to receive a pass for the course. Special approval needed from the advisor. Credit Hours: 1-6

EAHE599 - Thesis Credit Hours: 1-6

EAHE600A - Dissertation Minimum of 24 hours to be earned for the Doctor of Philosophy degree. Credit Hours: 1-12

EAHE600B - Capstone Minimum of 12 hours to be earned for the Doctor of Education degree. Credit Hours: 1-12

EAHE601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or

research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

EAHE699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Higher Education Faculty

Colwell, William Bradley, Professor, Ph.D. and J.D., University of Illinois at Urbana-Champaign, 1996. Education law and policy, collective bargaining.

Dilley, Patrick, Professor, Ph.D., University of Southern California, 2000; 2001. History of higher education, gender studies, and qualitative research.

Donahoo, Saran, Professor and Program Director, Ph.D., University of Illinois at Urbana-Champaign, 2004; 2004. Higher education administration and educational administration.

History and Historical Studies

The School of History and Philosophy offers graduate programs leading to the Master of Arts degree in History and the Doctor of Philosophy degree in Historical Studies.

Research Facilities

Morris Library on the campus is the fourth largest library in Illinois. Housed in a modern seven-story building, it contains more than two million volumes. Morris Library acquires current scholarly publications not only from United States but also from Latin America and European publishers. The long-term use of highly specialized materials is afforded by the affiliation of Morris Library with the Center for Research Libraries in Chicago.

The holdings in history and related areas amount to more than 500,000 volumes. To these must be added 20,000 reels of microfilm containing printed secondary works and 6,000 volumes of printed source material and 30,000 volumes of early American imprints prior to 1800 on microtext. Among the materials in the process of acquisition is a microtext edition of all newspapers published in the United States prior to 1820.

The library also possesses substantial holdings in the form of microfilm editions of presidential papers, dispatches and instructions of the state department since 1789, massive holdings in consular records, and the Adams family papers. The library has been a complete repository of United States government documents since 1954 and holds a large collection of earlier documents, including a virtually complete Congressional set.

Following the acquisition of the 7,000-volume library of Jose Morgrovejo Carrion of Ecuador in 1960, the library has systematically expanded its holdings in Latin American history, government, literature, and anthropology. The papers of Francisco Vásquez Gómez, Mexican political leader (1907–1919), Peruvian diplomat and business tycoon, Federic Barreda and Samuel Putnam, American expert on Latin American affairs, provide rich research opportunities. Extensive files of serial publications from Argentina, Bolivia, Paraguay, Uruguay, Cuba, and Mexico also contain diverse sources for investigation. Many of the above materials are unavailable elsewhere in the United States.

Holdings in European history include the standard documentary publications, as well as scholarly serials and journals. The materials to support research are strongest in modern German and English history.

Admission

Graduate work in history is offered at both the master's and the doctoral levels. Admission to programs administered by the History program must be approved by the program, with approval dependent upon the preparation, ability, and promise of the individual student.

This program requires a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in History. Applicants must pay this fee by credit card.

M.A. in History

For the Master of Arts degree major in history, applicants are expected to have an undergraduate GPA of 3.0 or better (A = 4.00) on the entire last undergraduate GPA earned at the time of application. Applicants with GPAs of below 3.00 may be granted conditional admission. Applicants must also provide three letters of recommendation and a personal statement in which the applicant expresses professional goals. Conditional admittances must earn a 3.00 GPA in graduate coursework in the first semester. The program reserves the right to terminate from the history program a student who does not establish and maintain a 3.00 GPA in history courses.

Ph.D. in Historical Studies

For admission to the doctoral program, each applicant should submit to the program, in addition to the material required by the Graduate School, the following: three letters from former teachers, preferably at the graduate level; a letter in which the applicant expresses professional goals and a writing sample.

In rare instances, accelerated entry into the Ph.D. in Historical Studies program is possible for exceptionally qualified M.A. in History students who have made an early commitment to doctoral study. Such students may petition after two semesters in the M.A. in History program for accelerated entry. The petitioner must demonstrate the ability to perform at the Ph.D. level. This includes a GPA of at least 3.7 (*A* = 4.0) in graduate history courses, exemplary letters from SIUC professors, and the submission of a seminar paper or published article for evaluation by the Graduate Studies Committee. The student must have completed one colloquium or seminar, HIST 500, HIST 501 and the research tool required for the M.A. in History. Upon approval, the History program will recommend to the Graduate Dean direct admission to the Ph.D. in Historical Studies program. Direct entry into the Ph.D. in Historical Studies program from baccalaureate studies is possible for students of exceptional ability. This can be demonstrated through extensive undergraduate course work of superior quality, proficiency in research tools, previous research experience, and letters of recommendation. Students who have taken course work after the undergraduate degree may not petition for direct entry. Upon approval of the petition, the History program will recommend to the Graduate Dean direct admission into the Ph.D. in Historical Studies program.

Assistantships and Fellowships

Fellowships and teaching assistantships are available to qualified graduate students. All carry stipends and remission of tuition. Application for these awards should be submitted by January 10 in order to be considered for the following academic year.

Additional information concerning rules governing the graduate program in history may be obtained by writing to the Director of Graduate Studies, School of History and Philosophy.

Master of Arts (M.A.) in History

Thesis Track

The thesis track should be selected by those students who plan to continue on for a doctoral degree in history, either at SIUC or elsewhere. The thesis track provides students with the necessary historiographical and methodological skills to complete a significant, original research project, and to be prepared for the rigors of a Ph.D. program. The decision to opt for the thesis track ought to be made in consultation with the student's assigned advisor and/or the Director of Graduate Studies during the first semester of the first year of the M.A. in History. The thesis track M.A. in History consists of 33 credit hours of coursework (including six thesis hours), the completion of a research tool (usually proficiency in a foreign language), and the writing and oral defense of a thesis. A sample program of study for the thesis track is below:

M.A. in History, Thesis Track

Semester 1 Courses	Semester 2 Courses
HIST 500 (3 credit hours)	HIST 501 (4 credit hours)
Colloquium or Seminar (4 credit hours)	Colloquium or Seminar (4 credit hours)
Research Tool (3 credit hours)	Research Tool (3 credit hours)
Total credit hours: 10	**Total credit hours: 11**

M.A. in History thesis track students should, in consultation with their advisor, select elective History courses, HIST 590 independent readings course or courses outside or courses outside the History program on topics or themes that will support or complement their thesis research and writing. A maximum of 10 credit hours of coursework external to the History program will count toward the required 33 credit hours. Thesis students are highly encouraged to complete their research tool in their first year.

M.A. in History, Thesis Track

Semester 1 Courses	Semester 2 Courses
HIST 599 (Thesis – 3 credit hours)	HIST 599 (Thesis – 3 credit hours)
Elective (3 credit hours)	Elective/Colloquium or Seminar (3-4 credit hours)
Elective/Colloquium or Seminar (3 credit hours)	
Total credit hours: 9	**Total credit hours: 6-7**

In consultation with their advisor, a thesis track M.A. in History student should begin the research for his/her thesis in the spring or summer of the first year in the program, ideally enrolling in a readings (HIST 590) course with their advisor for an introductory survey of historiography and pertinent issues in their field of interest. Research and writing of the thesis continue in the fall, so that the thesis is ready for distribution to the thesis committee (three faculty, at least two of whom are full-time faculty in the History program) in the early spring (prior to March 1) of Year 2. The defense of the thesis will be an oral defense, during which the examining faculty will consider the content, methodology, conclusions, style, and historiography of the work, and ask the student to place his/her work within the larger context of his/her program of study, including the historiography of the thesis's field and especially HIST 500 and HIST 501.

Two Research Paper Track

The two paper track should be selected by M.A. in History students who envision careers as high school and community college educators, and those seeking to develop their interests in a historical field.
The two paper M.A. in History track requires the completion of 36 credit hours of coursework and the completion of a research tool (usually proficiency in a foreign language, or a nonlanguage option). Rather than a thesis, the capstone activity of the two paper track is the completion of two research papers in conjunction with two seminar courses, and defend their papers in an oral examination. The examination committee will include faculty who taught the colloquium/seminar courses resulting in the two papers. The M.A. in History two paper track should provide students with a basic understanding of historiography and historical methods, give the student some experience in historical research and writing at the graduate level, and provide in-depth knowledge of the history and historiography of their selected area of interest. A sample program of study is below:

M.A. in History, Two Research Paper

Semester 1 Courses	Semester 2 Courses
HIST 500 (3 credit hours)	HIST 501 (4 credit hours)
Colloquium 1 or Seminar 1 (4 credit hours)	Colloquium 1 or Seminar 1 (4 credit hours)
Research Tool (3 credit hours)	Research Tool (3 credit hours)
Total credit hours: 10	**Total credit hours: 11**

M.A. in History two paper track students should, in consultation with their advisor, select elective History courses, (HIST 590 independent readings course, and 2 colloquium/seminars), or courses outside of the History program on topics or themes relevant to their interests. A maximum of 10 credit hours of coursework external to the History program will count toward the required 33 credit hours. Students are highly encouraged to complete their research tool in their first year.

M.A. in History, Two Research Paper

Semester 1 Courses	Semester 2 Courses
Colloquium 2 or Seminar 2 (4 credit hours)	Colloquium 2 or Seminar 2 (4 credit hours)
Elective (3 credit hours)	Elective (3 credit hours)
Elective (3 credit hours)	Elective (3 credit hours)
Total credit hours: 10	**Total credit hours: 10**

Accelerated M.A. in History

Students already on track to earn a bachelor's degree in History at SIUC will be eligible to start the preliminary phase of the accelerated M.A. in History curriculum if they have earned a cumulative 3.20 GPA by the end of the Spring semester of their junior year and received program approval to take HIST 500 and HIST 501 during their senior year. Qualified students can initiate the approval process by submitting a written statement to the Director of the School of History and Philosophy and the Director of Graduate Studies in History expressing their interest in the accelerated M.A. in History program and requesting permission to begin the curriculum. Approval to begin the accelerated M.A. in History curriculum does not guarantee admission to the graduate program, though it is required as a preliminary step toward completing the accelerated M.A. in History program. Students approved to begin the accelerated M.A. in History curriculum during their senior year must also apply to the two-year M.A. in History program and satisfy the usual deadlines and requirements for admission to the two-year M.A. in History program for the following academic year in order to be formally admitted into the accelerated M.A. in History program as a graduate student eligible to earn a Master's in History degree. Additionally, all requirements for completing the accelerated M.A. in History program are the same for completing the two-year M.A. in History program. Students who begin the accelerated M.A. in History curriculum while finishing the undergraduate curriculum must complete the undergraduate curriculum and graduate from SIUC before entering the graduate program as graduate students.

Approval to begin the accelerated M.A. in History curriculum includes the completion of a memorandum of interest (MOI) that indicates the agreement of the student to complete HIST 500 (The Historian's Craft - 3 credit hours), HIST 501 (Recent Historiography - 4 credit hours), and HIST 490 (Special Readings in History - 2 credit hours with the anticipated graduate faculty advisor of the student to begin research for the thesis) during the senior year. Enrollment in HIST 500 and HIST 501 requires approval from the program and the Graduate School following the procedure indicated in the "Request for 500-Level Course by an Undergraduate" form. The 9 credit hours earned for these courses count toward the bachelor's degree when completed. The same 9 credit hours from HIST 500, HIST 501, and HIST 490 will count toward the M.A. in History degree once the student has been formally admitted to the graduate program following the completion of the B.A./B.S. in History. The MOI with the signatures of the student, the Director of the School, and the Director of Graduate Studies in History will be sent to the Graduate School for approval.

Once admitted to the graduate program, students in the accelerated M.A. in History program complete the established requirements for either the thesis-track M.A. in History or non-thesis M.A. in History, depending on which track the student pursues. Students following the thesis track are encouraged, but not required, to complete one colloquium and research seminar combination as part of their coursework. Students following the non-thesis track must complete two colloquium and research seminar combinations to produce the two required research papers. In addition to transferring 9 credit hours in HIST 500, HIST 501, and HIST 490 from their undergraduate studies, accelerated M.A. in History students must complete 24 graduate-level credit hours in two semesters to finish the degree in one additional year.

Accelerated M.A. in History Program

Semester 1 Courses	Semester 2 Courses
Colloquium 1 or Seminar 1 (4 credit hours)	Colloquium 1 or Seminar 1 (4 credit hours)
Colloquium 2 or Seminar 2 (4 credit hours) or HIST 599 (3 credit hours)	Colloquium 2 or Seminar 2 (4 credit hours) or HIST 599 (3 credit hours)
Electives/Research Tool (4-5 credit hours)	Electives/Research Tool (4-5 credit hours)

Doctor of Philosophy (Ph.D.) in Historical Studies

A student seeking the Ph.D. degree in Historical Studies must pass preliminary examinations and submit a satisfactory dissertation based on independent and original research. In preparation for preliminary examinations, the doctoral student must complete at least 24 graduate credit hours. These hours must be completed during a period of not more than four calendar years. The courses and hours of credit necessary for a Ph.D. in Historical Studies student to prepare for preliminary examinations will be determined by the student's advisory committee. All Ph.D. in Historical Studies students must include in their 24 credit hours six 500-level courses (not including HIST 500, HIST 501, or HIST 597) with grades of *A* or *B*. The goal is to develop high competence in the selected fields in which the student will be examined. Students are responsible for preparing three fields in which they will be examined. Two of the three fields will be selected from the following list of general fields:

- United States to 1877
- United States since 1865
- Latin America, Colonial
- Latin America, National
- Europe, medieval
- Europe, early modern
- Europe, modern
- Britain, modern
- East Asia, modern
- Africa and African Diaspora
- Middle East

The third field is a focused field of study defined in consultation with the student's examination committee. Examples of focused fields are available on the history program website.

The student's advisory committee may require the student to take a diagnostic examination. All Ph.D. in Historical Studies students must complete at least six credit hours of graded graduate work in a field outside North America and Western Europe.

Two research tools are required by the Graduate School. At least one research tool must be a foreign language. Information on requirements for two research tools may be found on the program's website.

Students may undertake an internship program under the direction of their advisory committees. More specific information is available on file in the school office and on the website. After completing the course work, fulfilling the research tool requirements, passing the preliminary examinations, and presenting an acceptable dissertation prospectus, the student will be recommended for Ph.D. in Historical Studies candidacy and will devote full time to the dissertation. Dissertation subjects must be chosen from either United States history, Latin American history, European history, African history, or history of Asia/the Middle East. The final oral examination will cover the field of the dissertation and related matters.

Cooperative Ph.D. Program

The doctoral program in history at SIU-Carbondale and SIU-Edwardsville have entered into a cooperative Ph.D. program in Historical Studies which enables students to do work on both campuses. Additional information may be obtained at siue.edu/academics/graduate/degrees-and-programs/history-phd/pdf/HIST_MOU.pdf.

History Teaching Endorsement (Dual Credit Licensure)

The School of History and Philosophy offers a History Teaching Endorsement for high school teachers seeking this credential as a dual credit instructor of History. The Higher Learning Commission and the State of Illinois require teachers to have 18 credit hours in graduate course work for any subject they seek to teach as a dual credit, as long as they "hold a qualified master's degree or any master's degree with 18 graduate credit hours of coursework in the desired discipline."

Online Masters of Science in Education with History

Students or high school teachers pursuing the Masters of Science in Education (M.S.Ed.) may count the 18 credit hours for the History Teaching Endorsement toward their degree. For additional information about the M.S.Ed., please contact Grant Miller (gmiller@siu.edu).

History Teaching Endorsement Courses (choose 18 credit hours from the following)

ONLINE COURSES

HIST 409: Food and History
HIST 416: Socialism: The Dream and the Nightmare
HIST 427: World War I
HIST 429: Political Violence in the Modern World
HIST 447: The British Empire
HIST 473: Comparative Slavery
HIST 478: Southern Africa, 1650-present
HIST 485: Revolutions in the Middle East
HIST 486: Arab-Israeli Conflict
Students may petition to take other History courses that are offered on campus. Contact:
Getahun Benti (benti@siu.edu), Director of Graduate Studies.

Certificate in Women, Gender, and Sexuality Studies

The School of History and Philosophy participates in a post-baccalaureate certificate in Women, Gender, and Sexuality Studies. History graduate students interested in pursuing a certificate in Women, Gender, and Sexuality Studies (WGSS) should contact the WGSS Director and/or cross-listed faculty for the required courses and guidelines. See the Graduate Certificate Requirements for more information. This certificate recognizes the important interdisciplinary nature of Women, Gender, and Sexuality Studies and History.

History and Historical Studies Courses

HIST401 - Atlantic History (Same as AFR 401) This course examines the origins and development of the Atlantic basin as an intercommunication zone for African, European and American societies from the mid-15th century through the early-19th century. Themes include transformation of environments, forced and voluntary migrations, emergence of distinct Atlantic culture communities, development of Atlantic economics and formulation and implementation of Atlantic revolutionary ideologies. Credit Hours: 3

HIST403 - American Indians and U.S. Empire Use historical analysis to investigate sovereignty issues involving American Indians and the United States. The course looks critically at the relationship between Native people and dominant U.S. society in terms of colonialism. Students will read academic scholarship and write papers on related cultural, economic, political, and social topics. The course is designated as Writing Across the Curriculum (WAC). Prerequisite: None, HIST 366 recommended. Credit Hours: 3

HIST406A - Gender, Family and Sexuality in Pre-Modern Europe (Same as WGSS 406A) A discussion of the history of the family, creation of gender roles and importance of sexuality from medieval times to the French Revolution. Credit Hours: 3

HIST406B - Gender, Family, and Sexuality in Modern Europe (Same as WGSS 406B) A discussion of the history of family, creation of gender roles, and importance of sexuality from the French Revolution to the present. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

HIST407 - History of Latinos in the United States This course examines the history of Latino/a and Latin American peoples in the United States from the Colonial Era to the present. Themes to be addressed in the course include early imperialism and commercial expansion, the social construction of

race, the formation of "borderland" communities, Latino immigration and assimilation, the centrality of work and labor within Latino history, and contemporary Latino culture and politics. Credit Hours: 3

HIST408 - History of Mexico This course surveys the history of Mexico from the earliest human inhabitation to the present. It will present different interpretations of the major themes and developments in Mexican history. A goal is to understand Mexico from the perspective of the Mexicans rather than from the point of view of the United States. Themes to be included in the course include the diversity of pre-Columbian indigenous societies; Spanish conquest; colonialism and anti-colonialism; Mexican independence; the historiography of the Mexican Revolution; and the place of Mexico within the world-economic system. Credit Hours: 3

HIST409 - Food and History Food is fundamentally about survival-it was for our ancestors millenia ago, and continues to be so, not only for the millions of undernourished worldwide, but for all of humanity as we confront the impact of obesity, globalization and environmental change. Because food is essential to our survival, its history is long, varied, and rich, and touches on themes including (but not limited to) politics and government; gender, race, and ethnicity; the family, religion and culture; health and the environment, and business, industry, and advertising. This class will explore these themes of global food history. Credit Hours: 3

HIST410 - Europe in the Long Nineteenth Century, 1789-1914 This course offers a topical examination of the history of Europe from the French Revolution to World War I, mainly focusing on the French Revolution, industrialization, nationalism and nation building, and imperialism. There will also be some focus on European intellectual and cultural transformations during this period. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

HIST412A - Empire and Social Conflict in the Roman Republic The social, political and cultural consequences of Roman expansion during the Republican period (c. 700-44 BCE). Focus on reading and analyzing primary sources. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

HIST412B - Religion and Society in Imperial Rome Religious, social, and cultural conflict and change in the Roman Empire, first through third centuries. Focus on reading and analyzing primary sources. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

HIST415 - Tudor and Stuart Britain Course focuses on the political, cultural, and religious worlds of early modern Britain under two momentous, though short-lived dynasties, the Tudors (1485-1603) and the Stuarts (1603-1714). Considerable attention will be paid to Henry VIII and the Henrican Reformation, the English Civil War, and the Glorious Revolution. Credit Hours: 3

HIST416 - Socialism: The Dream and the Nightmare The history of socialism, from Marx to the triumph of socialist states around the world and, then, their collapse in the 1990s. Examines the writings of socialist thinkers and their critics, histories of communism in various nations, democratic socialism in Europe, along with the experiences of those who lived under socialism. The Dream was the end of income inequality, rising living standards, and fraternal attachment to "comrades" rather than family, ethnic groups, nations, religions-attachments that had fueled hatred, hostility, and war. Explaining how the Dream became Nightmare is one of the objectives of this course. This is a multi-disciplinary course that incorporates philosophy, history, film, literature and other media. Credit Hours: 3

HIST420 - Reformation Concentrates on the movement of religious reforms in the 16th Century. Emphasis on its roots in the past, particularly in earlier expressions of popular piety and to the wider social and political effects in the 16th and 17th centuries. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

HIST425A - Twentieth Century Europe 1914-1945 Political, social, cultural and economic development of the major European states during the present century. Credit Hours: 3

HIST425B - Twentieth Century Europe Since 1945 Political, social, cultural and economic development of the major European states during the present century. Credit Hours: 3

HIST426 - Cities and Culture in Europe 1870-1914 Cultural and social history focusing on four European cities (Paris, Berlin, Vienna, St. Petersburg) in the Fin-de-Si?e period (1870-1914). Fulfills the CoLA Writing-Across-the Curriculum (WAC) requirement. Credit Hours: 3

HIST427 - World War I The first World War (1914 - 1918) from a variety of perspectives, with emphasis on cultural, social and political. Seminar-type format with discussions of topics such as the war's causes, nature of trench warfare, the home front, and political and cultural impact of the war. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

HIST429 - Political Violence in the Modern World This course will look at various forms of state and political violence in the 19th and 20th centuries. We will start with the "Reign of Terror" in the French Revolution, then look at the rise of terrorism in the later 19th century. The course will also cover state violence in the 20th century such as WWI, the Shoah, and the GULag. We will examine the "logic" and justification of both state and non-state political violence. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

HIST437 - Lesbian and Gay History in the Modern United States (Same as WGSS 437) This course explores the social, political, and cultural history of lesbians, gay men, and other sexual and gender minorities in the United States from the turn of the twentieth century to the present. Themes to be taken up in the class include: the emergence of heterosexuality and homosexuality as distinct categories of identity; the intersection between sexual identity and identities of race, class, gender, and ethnicity; the relationship between homosexuality and transgenderism; the movement for gay liberation; the creation of lesbian and gay urban and rural subcultures; representations of homosexuality in popular culture; anti-gay backlash; and AIDS. Credit Hours: 3

HIST442 - Victorian Britain: Politics, Society, and Culture An examination of British politics, society, and culture examining political transformations from the Glorious Revolution to the Great War, industrialization and the emergence of a class society, Ireland and the British Empire in British culture, and Victorian culture. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

HIST444 - The Holocaust An introduction to Nazi German's systematic mass murder of Europe's Jews and other minorities. Using works of history, literature, and film, we will examine such topics as anti-Semitism, the behavior of "ordinary Germans" during the 30s and 40s, Jewish resistance, Holocaust denial and memory after the Holocaust. Credit Hours: 3

HIST445 - Science, Crimes, and Criminals in Latin America This course introduces students to theories, concepts, and the history of crimes, criminals, and scientists in Latin America. It will address the social construction of crime, criminals, and criminality to show the way in which different Latin American societies, and their respective histories viewed, described, defined, and reacted to "criminal" behavior. Credit Hours: 3

HIST447 - Culture and the British Empire This course will focus on the culture of modern British imperialism. It will examine the impact that the people and commodities of the empire as well as the practices of imperial rule had on modern British culture. The emphasis of the course will be on the implications of "imperial culture" in mediating gender, race, and class relations within the broader empire as well as contemporary Britain. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

HIST448 - Gender and Family in Modern U.S. History (Same as WGSS 448) This course explores the history of gender and the family in the United States from the late 19th century to the present. Themes to be explored include: the family and the state, motherhood, race and family life, and the role of the "family" in national politics. Credit Hours: 3

HIST450A - Colonial America The evolution of American society from European settlement through the Age of Jefferson, with special emphasis on social and political institutions and thought. Credit Hours: 3

HIST450B - American Revolution The evolution of American society from European settlement through the Age of Jefferson, with special emphasis on social and political institutions and thought. Credit Hours: 3

HIST451 - Antebellum America The struggle to define the nation in the political, economic and social realms; the emergence of women's rights, slavery, sectional conflict from 1815 to 1860. Credit Hours: 3

HIST452 - The Civil War and Reconstruction The study of the background to the Civil War, the Civil War, Reconstruction, and the Gilded Age. Credit Hours: 3

HIST455 - The Conservative View in American History Readings in American conservative thought, from the eighteenth-century to the present day, including traditionalist, neoconservative and libertarian writers. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

HIST457 - American Environmental History (Same as GEOG 457) An exploration of the attitudes toward and the interaction with the natural resource environment of North America by human settlers. Coverage from the Neolithic Revolution to the present. Credit Hours: 3

HIST460 - Slavery and The Old South (Same as AFR 460) This course examines slavery and southern distinctiveness from the colonial period to 1861. Discussion topics include the plantation system, race relations, women and slavery, and southern nationalism. Credit Hours: 3

HIST461 - Black Americans on the Western Frontier (Same as AFR 461) This course examines the history of African Americans in the American West. Taking both a chronological and thematic approach, it begins with a discussion of early black explorers in the age of encounter, and ends with a focus on black western towns established in the United States by the 1880's. Credit Hours: 3

HIST464 - History of American Capitalism This course examines the growth of the American economy, economic thought, the evolution of the firm, and the changing place of women and minorities in American business society. It also explores the intersection between business and other institutions in American life, including labor, law, literature, government, education and religion. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

HIST465 - History of Sexuality (Same as WGSS 465) Comprehensive survey of sexuality from the early modern period to the present. Examines social trends, politics, and cultural debates over various forms of sexuality. Students will engage in discussion, research, and writing. Areas of emphasis vary by instructor. Credit Hours: 3

HIST466A - History of the American West-Trans-Appalachian Frontier The American frontier and its impact on American society from the colonial period to the 20th century. Credit Hours: 3

HIST466B - History of the American West-Trans-Mississippi Frontier The American frontier and its impact on American society from the colonial period to the 20th century. Credit Hours: 3

HIST470 - Continuity and Change in Latin America An in-depth examination of major topics in the history of Latin America since pre-Columbian times, especially themes that have been prominent in recent scholarship. Lectures will be supplemented by outside readings and class discussion. Credit Hours: 3

HIST473 - Comparative Slavery (Same as AFR 473) A comparative study of slavery from antiquity to its abolition in the 19th century with the differing socio-cultural, political and economic contexts; organized chronologically, regionally and thematically. Credit Hours: 3

HIST478 - Southern Africa, 1650-1994 (Same as AFR 478) An examination of Southern African history with emphasis on South Africa from 1652 to 1994. Topics to be covered include conflicts and wars, migrations and state formations, the economics of minerals, industrialization and the Anglo-Boer War, intertwined histories of race relations, the politics of exclusion and apartheid, and the making of modern South Africa. Credit Hours: 3

HIST480A - History of China-Late Imperial China, 1350 to 1890 An in-depth examination of political, economic, social and cultural history of China from 1350 to 1890. Examines the imperial state, gentry and peasants, commercialization and social change in China from 1350 to 1890. Credit Hours: 3

HIST480B - History of China-Twentieth Century China, 1890 to the Present An in-depth examination of political, economic, social and cultural history of China from 1890 to the present. Focuses on nation building, ideology and rural-urban culture in 20th Century China. Credit Hours: 3

HIST481 - History of African American Women This course examines the history of African American women. Topics include slavery and freedom, community building, leadership, education, politics, religion, and the establishment of African American women's organizations. Participation in the abolition, suffrage, feminist, gay and lesbian, civil rights and black power movements are also topics of discussion. The course speaks to the resilience African American women showed despite the obstacles of race, class, and gender confronting them at every turn. Credit Hours: 3

HIST482 - Military History An introduction to the problems of armed conflict throughout history with emphasis varying by instructor. Credit Hours: 3

HIST484 - Modern Turkey This course explores the history of modern Turkey from the end of the Ottoman Empire and the foundation of the Republic in 1923 to the present. The goal is to introduce students to major social, political, cultural and economic events and issues in Republican Turkey. The course is organized around major political turning points such as World War One, the foundation of the republic, emergence of the single party regime, transition to a multi-party political system, the 1960, 1971 and the 1980 coups, return to democratization in 1983, and the Justice and Development Party rule. Course topics will range from Ottoman and Islamic legacies to Turkey's experiment with secular modernization and Turkish relations with the West during the Cold War. Credit Hours: 3

HIST485 - Revolutions in the Middle East (Same as HIST 485H) This class examines aspects of revolutions and revolutionary attempts in the history of the modern Middle East. Recognizing revolution as a global phenomenon, it begins by considering a variety of historical and theoretical approaches to understanding revolutions. It asks questions such as what constitutes a revolution, what contexts and causes lead to revolutions, and what effects revolutions engender. It then examines revolutions in the modern Middle East more closely by focusing on several specific cases such as the Ottoman and Iranian constitutional revolutions, the secular revolutionary experiment in early twentieth-century Turkey, attempts at a socialist revolution in the Arab world, the Islamic Revolution in Iran, and the Arab Spring. Not open to 1st Year students. Credit Hours: 3

HIST485H - Revolutions in the Middle East (Same as HIST 485) This class examines aspects of revolutions and revolutionary attempts in the history of the modern Middle East. Recognizing revolution as a global phenomenon, it begins by considering a variety of historical and theoretical approaches to understanding revolutions. It asks questions such as what constitutes a revolution, what contexts and causes lead to revolutions, and what effects revolutions engender. It then examines revolutions in the modern Middle East more closely by focusing on several specific cases such as the Ottoman and Iranian constitutional revolutions, the secular revolutionary experiment in early twentieth-century Turkey, attempts at a socialist revolution in the Arab world, the Islamic Revolution in Iran, and the Arab Spring. Honors students will complete an extra project for the course. Not open to 1st Year students. Credit Hours: 3

HIST486 - Arab-Israeli Conflict This course focuses on the background to, and current dimensions of, the continuing conflict between Israel, the Palestinians and the rest of the Arab world. Beginning with origins of Zionism in the late nineteenth century, it examines, the foundation of Israel, Palestinian responses, and relations between Israel and its Arab neighbors. Credit Hours: 3

HIST487 - The U.S. Civil Rights Movement (Same as AFR 497) This course provides an overview of the history of the Civil Rights Movement while engaging major debates in the field of Black Freedom Studies. Central themes will include the impact of the Cold War, the roles of women, and the relationship of civil rights to black power. We will also discuss the difference between popular memory and historical scholarship as well as the meaning of such discussions for contemporary issues of racial and economic justice. Credit Hours: 3

HIST488 - Islamic Political Movements This course examines the use of Islamic ideals and rhetoric in social and political movements in the Middle East from the nineteenth century to the present. It focuses on political parties such as the Muslim Brotherhood in Egypt, the Welfare Party in Turkey, and Hamas in Palestine. Credit Hours: 3

HIST489 - Women, State and Religion in the Middle East (Same as WGSS 489) Following an introduction to the question of women in Islamic law and Islamic history, this course will examine the changing status and experiences of women in a number of Middle Eastern countries in the 20th century, focusing on Egypt, Iran, and Turkey. Major themes will include legal, social and political rights,

participation in social and economic life, cultural and literary production, and recent secular and Islamist women's movements. Credit Hours: 3

HIST490 - Special Readings in History Supervised readings for students with sufficient background. Registration by special permission only. Credit Hours: 1-4

HIST491 - Historiography Writings of historians from Herodotus to the present. Credit Hours: 3

HIST493 - Topics in History Topics vary with instructor. May be repeated for a maximum of six semester hours provided registrations cover different topics. Topics announced in advance. Credit Hours: 1-6

HIST496A - Internship in History Supervised field work in public or private agencies or operation where history majors are frequently employed, such as archives and libraries, government offices, communications media, historic sites, and museums. Only three hours may be applied to the major and six hours toward the M.A. degree. Special approval needed from the instructor. Credit Hours: 1-9

HIST496B - Internship in Local History (Same as ARC 434) Field experience in research and preservation related to regionally and nationally recognized historic sites in southern Illinois. Special approval needed from the instructor. Credit Hours: 1-9

HIST497 - Historical Museums, Sites, Restorations and Archives The development of museums from antiquity to the present, with emphasis on the United States. Additional topics include historical sites such as battlefields, historic buildings, restorations, monuments and archives. Also examines the purposes and functions of the museum and the tasks of professionals employed in museums or interpretative centers. Given in cooperation with the University Museum. Credit Hours: 3

HIST498 - Oral History, Storytelling and Media (Same as RTD 455) This course will develop an appreciation of the field of oral history, methodological concerns, and applications. Students will learn about the oral history process, including interview preparation and research, interview technique, the nature and character of evidence, transcribing, and legal and ethical concerns. Restricted to 3rd Year or 4th Year standing. Credit Hours: 3

HIST500 - The Historian's Craft Examination of historical methodology and recent trends in historiography. How historians conduct research and convey the results of it. Special treatment of selected topics of historiography. Required of M.A. degree students. Ph.D. degree students should consult graduate advisers. Credit Hours: 3

HIST501 - Recent Historiography Trends in historical writing and historical interpretation in the 20th Century. Required of M.A. degree students. Ph.D. degree students should consult graduate advisers. Credit Hours: 4

HIST522 - Colloquium in European History Group reading and discussion about major periods, subregions and themes in European history. May be repeated as instructors and topics vary. Credit Hours: 4

HIST523 - Research Seminar in European History Research and writing on selected topics in European history. Students will prepare a major paper. May be repeated as topics and instructors vary. Credit Hours: 4-20

HIST551 - Colloquium in Middle East History Group reading and discussion about major periods, subregions, and themes in the history of the Middle East and the Islamic world. May be repeated as topics vary. Credit Hours: 4

HIST552 - Research Seminar in Middle East History Research and writing on selected topics in the history of the Middle East and the Islamic world. Students will prepare a major paper. May be repeated as topics vary. Credit Hours: 4

HIST554 - Colloquium in United States History Group reading and discussion about major periods, subregions and themes in United States history. May be repeated as instructors and topics vary. Credit Hours: 4

HIST555 - Research Seminar in United States History Research and writing on selected topics in United States history. Students will prepare a major paper. May be repeated as topics and instructors vary. Credit Hours: 4-20

HIST570 - Research Seminar in Latin American History Research and writing on selected topics in Latin American history. Students will prepare a major paper. May be repeated as topics vary. Credit Hours: 4-12

HIST571 - Colloquium in Latin American History Group reading and discussion about major periods, subregions and themes in Latin American history. May be repeated as instructors and topics vary. Credit Hours: 4

HIST580 - Research Seminar in Asian History Research and writing on selected topics in Asian history. Students will prepare a major paper. May be repeated as topics vary. Credit Hours: 4-12

HIST581 - Colloquium in Asian History Group reading and discussion about major periods, subregions and themes in Asian history. May be repeated as instructors and topics vary. Credit Hours: 4

HIST582 - Colloquium in World History Group reading and discussion about major periods, subregions and themes in world history. May be repeated as instructors and topics vary. Credit Hours: 4

HIST583 - Research Seminar in World History Research and writing selected topics in World History. Students will prepare a major paper. May be repeated as topics vary. Credit Hours: 4-12

HIST584 - Colloquium in Comparative History Group reading and discussion relating to cross cultural or other comparative approaches in history. May be repeated as instructors and topics vary. Credit Hours: 4

HIST585 - Research Seminar in Comparative History Research on selected topics employing cross-cultural or other comparative approaches. Students will prepare a major paper. May be repeated as topics vary. Credit Hours: 4-8

HIST586 - Colloquium in African History Group reading and discussion about major periods, subregions and themes in African history. May be repeated as instructors and topics vary. Credit Hours: 4

HIST587 - Research Seminar in African History Research and writing on selected topics in African history. Students will prepare a major paper. May be repeated as topics vary. Credit Hours: 4

HIST590 - Readings in History Individual readings. Registration by special permission only. Student must obtain the consent of the faculty member involved. M.A. degree students are limited to a maximum of 4 hours toward the 30-hour requirement. Graded S/U only. Registration by special permission only. Credit Hours: 1-3

HIST596 - Tutorial in History Research and writing in history in close consultation with an instructor to produce a major paper on a selected topic. This course may count toward graduation as a seminar and the paper will be placed on file in the Department of History. Students may take this course only once at the M.A. level and once at the Ph.D. level. Special approval needed from the director of graduate studies. Credit Hours: 3

HIST597 - Practicum in Teaching College-Level History Students will learn how to lead discussion sections and/or to teach independent courses at the college level. M.A. or Ph.D. students assigned for the first time as a discussion leader must take this course. The course also is required for Ph.D. students who are teaching their own courses for the first time. Graded S/U only. Restricted to graduate students in history. Special approval needed from the director of graduate studies. Credit Hours: 1-3

HIST598 - Graduate Internship in History Supervised field work in occupationally related fields in public history, teaching, university publishing, historical editing. Programs of field work will be designated by students in consultation with their advisory committees. Students at the Ph.D. level can take as many as 9 hours in the course of their studies. Graded S/U or DEF. Credit Hours: 1-9

HIST599 - Thesis Minimum of three hours to be counted toward a Master's degree. Credit Hours: 1-6

HIST600 - Dissertation Credit Hours: 1-16

HIST601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

HIST699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

History and Historical Studies Faculty

Bean, Jonathan J., Professor, Ph.D., Ohio State University, 1994; 1995. U.S. economic and business.

Benti, Getahun, Professor, Ph.D., Michigan State University, 2000; 2001. Modern Africa, urbanization-migration.

Najar, Jose, Assistant Professor, Ph.D., Indiana University, 2012; 2014. Latin America, Brazil.

Sramek, Joseph, Associate Professor, Ph.D., CUNY Graduate Center, 2007; 2007. Late modern Europe, imperial England, gender and sexuality.

Weeks, Theodore R., Professor, Ph.D., University of California, Berkeley, 1992; 1993. Russia/USSR, East Central Europe: cultural and political, nationalism.

Whaley, Gray, Associate Professor, Ph.D., University of Oregon, 2002; 2006.

Yilmaz, Hale, Associate Professor, Ph.D., University of Utah, 2006; 2006. Islamic, Middle East, modern Turkey.

SIU Edwardsville Cooperative Ph.D. Faculty

Alexander, Erik B., Assistant Professor, Ph.D., University of Virginia, 2011. 19th century U.S., Civil War and reconstruction.

Cheeseboro, Anthony, Associate Professor, Ph.D., Michigan State University, 1993. History of development, agriculture, and slavery.

Frick, Carole C., Professor, and Chair, Ph.D., UCLA, 1995. Renaissance/reformation and early modern history.

Harris, Jessica, Associate Professor, Ph.D., Cornell, 2011. African American history, 20th century U.S.

Hinz, Christienne L., Associate Professor, Ph.D., Ohio State University, 2001. Japanese history, business history, world history, women's history.

Jack, Bryan, Associate Professor, Ph.D., St. Louis University, 2004. African American history, 19th century U.S.

Jordan, Thomas, Associate Professor, Ph.D., University of Illinois, Urbana-Champaign, 1999; 2004. History of Brazil, Latin America, social history.

Manuel, Jeffrey, Associate Professor, Ph.D., University of Minnesota. United States, Public history, urban history, digital media.

McClinton, Rowena, Professor, Ph.D., University of Kentucky, 1996. Native American history, antebellum south and United States history since 1865.

Miller, Jennifer, Associate Professor, Ph.D., Rutgers University, 2008. Germany.

Milsk Fowler, Laura, Associate Professor, Ph.D., Loyola University, Chicago, 2003. Museum studies, Illinois history, urban history.

Paulett, Robert, Associate Professor, Ph.D., College of William & Mary, 2007. Colonial America.

Ruckh, Eric, Associate Professor, Ph.D., University of California, Irvine, 1997. Modern Europe intellectual history.

Stacy, Jason, Professor, Loyola University Chicago, 2006. Antebellum U.S., social science pedagogy.

Tamari, Stephen E., Associate Professor, Ph.D., Georgetown University, 1998. Middle East history, Ottoman Empire, Arab world, Arab-Israeli conflict.

Thomason, Allison K., Professor, Ph.D., Columbia University, 1999. Ancient near eastern and Greco-Roman history.

Vongsathron, Kathleen, Assistant Professor, Oxford, 2013. African history, history of medicine.

Emeriti Faculty

Allen, Howard W., Professor, Emeritus, Ph.D., University of Washington, 1959; 1962.

Allen, James Smith, Professor, Emeritus, Ph.D., Tufts University, 1979; 1991.

Argersinger, Jo Ann E., Professor, Emeritus, Ph.D., George Washington University, 1980; 1998.

Argersinger, Peter H., Professor, Emeritus, Ph.D., University of Wisconsin, Madison, 1970; 1998.

Batinski, Michael C., Professor, Emeritus, Ph.D., Northwestern University, 1969; 1968.

Carr, Kay J., Associate Professor, Emeritus, Ph.D., University of Chicago, 1987; 1989.

Dotson, John E., Professor, Emeritus, Ph.D., Johns Hopkins University, 1969; 1970.

Fanning, Charles F., Professor, Emeritus, Ph.D., Pennsylvania, 1972; 1993.

Gold, Robert L., Professor, Emeritus, Ph.D., University of Iowa, 1964; 1965.

Haller, John S. Jr., Professor, Emeritus, Ph.D., University of Maryland, 1968; 1990.

Lieberman, Robbie, Professor, Emeritus, Ph.D., University of Michigan, 1984; 1991.

O'Day, Edward J., Associate Professor, Emeritus, A.M., Indiana University, 1956; 1962.

Stocking, Rachel, Associate Professor, Emeritus, Ph.D., Stanford University, 1994; 1994.

Werlich, David P., Professor, Emeritus, Ph.D., University of Minnesota, 1968; 1968.

Wilson, David L., Professor, Emeritus, Ph.D., University of Tennessee, 1974; 1974.

Human Sciences

The Master of Science in Human Sciences in the College of Health and Human Sciences offers a broad, interdisciplinary program, preparing students for careers in exercise, nutrition, recreation, and sport professions. The program leads to a Master of Science in Human Sciences degree with three concentrations in Exercise Science, Nutrition and Dietetics*, and Sport and Recreation Administration. In addition, the fourth concentration is an Interdisciplinary concentration that allows students to create a program of study specific to their career goals.

Students must complete a minimum of 30 credit hours including a research core, a professional development course, and concentration-specific courses. The research core requires 3 credit hours of research methods, 3-4 credit hours of statistics or analytics, and 3-4 credit hours of a culminating project. For the culminating projects students will choose from one of four options: thesis, research paper, professional development project, or internship. If the thesis or research project option is selected, submission of the completed paper must comply with the rules of the Graduate School. Additional requirements for the degree are specific to the respective concentrations of Exercise Science, Nutrition and Dietetics, Sport and Recreation Administration, and Interdisciplinary. All students must maintain a minimum 3.0 (4.0 point scale) grade point average and earn a C or better in all graduate-level classes to be eligible to graduate.

All students must submit a Program of Study with a Graduate Faculty member in the first semester of graduate school. All Program of Study forms will be approved by the Graduate Program Committee prior to the beginning of the second semester of graduate school.

Master of Science (M.S.) in Human Sciences

Required Courses

Human Sciences Core (9 - 13 credit hours)

- KIN 500: Techniques of Research (3 CH)
- PH 513: Public Health Analytics I (3 CH), or QUAN 506: Inferential Statistics (4 CH)

Professional Development

- SHUS 503: Human Sciences Seminar (1 CH)

Select One Of The Following Concentrations:

Exercise Science Concentration (12-15 credit hours of KIN graduate courses; an additional 2-6 credit hours of approved courses are also required)

Interdisciplinary Concentration (17-20 credit hours of human sciences approved course work)

***Nutrition and Dietetics Concentration** (17-20 credit hours)

1. Nutrition & Dietetics: 12 credit hours from approved FN courses and additional 5-8 elective credit hours are also required.
2. Nutrition & Dietetics with Dietetic Internship*: 12 credit hours from approved FN courses; 15 hours supervised practice (FN 580A, FN 580B, FN 580C).

To be eligible for admission into the Nutrition & Dietetics with Dietetic Internship program, students need a Verification Statement for having completed a Didactic Program in Dietetics issued by an ACEND®-accredited program director. Admission to The Dietetic Internship program is separate from admission to the SIUC Graduate School, please see the Dietetic Internship Coordinator for information on admission to this program. The Master of Science Degree in Human Sciences with a concentration in Nutrition and Dietetics with The Dietetic Internship Program is designed to provide advanced study in nutrition and dietetics and provide a minimum of 1000 hours of supervised practice (dietetic internship). Students who successfully complete the M.S. in Human Sciences' coursework and a minimum of 1000 hours of the accredited dietetic internship must be verified by the program director to then be eligible to take the registration examination for dietitians. The Accreditation Council for Education in Nutrition and Dietetics (ACEND®) sets Standards of Education for entry-level dietetics education. ACEND® is the only accrediting agency for dietetics education programs recognized by the United States Department of Education (USDE). Continued recognition by the USDE since 1974 affirms that ACEND® is a reliable authority as to the quality of dietetics education program that it accredits. Programs accredited by ACEND® meet the education requirements established by Commission on Dietetic Registration (CDR). The Dietetic Internship program at SIUC has been granted accreditation through 2028 by ACEND®.

Sport and Recreation Administration Concentration (17-20 credit hours of KIN, REC, or other approved courses)

Certificate in Therapeutic Recreation/Recreation Therapy

Enhance your knowledge and skills in the dynamic field of Recreation Therapy (Therapeutic Recreation).

Overview/Program Highlights

The Therapeutic Recreation/Recreation Therapy Graduate (Post-Baccalaureate) Certificate prepares students to help maintain and improve the quality of life and general health of individuals and society by creating, discovering, and disseminating knowledge through service in the profession. The certificate meets the majority of the academic requirements for National Certification as a Recreation Therapist. Students seeking National Certification should meet with recreation professions faculty to verify specific coursework required.

Academic Requirements

Completion of the Graduate Certificate in Therapeutic Recreation/Recreation Therapy will require 15-18 credit hours of coursework selected from the courses listed below (at least 50% of certificate hours must be earned in courses numbered 500 or above). Students may select course options that meet the academic requirements aligned for preparation of NCTRC certification testing or opt for an individualized plan that aligns with their career goals.

- REC 404: Foundations of Recreational Therapy (3 CH)
- REC 405: RT Implementation: Cognitive, Intellectual, and Developmental Disabilities (3 CH)
- REC 406: RT Implementation: Physical Disorders & Chronic Illness (3 CH)
- REC 407: RT Implementation: Psychiatric & Behavioral (3 CH)
- REC 460: Administration of Recreational Therapy Services (3 CH)
- REC 461: Assessment and Documentation for Recreational Therapy (3 CH)
- REC 524: Recreational Therapy Foundations (3 CH)
- REC 525: Recreation Therapy Facilitation Techniques (3 CH)
- REC 526: Recreation Therapy for Physical Disabilities (3 CH)
- REC 580: Readings in Leisure and Recreation (1-3 CH)
- REC 596: Internship in Recreation (3 CH)

Admissions Requirements

The Graduate Certificate in Therapeutic Recreation/Recreation Therapy is open to post-bachelor level students who meet the criteria for admission to the SIUC Graduate School. Students should have a minimum undergraduate GPA of 2.75 (A=4.00) on the entire last undergraduate GPA earned at the time of application and complete a program application.

Accelerated Master's Program

The accelerated M.S. in Human Sciences allows motivated and high achieving students to complete a program leading to completion of an undergraduate degree and Master of Science degree in Human Sciences in five years in a specific concentration area (e.g., Exercise Science, Nutrition and Dietetics, Sport & Recreation Administration). Nine credit hours are double counted toward an undergraduate and a master’s degree. Students will apply for the accelerated program in their junior year.

Human Sciences Courses

FN515 - Energy and Protein Utilization (Same as ANS 515) Energy and protein utilization including digestion, absorption, and metabolism as related to mammalian physiology. Prerequisite: course in organic chemistry. Credit Hours: 3

FN516 - Minerals and Vitamins (Same as ANS 516) Basic and applied principles of mineral and vitamin metabolism. Emphasis on metabolic functions, reaction mechanisms and interrelationships. Prerequisite: course in organic chemistry. Credit Hours: 3

FN530 - Advanced Nutritional Assessment and Education Community assessment methods, specifications or particular tools used and how these tools can be applied to particular conditions of concern in community nutrition. The methods of education for individuals and populations using dietary, biochemical, anthropometrics and physical assessment data will be taught. Restricted to major or consent of instructor. Credit Hours: 3

FN540 - Community and Public Health Nutrition This course provides a comprehensive introduction to community and public health nutrition focusing on the health of communities and nations, the most significant public health nutrition programs, nutrition surveillance systems and interventions, practices and processes of local and global food markets, global food systems and legislative and regulatory policies.

The course will be structured upon the use of a socioecological framework, examining multiple levels of influence on dietary intake, food choices and related health incomes. Credit Hours: 3

FN574 - Advanced Medical Nutrition Therapy II This is the second in a 2-course sequence of the in-depth study of the application of nutrition to the management of disease states with emphasis on current treatment and complex metabolic abnormalities. Prerequisite: SHUS 520 with a grade of B- or better. Credit Hours: 3

FN580A - Nutrition Practicum in the Community-Clinical Rotation Designed to provide 480-560 hours of practicum experience in clinical nutrition/medical nutrition therapy and to fulfill competencies set by the Accreditation Council for Education in Nutrition and Dietetics (ACEND?). This course is intended for students completing the Master of Science in Human Sciences in the Nutrition and Dietetics with Dietetic Internship concentration. Restricted to major or consent of instructor. Credit Hours: 5

FN580B - Nutrition Practicum in the Community-Management Rotation Designed to provide approximately 250 hours of practicum experience in food service management and to fulfill competencies set by the Accreditation Council for Education in Nutrition and Dietetics (ACEND?). This course is intended for students completing the Master of Science in Human Sciences in the Nutrition and Dietetics with Dietetic Internship concentration. Restricted to major or consent of instructor. Credit Hours: 5

FN580C - Nutrition Practicum in the Community-Community Rotation Designed to provide 400-480 hours of practicum experience in community nutrition and to fulfill competencies set by the Accreditation Council for Education in Nutrition and Dietetics (ACEND?). This course is intended for students completing the Master of Science in Human Sciences in the Nutrition and Dietetics with Dietetic Internship concentration. Restricted to major or consent of instructor. Credit Hours: 5

FN581 - Nutrition Seminar This course is designed to discuss current topics, literature, and research in nutrition, medical nutrition therapy, nutrition programs, and other related topics. Nutrition Seminar is a communication-based course that focuses on enhancing professional oral presentation skills. Credit Hours: 1

FN590 - Readings in Food and Nutrition Individual readings in food and nutrition under graduate faculty guidance. Special approval needed from the instructor. Credit Hours: 1-3

FN591 - Nutrition Experiential Learning This course will provide nutrition experiential learning by providing hands-on and simulated experiences. This course will provide the students the ability to practice approaches and interventions as a part of interdisciplinary care to create integrated care plans. Restricted to Food and Nutrition majors or consent of instructor. Credit Hours: 1-3

FN592 - Global Research in Agriculture Research interest in animals unique to certain regions of the world is a growing field to graduate students interested in world sustainable agricultural practices. This class is designed for students interested in taking research based information and skills from Southern Illinois University and applying it to projects with animals native to certain regions of the world to improve productivity and sustainability. This course provides graduate students interested in global and sustainable research the opportunity to conduct their research and training on regional animals not traditionally found in North America (eg. camels, water buffalo, kangaroo,... etc). Credit Hours: 1-3

FN593 - Individual Research Investigation of a problem in food and nutrition under the supervision of an approved graduate faculty member. Graded S/U only. Credit Hours: 1-3

FN599 - Thesis Credit is given for a Master's thesis when it is accepted and approved by the thesis committee. Graded S/U only. Credit Hours: 1-6

FN601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

KIN400 - Psychology of Injury This course will explore the theory and research related to the psychological aspects of injury and injury rehabilitation. The focus is on theory and application. Case

studies will be used to explore assessment and intervention approaches relevant for different levels of athletic training, sports medicine and sport psychology professionals. Credit Hours: 3

KIN402 - Exercise Programming for Cancer Survivors and Caregivers The primary goal of this course is to give both graduate and undergraduate students the necessary tools to successfully prescribe and administer safe and effective exercise programs and assessments for cancer survivors and caregivers as a staff member for the Strong Survivors Exercise and Nutrition Program for Cancer Survivors and Caregivers. The course will also give students a baseline of knowledge that will help prepare them to sit for cancer exercise trainer certification exams. Special approval needed from the instructor. Credit Hours: 2

KIN408 - Advanced Exercise Prescription Advanced exercise prescription provides an analysis of physical fitness as it relates to the total well-being of the individual. The course contains specific units on fitness parameters, hypokinetic disease, stress, current levels of physical fitness, but emphasizes the creation of training programs. The course contains exercise prescription for healthy, at risk, overweight and chronically ill populations. Prerequisite: KIN 382 and KIN 320. Credit Hours: 3

KIN416 - Introduction to Team Building The purpose of this course is to acquaint students, teachers, coaches and administrators with the "team building model". The course will focus on icebreakers, trust and communication initiatives, problem solving skills and processing. The goal of this introductory course is for the participants to become familiar and acquire team building skills, to develop a workable team building model and initiate the plan in the classroom or workplace. Credit Hours: 3

KIN420 - Advanced Exercise Physiology The general physiological effects of motor activity upon the structure and function of body organs; specific effect of exercise on the muscular system. Prerequisite: PHSL 201 and KIN 320. Credit Hours: 3

KIN421 - Principles of Skeletal Muscle Action The neural, physiological and mechanical basis of skeletal muscle action and plasticity in relation to the expression of strength and power. Prerequisite: PHSL 201 and KIN 320. Credit Hours: 3

KIN428 - Physical Activity and Exercise for Older Adults (Same as GRON 428) This course is designed to introduce the student to physical changes of the older person with reference to activity and exercise and to teach the student about rational activity and exercise programs for the older person with consideration of the care and prevention of typical injuries that may occur with such programs. Credit Hours: 3

KIN463 - Contemporary Issues in Sport Administration This course is designed to explore current topics, trends, and best practices in the field of sport administration. Through this course, students will have the opportunity to connect cutting-edge sport administration concepts to real-world scenarios, gaining a deeper understanding of how current sport administration practices can be applied to contemporary sport business issues. Prerequisites: KIN 200, KIN 260, KIN 261 with grades of C- or better. Credit Hours: 3

KIN464 - Legal and Ethical Aspects of Sport This course provides an extensive overview of legal and ethical issues in sport. This course introduces the different fields of law and issues (Federal Amendment, torts, contracts, labor relations) as they relate to sport. In addition, this course examines the basic philosophical issues concerning ethics and moral reasoning and how these issues relate to sport. Furthermore, this course is designed to help future sport administrators develop an ethical decision-making process. Topics discussed include the concepts of morality, personal philosophy regarding social responsibility, theories of ethics, professional code of ethics, etc. Credit Hours: 3

KIN493A - Individual Research-Dance The selection, investigation, and writing of a research topic under supervision of an instructor. Written report required. Special approval needed from the instructor. Credit Hours: 2-4

KIN493B - Individual Research-Kinesiology The selection, investigation, and writing of a research topic under supervision of an instructor. Written report required. Special approval needed from the instructor. Credit Hours: 2-4

KIN493C - Individual Research-Measurement The selection, investigation, and writing of a research topic under supervision of an instructor. Written report required. Special approval needed from the instructor. Credit Hours: 2-4

KIN493D - Individual Research-Motor Development The selection, investigation, and writing of a research topic under supervision of an instructor. Written report required. Special approval needed from the instructor. Credit Hours: 2-4

KIN493E - Individual Research-Physiology of Exercise The selection, investigation, and writing of a research topic under supervision of an instructor. Written report required. Special approval needed from the instructor. Credit Hours: 2-4

KIN493F - Individual Research-History and Philosophy The selection, investigation, and writing of a research topic under supervision of an instructor. Written report required. Special approval needed from the instructor. Credit Hours: 2-4

KIN493G - Individual Research-Motor Learning The selection, investigation, and writing of a research topic under supervision of an instructor. Written report required. Special approval needed from the instructor. Credit Hours: 2-4

KIN493H - Individual Research-Psycho-social Aspects The selection, investigation, and writing of a research topic under supervision of an instructor. Written report required. Special approval needed from the instructor. Credit Hours: 2-4

KIN493I - Individual Research-Sport Management The selection, investigation, and writing of a research topic under supervision of an instructor. Written report required. Special approval needed from the instructor. Credit Hours: 2-4

KIN494A - Practicum in Kinesiology Supervised practical experience at the appropriate level in selected kinesiology activities in conjunction with class work. Work may be in the complete administration of a tournament, field testing, individual or group work with special populations, administration of athletics or planning kinesiology facilities. Special approval needed from the instructor. Credit Hours: 1

KIN494B - Practicum in Kinesiology Supervised practical experience at the appropriate level in selected kinesiology activities in conjunction with class work. Work may be in the complete administration of a tournament, field testing, individual or group work with special populations, administration of athletics or planning kinesiology facilities. Special approval needed from the instructor. Credit Hours: 1

KIN500 - Techniques of Research Study of research methods and critical analysis of research literature specifically applied to the areas of sport exercise and motor performance. Special approval needed from the instructor. Credit Hours: 3

KIN501 - Foundations of Sport and Fitness Management An introduction to broad concepts and issues regarding the management of health clubs, corporate fitness programs; and various components of amateur and professional sport organizations. Students will investigate foundational aspects of sport and fitness management, examine requirements for operating successful programs, and gain insight into various career opportunities. Credit Hours: 3

KIN502 - Methods of Interview Research This course will familiarize students with the theory and techniques of interview research and demonstrate the application of this research method to practice. Students will engage in a group interview project focusing on a selected issue and an individual project utilizing interview research in their specialty area. No prerequisites required. Credit Hours: 3

KIN503 - Seminar in Kinesiology Making a systematic analysis of problems and issues encountered in the conduct of kinesiology. Selection of a problem or issue that is a concern to Kinesiology and suggestion of solutions. Credit Hours: 2

KIN504 - Psychological Aspects of Sport This course presents the theoretical and empirical foundations of sport psychology. Operating from a conceptual rather than an applied framework, this class develops an understanding of social psychological phenomena and processes related to

participation in sport and physical activity (e.g., personality, anxiety, arousal, achievement motivation, social facilitation, aggression, pro-social behavior, group dynamics). Credit Hours: 3

KIN505 - Topical Seminar in Kinesiology Students may concentrate on different topics each semester dependent upon both the interests of the students and the expertise of the graduate faculty. Special approval needed from the instructor. Credit Hours: 3

KIN506 - Medical Aspects of Exercise This course is a presentation/discussion style course in which students will examine and discuss the principles of exercise testing and prescription for individuals from a wide variety of disease/disability backgrounds. Discussion will include issues of caution/contradiction for various forms of exercise, the role of exercise as a therapeutic modality and exercise as a means of preventive medicine. Prerequisite: KIN 420. Credit Hours: 3

KIN507 - Organizational Behavior in Sport This course provides students with an examination of fundamental theories and practices related to behavior of individual and groups in sport organizations. The focus will be on the practical application of the theories to the actions of sport and physical activity managers. Special emphasis will be on: ethics in organizations, leadership, managerial decision making, motivation, organizational commitment, and managing a diverse work force. Credit Hours: 3

KIN508 - Administration of Athletics Designed to present a broad view of the role, structure and governance of interscholastic and intercollegiate athletics programs. This course will enable students to develop and comprehend current knowledge, theories and practices in athletic management which operate within a framework of state and national governance policies and rules. Credit Hours: 3

KIN510 - Motor Development In-depth study of the development of gross motor skills from infancy through adolescence, the biological and environmental variables that affect motor development, and individual differences in attaining motor proficiency. In addition, selected current issues in motor development will be examined. No prerequisite. Credit Hours: 3

KIN511 - Biomechanical Analysis of Human Movement Biomechanical concepts will be reviewed, as well as discussion concerning tissue mechanics, and the integration of the neural control of movement. Importance will be placed on application of mechanical principles when analyzing basic human movements. Includes completion of a topical research paper. Prerequisite: KIN 321 or equivalent. Credit Hours: 3

KIN512 - Biomechanics of Human Motion Methods of data collecting and analyzing the biomechanics of human motion under normal and pathological conditions are covered. Students complete a biomechanical study for a one segment motion. Credit Hours: 3

KIN513 - Social Aspects of Sport and Physical Activity This course presents the theoretical and empirical foundations of sport sociology. It is a survey course designed to introduce you to a variety of topics concerned with sociological aspects of sport and physical activity. A research-based approach is used to explore the relationship of sport to various social institutions, as well as the role of social processes in sport and physical activity contexts. Credit Hours: 3

KIN514 - Research and Practice in Applied Sport Psychology This course examines current research and practice in applied sport psychology. Emphasis will be placed on moving from theory into practice on sport-specific individual differences, motivational approaches, and interventions. Credit Hours: 3

KIN515 - Body Composition and Human Physical Performance Physical dimensions of the human body as they influence motor performance and are modified by protracted physical exercise. Prerequisite: KIN 420 or equivalent. Credit Hours: 3

KIN517 - Athletic and Kinesiology Facilities Design, Construction, and Maintenance This course examines the principles and states of planning to manage an Athletic and Kinesiology facility. Basic principles of design, construction, maintenance and how to manage facilities based upon program characteristics. Credit Hours: 3

KIN520 - Metabolic Analysis of Human Activity Metabolic principles pertinent to human physical performance with emphasis on sport, exercise and occupational activity analysis. A detailed study of oxygen utilization, oxygen debt, mechanisms of oxygen transport as they relate to physiological

homeostasis in localized and total body motor activity. Emphasis on the laboratory study of aerobic and anaerobic performance. Prerequisite: KIN 420 or equivalent. Credit Hours: 3

KIN525 - Motor Learning-Theories of Research This course will provide a theory and research foundation for understanding motor skill acquisition and factors that influence the learning of motor skills. This foundation is important to develop research that will increase understanding of motor skill learning, and to design effective practice conditions that enhance learning. Various topics related to the cognitive and motor processes influencing motor skill learning will be discussed. Credit Hours: 3

KIN530 - Exercise Psychology This course explores the theory and research related to the psychological and social aspects of exercise and how exercise may impact the individual's psychological health and behavior. The focus is on theory and application. It covers theories and models of exercise behavior, psychosocial outcomes of exercise, social factors in exercise behavior, and physical activity interventions. Credit Hours: 3

KIN540 - Sport Promotions This course provides the theoretical foundation of promotions specific to the sport industry. It will include professional applications to profit and non-profit sport organizations. Credit Hours: 3

KIN555 - Internship in Sport Management The internship is a culminating experience directly related to the student's intended employment or area of interest. It will, therefore, normally be taken after the predominance of course work is completed. The internship may be completed in any appropriate setting as judged by the faculty associated with the area of sport management. All conditions of placement, conduct and evaluation of the internship will be under the jurisdiction of the appropriate faculty. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-6

KIN560 - Gender and Sport: Sociological and Psychological Perspectives (Same as WGSS 560) This course explores psychological and sociological dimensions underlying the concept of gender and critically examines how gender relates to sport and physical activity. Students will be introduced to non-traditional as well as traditional research that addresses the issue of gender in various physical activity contexts. Credit Hours: 3

KIN580 - Financial Aspects of Sport The primary goal of this course is to provide students with a basic knowledge and understanding of the principles, processes, and strategies related to the financial aspects of sport organizations, which consist of professional sport franchises, college athletic departments, community recreation programs, etc. The focus will be on the many conventional and innovative revenue acquisition methods applicable to sport oriented organizations. In addition to the basic accounting concepts and budgeting techniques, this course will address current topics in the field of sport financing, including: tax support, municipal and corporate bonds, economic impact analysis, fundraising, licensing, ticket sales, concessions, and corporate sponsorships. Credit Hours: 3

KIN590 - Readings in Kinesiology Supervised readings in selected subjects. Special approval needed from the instructor. Credit Hours: 1-4

KIN592 - Research in Kinesiology Plan, conduct, and report assigned research studies. Masters students may take up to three credit hours. Doctoral students must enroll for a minimum of six credit hours. Graded S/U only. Prerequisite: KIN 500 or equivalent. Special approval needed from the instructor. Credit Hours: 2-8

KIN599 - Thesis Graded S/U. Prerequisite: KIN 500 or equivalent. Credit Hours: 1-6

KIN601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. he student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

KIN699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

PH402 - Death Education Designed to prepare educators to conduct learning experiences about death and dying in a variety of school, college, medical care, and community settings. Stress will be placed

on developing brief, functional curricula and usable, imaginative, teaching-learning materials and on evaluating resource materials for use in educating at various levels of maturity. Credit Hours: 3

PH403 - Health Advocate Training Provides students with knowledge and skills in the areas of peer health education, health advocacy, and referral. Instruction includes health care information from a wellness point of view. Prepares students for practicum in health advocate program. Credit will not count toward a master's degree in health education. Special approval needed from the instructor. Credit Hours: 3

PH407 - Substance Use Prevention Designed to prepare educators to plan, implement and evaluate substance use prevention programs. Emphasizes incidence/prevalence, etiology, risk factors, short- and long-term effects of substance use. Key elements of effective prevention programs are reviewed. Meets requirements of Illinois state law concerning drug education. Credit Hours: 3

PH410 - Human Sexuality (Same as WGSS 411) Provides detailed information on dimensions of sexuality; characteristics of healthy sexuality; anatomy and physiology; gender roles; relationships; sexually transmitted infections/diseases; contraceptive issues and concerns; sexual victimizations; and sexuality through the life cycle. Credit Hours: 3

PH411 - Emergency Medical Technician in the Wilderness Placement of trained emergency medical technicians into a wilderness situation and having them adopt previously learned skills and newly developed skills. Prerequisite: PH 334 or PH 434. Credit Hours: 6

PH412S - Driving Task Analysis: An Introduction An introductory course that deals with the highway transportation system, traffic problems, the driving task, perception and implementation of the driver education classroom program. Observation of a teaching environment is included. A valid driver's license is required. Credit Hours: 3

PH413S - Injury Prevention and Safety Introduces the concepts and topics of injury prevention and safety. Course areas include: school, farm, consumer, fire, home, traffic, occupational, recreational, and disaster. Credit Hours: 3

PH414 - Sexuality Education Focuses on knowledge/skills needed to address complex issues of sexuality education. Discussion will include challenges/resources for all health education settings and related disciplines. Purposes/goals, the nature of sexuality education teachers/learners, and "best practice" will be covered. Emphasis on developing competencies essential for professional practice. Credit Hours: 3

PH415 - Health Counseling This course teaches basic communication skills and intervention strategies for helping people make positive health related lifestyle changes. It is not a course in therapeutic counseling; it focuses on helping average people to function in the healthiest way possible. Credit Hours: 3

PH430 - Health and Injury Control in a Work Setting Assesses the health and injury control programs present in a work setting. Emphasis given to employee programs in health, wellness, and injury control that are effective. Field trips to work sites are included. Credit Hours: 3

PH434 - Advanced First Aid and Emergency Care Meets the needs of those in positions where advanced first aid and emergency care is required. A nationally recognized First Aid and CPR "First Responder" certification may be obtained with successful completion of the course. Purchase of first aid kits and protective equipment are necessary. Prerequisite: PH 334 or consent of instructor. Students will be required to pay a laboratory fee of $20. Credit Hours: 4

PH435 - Work Site Safety and Health Evaluation This course covers methods of inspecting and evaluating health and safety hazards at a work site including analysis of specific job assignments. It also introduces the student to injury and incident investigation techniques. The course will include hands-on work site evaluation. Credit Hours: 2

PH440 - Health Issues in Aging (Same as GRON 440) Course content includes demographic trends; physiological changes associated with aging; health care and consumer challenges; cultural differences;

psychological effects of aging; housing; long-term care; retirement; care giving; and formal, informal, and community-based support systems. Credit Hours: 3

PH441 - Women's Health The course deals with a wide variety of health concerns of American women as consumers in the current health marketplace. Major categories of topics include health products, health services, and sources of health information of particular interest to women. Emphasis is also placed on current health related issues of women. The major purpose of the course is to provide a basis for informed decision-making by the female consumer. Credit Hours: 3

PH442S - Developing Vehicle Operational Skills: Driver Education Laboratory Experiences Learning activities will focus on preparing the prospective driver educator to conduct activities that develop operational skills for a novice driver. Emphasis is placed on laboratory organization and administration, maintaining a learning environment, developing laboratory instructional modules, and conducting learning experiences. Prerequisite: PH 412S. Credit Hours: 3

PH443S - Developing Classroom Skills: Driver Education Classroom Experience Learning activities will focus on preparing the prospective driver educator with the skills to teach in the driver education classroom with application to classroom organization, maintaining a safe learning environment, developing instructional modules, and conducting learning experiences. Prerequisite: PH 412S with a grade of C. Credit Hours: 3

PH445 - Advanced Driver Education Instructor Training Prepares prospective instructors of advanced driving techniques. Emphasis is placed upon safe driving practices, vehicle dynamics, emergency vehicle operation, in-car response to simulated driving emergencies, and instructional techniques. Special approval needed from the instructor. Credit Hours: 3

PH461 - Health Education Workshop A different focal theme each year; e.g., mood modifying substances, ecology, human sexuality, emotional and social health dimensions. Information, ideas, and concepts are translated into teaching-learning materials and approaches; continuing opportunity for interaction between prospective and experienced teachers. Credit Hours: 1-12

PH470S - Highway Safety as Related to Alcohol and Other Drugs Relationship between alcohol and other drugs and traffic accident causes. A review of education programs designed to minimize drug related accidents. Restricted to advanced standing or consent of instructor. Credit Hours: 3

PH471 - Public Health Instructional Strategies This course is designed for graduate students who are teaching assistants in Public Health. The purpose of the course is to enhance professional skills of those who are responsible for teaching health education, general education, and first aid. Credit Hours: 2

PH476 - Stress Management A study of the physiological, emotional and sociological stressors and their underlying mechanisms in states of disease and health. Particular emphasis is placed upon prevention and control of stress via self assessment techniques and proficiency in self control techniques such as biofeedback, autogenic training, meditation and progressive muscle relaxation. Credit Hours: 3

PH480S - Traffic and Driver Education Program Development Acquaints students with curriculum innovation, current philosophy, learning and teaching theories, and instructional designs. Students will develop learning packages and modules. Prerequisite: PH 443S or consent of instructor. Credit Hours: 3

PH484 - Preventing Violence in Educational Settings Designed to prepare educators, administrators, and other professionals to plan, implement, and evaluate violence prevention, conflict resolution, and crisis intervention programs in educational settings. Incidence/prevalence, etiology, and risk/protective factors related to youth violence will be examined. Current theories and models related to program planning and implementation will be applied to design coordinated, integrated school/community programs. Based on current research, key elements of effective curricula and other program components will be reviewed. Credit Hours: 3

PH490A - Field Experiences in Schools, Community Health Field observation, participation, and evaluation of current school or community health education or safety programs in agencies relevant to student interests. Prerequisite: all required health education courses. Special approval needed from the instructor. Credit Hours: 2-12

PH490B - Advanced Field Experience in School, Community Health or Injury Prevention Education Advanced field observation, participation and evaluation of current school or community health education or injury prevention programs in agencies relevant to student interests. Prerequisite: grade of B or better in PH 490A. Special approval needed from the instructor. Credit Hours: 2-6

PH491 - Health Teaching/Learning: School and Community Teaching and learning strategies at secondary school levels and in other community group settings. Opportunities to examine and observe a variety of educational strategies applicable to health education. Credit Hours: 3

PH496 - Industrial Hygiene Provides a background in the recognition, evaluation, and control of toxic materials and hazardous physical agents in the work environment. Special approval needed from the instructor. Credit Hours: 4

PH499 - Rx: Education in Health Care Settings Designed for members and potential members of the health care team to explore educational concepts and strategies applicable to a variety of health care settings. Includes rights and responsibilities of consumer and professional, determinants of health behavior, contrasting models of health care, communication skills, media and materials and planning, implementing and evaluating educational programs. Open to medical and dental personnel, nurses, health educators, dietitians, therapists, pharmacists, social workers, and related professionals. Credit Hours: 3

PH505 - Foundations of Public Health Knowledge This course provides an overview of the interdisciplinary field of public health. History and ongoing evolution of public health services and delivery systems in the U.S., essentials of public health practice, and federal, state, and local public health functions are considered. Emerging health problems, changing population dynamics, and global health context will be examined. Credit Hours: 3

PH506 - Communicating Public Health This course assists students in developing skills and identifying opportunities for communicating public health messages through the preparation of technical papers for public health, other health science-related, area-specific, and cross-disciplinary journals, as well as communicating other professional and lay publications. Additional skills relate to the development of press releases, letters to the editor, preparation of posters, development of oral presentations for diverse audiences, estimating readability of written materials, assessing health literacy, preparing pamphlets and other written materials, designing messages for distribution by mass media, including but not limited to social media and social marketing. Credit Hours: 3

PH507 - MPH Experiential Learning Seminar This course will introduce Master of Public Health (MPH) students to public health resource identification and utilization to understand and engage in public health fieldwork and service. MPH students will develop a professional portfolio to build upon through the tenure of the program. Credit Hours: 1

PH508 - Leadership in Public Health This course provides an overview of the core principles in Public Health Leadership. Major theories and concepts in leadership and methods for applying these to public health will be discussed. Credit Hours: 2

PH512 - Public Health Program Planning This course will present theories/models for health promotion program planning and implementation in community/public health settings. Steps to program planning, including: logic models, needs assessment, community organizing, evaluation/assessment, and social marketing will be addressed. Credit Hours: 3

PH513 - Public Health Analytics I An introduction to biostatistics; examination of theories of population projections; collection, organization, interpretation, summarization, and evaluation of data relative to public health happenings with emphasis on graphic presentation. Credit Hours: 3

PH514 - Public Health Analytics II The application of technology to engage communities and individuals in behavioral and environmental change processes. The course will focus on the use of technology to describe the magnitude of health problems and their sources; analyze risk factors; identify community strengths from which strategies may be defined and tools created to intervene, prevent problems, and promote health and well-being; and continuously evaluate, refine, and implement what works. Prerequisite: PH 513 with a grade of B or better or consent of instructor. Credit Hours: 3

PH515 - Contemporary Issues in Health-Related Fields This course is designed to expand the conceptual framework for health education research, practice, and professional development by examining contemporary issues in health and related fields. It includes reading, analyzing, interacting, and reflecting about selected critical issues and future concerns as they relate to the health education profession as well as individual, community, and societal health-related needs. Credit Hours: 3

PH520 - Special Topics/Independent Study An area of study to be determined by students in consultation with the health education faculty that goes beyond the current health education course offerings. 1-3 credits; may be repeated twice for maximum of 6 hours. Special approval needed from the instructor. Credit Hours: 1-3

PH525 - Applied Theoretical Foundations of Public Health Examines health-related motivation and behavior through the study of relevant psychological, sociological, and educational theory and research. Emphasis is on application of behavioral and behavior-change theories and constructs in designing effective health education and promotion programs. Credit Hours: 3

PH526 - Evidence-based Research and Evaluation in Public Health Introduction to research and evaluation. Includes survey and analyses of health testing and research/evaluation procedures, uses and limitations of knowledge and attitude tests, behavioral inventories, checklists, questionnaires, interviews, and other techniques. Credit Hours: 3

PH530S - Research in Traffic Safety A study of unique problems related to traffic safety and a review and evaluation of contemporary studies. Restricted to graduate standing or consent of instructor. Credit Hours: 3

PH532 - Public Health Administration: Principles and Practices This course is designed to provide a broad overview of key administrative issues in public health, including building and sustaining a public health workforce, disease control and prevention, emergency preparedness, legal issues, and financial considerations. Attention will be given to the application of management concepts and principles related to public health organizations at the national, state, and local levels. Credit Hours: 3

PH533B - Foundations of Public Health II This course will provide a broad overview of quantitative research in public health, including research designs, research questions, assumptions, limitations, data collection methods, sampling, instrument development, and data analysis and interpretation. Discussion of health-related theories/models and ethical considerations will be integrated throughout the course. Credit Hours: 4

PH536 - Professional Preparation in Public Health Considers national, state and local factors influencing professional preparation, accreditation and certification processes. Emphasis upon influences of official and non-official agencies. Historical perspective, the present status, and future directions of the profession. Credit Hours: 3

PH541 - Issues in Health Care Examination of current and continuing issues in the provision, administration, financing, and regulation of health care services. Prerequisite: PH 583 with grade of C or better or consent of instructor. Credit Hours: 3

PH550S - Current Developments in Traffic and Safety Education Current problems, trends and research studies in traffic and safety education are reviewed, critiqued and evaluated. Restricted to graduate standing or consent of instructor. Credit Hours: 3

PH555 - Research in Population Health Plan, conduct, and report on research pertaining to population health. Doctoral students in the Population Health program may take this course for up to 9 credit hours in a semester. Credit Hours: 1-9

PH555S - Traffic Safety Management Course deals with highway safety legislation and other acts related to traffic safety. Application of safety management techniques, procedures and structure of federal and state agencies are emphasized. Special approval needed from the instructor. Credit Hours: 3

PH561 - Advanced Public Health Workshop A different focal theme each year; e.g., technology and health education; coordinated school health programs; social marketing; mental health. Information, ideas

and concepts are translated into teaching/learning materials and approaches; continuing opportunity for interaction between prospective and experienced health educators. Credit Hours: 1-12

PH571 - Professional Development for Teaching Assistants This course is designed to assist graduate teaching assistants to develop and improve skills necessary for performing their responsibilities. Emphasis will be placed on teaching/learning processes; classroom strategies and skill development; responding to diverse student populations; communication across the curriculum; teaching outside the classroom; identifying campus and community resources, support services, media, and technologies; evaluation and assessment. Restricted to graduate teaching assistants. Special approval needed from the instructor. Credit Hours: 3

PH583 - U.S. Health System: Organization, Delivery, and Policy This course examines dynamics and trends in organization, financing, and delivery of health care in the United States. Specific current health policy issues and the political, social, and economic forces that affect them are analyzed. Practical implications for public health professionals will be considered. Credit Hours: 3

PH585 - Global Health Issues This course is designed to introduce students to current health concerns in economically developing nations by examining socioeconomic, cultural, and political issues impacting health. Basic epidemiologic principles will be used to study disease and adverse health conditions in developing countries as well as understand and critique possible intervention strategies. Implications for health educators working in international settings will be discussed. Credit Hours: 3

PH588 - Current Issues in Environmental Health This course will address core principles and concepts of environmental health disciplines, analyze environmental factors impacting human and ecological health, and explore environmental health tools through their application to current issues of concern to government agencies. Credit Hours: 3

PH592 - Practicum in Safety and Industrial Health Students are assigned full-time to a safety agency or industry for experience in either safety or industrial health. Restricted to those specializing in safety industrial health. Special approval needed from the instructor. Credit Hours: 8

PH593 - Principles of Epidemiology in Public Health This course will present principles and practices related to the study, prevention and control of health-related conditions in the human population. Emphasis will be placed on understanding the principal concepts of epidemiology, including aspects of disease distribution, epidemiologic methods, risk assessment of disease and injury, descriptive and analytic epidemiologic methods and study designs, and application of epidemiologic data to the prevention and control of disease and injury. Format for the class will include lecture and small group seminars. Credit Hours: 3

PH597 - Seminar in Public Health Advanced graduate students discuss individual health projects and present research problems. Each will present a dissertation prospectus. The course will cross two semesters. The first semester will require class attendance. The second will require attending dissertation prospectus and defense meetings and writing individual reports. Prerequisite: PH 533B. Credit Hours: 2

PH598 - Grant Writing in Public Health Consideration is given to funding sources, proposal guidelines, procedures for support, budgetary requirements and evaluation procedures. Students examine different types of funded projects, develop a research proposal and analyze the art of grantsmanship and political action. Credit Hours: 3

PH599 - Thesis Credit Hours: 1-6

PH599A - MPH Applied Practical Experience (APE) Seminar The purpose of the MPH Applied Practice Experience Seminar is to prepare students for their applied practice experience and for a future as a public health professional. This seminar serves as one of the prerequisites for enrolling in the MPH Applied Practical Experience (PH 599B). Through this semester, students will prepare the components of the applied practice experience learning agreement. This seminar provides students with useful skills needed to complete an applied practice experience and to work in a public health or community setting. Students will have a specific topic, project(s) and/or site in mind prior to taking this course, which is typically taken in the second semester of Year 1. Prerequisite: PH 507 with a grade of B or better. Credit Hours: 1

PH599B - MPH Applied Practical Experience (APE) Master of Public Health (MPH) students will demonstrate competency attainment through applied practice experiences. All MPH students are required to complete a 240-hour experience with a community-based component. The Applied Practice Experience (APE) provides a practical experience in a public health setting where students apply skills and knowledge they gained during didactic courses to attain at least five competencies. Dual degree students have opportunities to integrate and apply their learning from both degree programs through applied practice experiences. Students meet the APE requirements by supporting the Program's mission and students' career goals, to the extent possible. Prerequisite: PH 599A with a grade of B or better. Credit Hours: 2

PH599C - MPH Integrative Learning Experience During the final semester(s) of study, students are required to complete an integrative learning experience (ILE) that demonstrates synthesis of foundational and program competencies. ILEs require two products: 1) a high-quality written product and 2) a presentation on the ILE. Prerequisite: PH 599B with a grade of B or better. Credit Hours: 3

PH600 - Dissertation Credit Hours: 1-16

PH601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

PH603 - Ph.D. Seminar in Population Health This course is a discussion of current topics and literature in Population Health. Provides a forum for PhD students and faculty presentations and review of current research efforts. Encourages integration of content knowledge to prepare for careers in the field. Restricted to admission to PhD program in Population Health or consent of instructor. Credit Hours: 1

PH699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

REC401 - Fundamentals of Environmental Education (Same as AGRI 401 and FOR 401) An experiential course designed to help students interested in conservation education understand and apply teaching principles for both inside and outside the classroom. The class includes certification in a nationally recognized environmental education program, and is suitable for students in natural resource, agriculture, recreation and education fields. Requires field trip transportation fee and supplemental expenditures not to exceed $25 per course registration. Offered alternate (odd) years. Credit Hours: 3

REC404 - Foundations of Recreational Therapy An introductory course in the practice of recreational therapy. Concepts, history, and growth of RT as a healthcare profession, theories, treatment approaches in RT, an overview of the APIE process, and other professional issues will be introduced. This course covers the NCTRC exam content area of Foundation Knowledge. This course is ONLINE. Credit Hours: 3

REC405 - Recreation Therapy Facilitation Techniques This course is designed to provide students with knowledge of a variety of facilitation techniques utilized in recreation therapy. Facilitation techniques discussed include assistive technology, animal assisted services, land and water based outdoor recreation, sports, exercise, stress management, and creative arts. Students will gain an understanding of the theory, risk management, and application for each facilitation technique. Credit Hours: 3

REC406 - Recreation Therapy for Physical Disabilities This course is designed to provide students with the knowledge to implement recreational therapy interventions such as exercise, aquatic activities, sports, mind-body techniques, and outdoor recreation for individuals with physical disorders or chronic illness. Students will learn how to design, plan, and implement evidenced-based RT programs. Travel to local agencies may be required. It is recommended REC 405 be taken prior or concurrent with this course. Credit Hours: 3

REC407 - Recreation Therapy for Mental Health This course is designed to provide students with the knowledge to implement recreational therapy interventions such as exercise, aquatic activities, sports, mind-body techniques, and outdoor recreation for individuals with a mental health disorder, cognitive disorder, or intellectual disability. Students will learn how to design, plan, and implement evidenced-based

RT programs. Travel to local agencies may be required. It is recommended REC 405 be taken prior or concurrent with this course. Credit Hours: 3

REC423 - Environmental Interpretation (Same as AGRI 423 and FOR 423) Principles and technique of natural and cultural interpretation. Two hours lecture, three hours laboratory. Prerequisite: ten hours biological science or ten hours of recreation. Requires field trip transportation fee not to exceed $40 per course registration. Credit Hours: 3

REC425 - Planning and Design of Recreational Facilities An examination of major design considerations for a variety of recreation facilities such as recreation centers, recreation sport complexes, parks, visitors centers, and natatoriums. Special attention will be given to long range facility planning. Prerequisite: REC 300, REC 301, REC 303. Restricted to 4th Year or graduate standing. Credit Hours: 3

REC426 - Outdoor Adventure Land Based Pursuits This course provides a combination of theoretical background and technical aspects of outdoor adventure based pursuits in a vertical environment and will emphasize hands-on skill development such as movement on rock, rope systems, anchors, rappelling and belaying, protection placement, and lead climbing philosophy. Taught biennially. Course fee and field trips required. Fee: $100. Credit Hours: 3

REC427 - Outdoor Adventure Water Based Pursuits This course provides a combination of theoretical background and technical aspects of outdoor adventure based pursuits in a water environment and will emphasize hands-on skill development such as equipment nomenclature, strokes, rescues, and reading/ recognizing water features. Taught biennially. Course fee and field trips required. Fee: $100. Credit Hours: 3

REC428 - Outdoor Adventure Challenge Based Pursuits This course provides a combination of theoretical background and technical aspects of outdoor adventure based pursuits in a challenge environment and will emphasize hands-on skill development-spotting/belaying, equipment management, program design/sequencing, facilitation strategies, and course design and maintenance. Taught biennially. Course fee and field trips required. Fee: $100. Credit Hours: 3

REC429 - Planning, Logistics, & Risk Management in Outdoor Recreation This course provides an experiential approach in addressing the planning, logistics, and safety and risk management needed to design, implement, and prepare outdoor adventure based expeditions. Fulfills portions of the Wilderness Education Association's Planning and Logistics/Safety and Risk Management core competencies. Taught Biennially. Credit Hours: 3

REC430 - Outdoor Living Skills This course provides a foundation to basic outdoor living skills in backcountry environments. Topics include basic camping skills, equipment and clothing selection, weather, health and sanitation, travel techniques, navigation, and decision making. Course fees and field trip required. Course fee: $100. Credit Hours: 3

REC431 - Expedition Leadership This course focuses on professional leadership of highly adventurous wilderness trips. Emphasis is on development of leadership through sound judgment, decision-making, and teaching in a backcountry/wilderness environment on an extended expedition. Fulfills the Wilderness Education Association's Education and Leadership core competency. Taught biennially. REC 429 & REC 430 recommended before taking REC 431. Course fee and field trips required. Trip fees not to exceed $750. Credit Hours: 3

REC432 - Environmental Issues and Ethics in Outdoor Recreation This course will address the management and issues related to outdoor recreation and the importance of developing a land ethic that will ensure future use of outdoor resources. The history, background, and development of the recreation ecology movement will be addressed. Fulfills the WEA's Environmental Integration core competency and LNT's Master Educator curriculum. Taught Biennially. Course fee and field trip required. Fee: $35. Credit Hours: 3

REC433 - Adventure Education This course provides a practical and theoretical background of adventure education. Topics that will be addressed and applied include the use of challenge and adventure in various situations, experiential education, activity sequencing, utilizing peak experiences,

leadership styles and development, debriefing, and framing. Taught Biennially. Field trips required. Credit Hours: 3

REC434 - Wilderness First Responder This course addresses the practice of advanced medical techniques in a wilderness environment. The Wilderness First Responder is recognized as the industry standard for those who work in the backcountry or remote environments. Wilderness First Responder certification offered with successful completion. Course fee and field trips required. Fee: $30. Credit Hours: 3

REC436 - Introduction to Adventure Therapy This course introduces the theory and practice of adventure therapy programming utilized by recreation professionals, social workers, psychologists, addiction counselors, and healthcare professionals. Topics include: history of adventure therapy, current trends and issues, risk management, facilitation techniques, and program assessment. Credit Hours: 3

REC445 - Outdoor Recreation Management This course addresses the philosophies and principles underlying the growth and development of outdoor recreation management. Outdoor recreation is examined in terms of historical values, long range planning, site design, visitor needs, and environment impact. Course fee and field trip required. A fee of up to $14 may be required. Credit Hours: 3

REC446 - Backcountry and Wilderness Trail Stewardship This course provides a hands-on approach to aspects of volunteer trail stewardship in planning, implementing, and evaluating basic and advanced trail features and building projects. Rules, regulations, and potential hazards associated with working, traveling, and camping in the backcountry will be addressed. Students will be exposed to trail building tools and their proper usage and care. Field trips required. Special approval needed from the instructor. Credit Hours: 3

REC460 - Administration of Recreational Therapy Services Administration of recreation therapy programs in a variety of services areas. Topics will include: the US Healthcare system, organizational planning, personnel management, and advocacy for the profession. This course includes the NCTRC exam content areas of Administration of TR/RT Service and Advancement of the Profession. Prerequisite: REC 404 with a grade of C or better or concurrent enrollment. Credit Hours: 3

REC461 - Assessment and Documentation for Recreational Therapy This course is designed to provide students with the skills to assess client needs, design treatment plans, and complete documentation as an entry level recreational therapist (RT). Students will learn how to complete assessments of clients in a variety of treatment settings, write client goals and objectives, develop treatment plans, and write discharge plans. This course covers the NCTRC exam content areas of Assessment Process, and Documentation. Prerequisite: REC 404 with a grade of C or better. This course is ONLINE. Credit Hours: 3

REC465 - Human Resources in Sport and Recreation An examination of current human resources topics in the recreation industry. Topics will include: planning and analysis, staffing, compensation, employee motivation, employee training, employee development, employee relations and compliance. Credit Hours: 3

REC466 - Community Recreation Designed to examine current administrative topics in public and nonprofit recreation. Topics include: history and philosophical foundations of public parks, administrative practices, planning, budgeting, working with boards and commissions, community engagement, land acquisition, programming, and current trends in community recreation. This course is ONLINE. Credit Hours: 3

REC467 - Commercial Recreation Trends in commercial recreation will be addressed in this class. Topics include: challenges and constraints in commercial recreation, starting a commercial recreation enterprise, financial management, marketing, operations, programming, and future trends in commercial recreation. This course is ONLINE. Credit Hours: 3

REC468 - Campus Recreation This course focuses on the administration, organization, planning, implementation, and evaluation of programs and facilities in the campus recreation field. Specific topics addressed include historical and philosophical aspects, administrative practices, competitive and non-competitive programming, future trends and issues, budgeting, public relations, professional associations,

and examination of individual characteristics of campus recreation. This course is ONLINE. Credit Hours: 3

REC500 - Philosophy of Leisure and Play This course explores the meaning of leisure, recreation, and play from a philosophical and psychological perspective. The historical and contemporary relationships among work, time, lifestyles and leisure are analyzed. In addition, the course attempts to develop students' viewpoints toward these topics in order that they formulate a philosophy of leisure. Required of all majors. Credit Hours: 3

REC501 - Personnel in Leisure Services This course will examine administrative issues regarding personnel in leisure delivery systems. Topics include: leadership theory, selection and training, legislation, collective bargaining, motivation, performance appraisal, power and gender. Credit Hours: 3

REC502 - Revenue Production for Leisure Service Organizations An integrative view of revenue production for leisure service organizations. Numerous practices of generating income, such as fees and charges, facility rental, bonds, investments and public/private cooperative development will be examined in relationship to their ability to aid an organization in achieving its stated objectives. Credit Hours: 3

REC503 - Management and Marketing of Recreation and Sport Organizations An examination of the critical functions of a manager in public and private leisure service organizations. Particular topics include goal and policy development, ethics, risk management, fiscal management and facility operations. Special attention is given to the leisure service managers role in marketing recreation. Credit Hours: 3

REC508 - Trends & Global Issues in Sport and Recreation This course provides an examination of current issues, trends and professional concerns in the recreation industry. Topics include: professional issues, programming trends, legislative issues, and other topics. Credit Hours: 3

REC524 - Recreational Therapy Foundations This course introduces foundational concepts of recreation therapy practice with an emphasis on the professional skills necessary at the administrative and supervisory level. Specific focus areas will include recreational therapist education, practice, research, and a history of the profession. Credit Hours: 3

REC525 - Recreation Therapy Facilitation Techniques This course provides students with a broad overview of facilitation techniques utilized in recreation therapy. Facilitation techniques discussed include assistive technology, animal assisted services, land and water based outdoor recreation, sports, exercise, stress management, and creative arts for therapeutic application. Credit Hours: 3

REC526 - Recreation Therapy for Physical Disabilities This course introduces recreational therapy interventions such as exercise, aquatic activities, sports, mind-body techniques, and outdoor recreation for individuals with physical disorders or functional limitations in physical domain areas. Students will learn how to design, plan, and implement evidenced-based RT programs. Credit Hours: 3

REC527 - Recreation Therapy for Mental Health This course introduces recreational therapy interventions such as exercise, aquatic activities, sports, mind-body techniques, and outdoor recreation for individuals with mental health disorders or functional limitations in emotional, social, or cognitive domain areas. Students will learn how to design, plan, and implement evidenced-based RT programs. Credit Hours: 3

REC550 - Research in Recreation This course focuses on research concepts and methods (quantitative and qualitative). Students will complete a critical analysis of significant research in recreation or therapeutic recreation, and will develop a tentative research proposal. Prerequisite: REC 500. Credit Hours: 3

REC560A - Seminar in Recreation-Park & Community Major issues and trends in recreation. Credit Hours: 3

REC560B - Seminar in Recreation-Campus Recreation Major issues and trends in recreation. Credit Hours: 3

REC560C - Seminar in Recreation-Commercial Recreation Major issues, trends, and cultural, economic and social significance. Prerequisite: REC 500 or consent of department. Credit Hours: 3

REC565 - Environmental Issues in Outdoor Recreation Seminar in environmental issues and problems that affect outdoor recreation. Content includes history of the environmental movement in relation to outdoor recreation and specific problems affecting recreation on national parks, forest and wildlife refuges. Special approval needed from the instructor. Credit Hours: 3

REC575 - Project in Recreation A project is a culmination of the Master's degree. It can be either a practice-based service product or an applied research study that does not require a thesis format. Examples of projects may include grant proposals, program development, curriculum development, landscape design, manuals, visual productions, web page development, organizing special events or fund raising. Special approval needed from the instructor. Credit Hours: 3

REC580 - Readings in Leisure and Recreation Readings in selected topics in leisure and recreation under staff supervision. Not more than three hours may count toward Master's degree. Special approval needed from the instructor. Credit Hours: 1-3

REC596 - Internship in Recreation A course on professional development in the recreation industry. This course is a combination of academic assignments and experiential learning. Students will be under the joint supervision of the academic course instructor, and a recreation professional. For graduate credit only. Special approval needed from the instructor. Credit Hours: 3

REC597 - Internship in Recreational Therapy An introduction to professional development in recreational therapy. This course is required for eligibility to sit for the NCTRC exam. This course is a combination of academic assignments and experiential learning. It is supervised by a CTRS at the site AND at the academic institution. For graduate credit only. Prerequisite: majority of RT coursework completed; Special approval needed from the instructor. Credit Hours: 3

REC599 - Thesis Selecting, investigating, and writing on a research topic under the personal supervision of a member of the department. Designed to help the student to develop ability to design, conduct, analyze and interpret research related to recreation and therapeutic recreation. Special approval needed from the department. Credit Hours: 3

REC601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

SHUS503 - Seminar in Human Sciences A discussion of current topics and literature in Human Sciences. Provides a forum for student and faculty presentations and review of current research efforts. Encourages integration of content knowledge to prepare for careers in the field. Restricted to major or consent of instructor. Credit Hours: 1

SHUS520 - Foundations of Nutrition This course introduces students to the scientific principles of human nutrition from a biochemical and a physiological perspective. Students will attain knowledge of the function of nutrients in the body, the anatomy and physiology of digestion and absorption; the function of macro-nutrients and micro-nutrients, as well as minerals; the relationship between foods, food substances, and diseases such as heart disease, diabetes, cancer, and obesity. Credit Hours: 3

SHUS521 - Nutrition Care Process in Practice Application of the nutrition care process to assess nutrition status, formulate nutrition diagnosis, create intervention strategies such as meal plans, foster counseling skills, and monitor health outcomes. Prerequisite: SHUS 520 with a grade of B or better. Credit Hours: 3

SHUS594 - Professional Development Project Supervised independent work leading to the production of a professional development project that can be utilized in the student's professional career. The exact nature of the project is to be determined by the student and the respective graduate advisor. An additional graduate faculty member in the student's area of study also must approve the project before the student begins work. Graded S/U only. Special approval needed from the instructor. Credit Hours: 3

Human Sciences Faculty

Graduate Faculty in Food and Nutrition

AbuGhazaleh, Amer A., Professor, Ph.D., South Dakota State University, 2002; 2004. Dairy nutrition.

Banz, William J., Professor and Chair, Ph.D., University of Tennessee, 1995; 1995. Human nutrition, nutritional physiology.

Null, Dawn C., Assistant Professor, Ph.D., R.D.N., Southern Illinois University, 2012; 2017. Human nutrition, food insecurity, environmental nutrition.

Emeriti Faculty

Ashraf, Hea-Ran Lee, Professor, Emerita, Ph.D., Iowa State University, 1979; 1980.

Endres, Jeannette M., Professor, Emerita, Ph.D., St. Louis University, 1972; 1975.

Roth, Sara Long, Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1991; 1990.

Welch, Patricia, Professor, Emerita, Ph.D., Southern Illinois University, 1982.

Graduate Faculty in Kinesiology

Anton, Philip M., Associate Professor, Ph.D., University of Northern Colorado-Greeley, 2006. Exercise and cancer rehabilitation.

Becque, M. Daniel, Associate Professor, Ph.D., University of Michigan, 1988. Exercise physiology.

Knapp, Bobbi, Associate Professor, Ph.D., University of Iowa, 2008. Gender and sport.

Park, Meungguk, Associate Professor, Ph.D., The Ohio State University, 2005. Sport marketing and promotion.

Partridge, Julie, Professor, Ph.D., University of Northern Colorado, 2003. Sport and exercise psychology.

Quisenberry, Sean, Assistant Professor, Ph.D., University of Tennessee, Knoxville, 2020. Human movement and biomechanics.

Wallace, Juliane, Associate Professor, Director, Ph.D., Iowa State University, 2004; 2004. Cardiovascular exercise physiology.

Yoh, Taeho, Professor, Ph.D., Florida State University, 2001. Sport marketing, corporate social responsibility, and sport and recreation for STEM education (STREAM).

Emeriti Faculty

Ackerman, Kenneth, Assistant Professor, Emeritus, M.A., Michigan State University, 1959.

Blackman, Claudia J., Assistant Professor, Emerita, M.S.Ed., Southern Illinois University, 1968.

Blinde, Elaine M., Professor, Emerita, Ph.D., University of Illinois, 1987.

Brechtelsbauer, Kay, Assistant Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1980.

Good, Larry, Associate Professor, Emeritus, Ed.D., Temple University, 1968.

Knowlton, Ronald, Professor, Emeritus, Ph.D., University of Illinois, 1961.

Vogler, E. William, Professor, Emeritus, Ed.D., University of Utah, 1980.

West, Charlotte, Professor, Emerita, Ph.D., University of Wisconsin, 1969.

Wilson, Donna, Associate Professor, Emerita, M.F.A., University of Oklahoma, 1975.

Graduate Faculty in Recreation Professions

Colson, Tina, Senior Lecturer, M.S., Southern Illinois University, 2004.

Kim, Jun, Assistant Professor, Ph.D., University of Utah, 2013; 2015.

Emeriti Faculty

Glover, James M., Associate Professor, Emeritus, Ph.D., University of Maryland, 1980; 1984.

Glover, Regina B., Associate Professor, Emerita, Ph.D., University of Maryland, 1983; 1983.

Malkin, Marjorie J., Professor, Ed.D., Emerita, University of Georgia, 1986; 1989.

McEwen, Douglas N., Professor, Emeritus, Ph.D., Michigan State University, 1973; 1975.

Linguistics

Linguistics offers programs leading to the Master of Arts degree in Linguistics and the Master of Arts degree in Teaching English to Speakers of Other Languages (TESOL).

The M.A. in Linguistics is designed to give students a broad training in many aspects of contemporary linguistics, including phonology, syntax, phonetics, semantics, historical linguistics, psycholinguistics, language acquisition, sociolinguistics, and field methods. In addition, students will pursue advanced study through further coursework or thesis research. Graduates of the linguistics program frequently go on to more advanced study and research in linguistics leading to a Ph.D. degree or pursue jobs in the technology, publications, marketing, or translation sectors, for example.

The M.A. in TESOL is designed primarily for students who wish to pursue careers in Teaching English to Speakers of Other Languages (TESOL) either in the United States or abroad. The program combines both theory and practice. In addition to a core course in linguistics, students in the M.A. in TESOL program are required to take courses in the theory and methods of language teaching, language assessment, and second language acquisition, and to teach in a supervised practicum in the teaching of oral and written English. Graduates of the M.A. in TESOL program can go on to advanced study of language learning and teaching or related fields, in addition to pursuing a career in language instruction, instructional materials or test development, teacher training, program administration, or related areas.

For students who are interested in language study but are not committed to either graduate major, the Linguistics Program offers a number of interesting, non-specialist courses which may serve as electives in degree programs such as those offered by Anthropology, Communication Studies, School of Health Sciences, School of Psychological and Behavioral Sciences, School of Literature, Writing, and Digital Humanities, and School of Education. A sequence of courses is also available for students wishing to pursue a double major combining Linguistics or TESOL with other programs at the master's level.

This program requires a nonrefundable $65 application fee that must be submitted with the application for Admission to Graduate Study in Linguistics. Applicants must pay this fee by credit card. Applicants for admission should address inquiries to the Linguistics Program Coordinator, Southern Illinois University Carbondale, Carbondale, IL 62901-4521, USA.

Admission

Undergraduate GPA

Applicants for admission to either degree program, in addition to meeting the requirements for admission to the Graduate School, are expected to have undergraduate grade point averages of at least 3.0 (*A* = 4.0) on the entire last undergraduate GPA earned at the time of application. Applicants with GPAs below 3.0 may be granted conditional admission. However, students admitted on a conditional basis must earn a graduate GPA of 3.0 in their first semester of study. Failure to do so will result in the student being dropped from the program.

TOEFL and GRE

International student applicants who are not native speakers of English must achieve a score on the Test of English as a Foreign Language (TOEFL) of at least 577 (paper) or 90 (IBT), or 7.0 on the IELTS.

Although submission of scores on the Graduate Record Examination (GRE) is not required for admission to the Graduate School nor to the Program, applicants are advised that high GRE scores put them at a competitive advantage when applying for University fellowships or assistantships within the Program.

Academic Retention

Academic Probation

As required by the Graduate School, any student whose GPA falls below 3.0 will be placed on academic probation. Any student who fails to return to good standing after one term on academic probation will not be eligible to hold a graduate assistantship. Any student who fails to return to good standing after two terms on academic probation will be dropped from the program. Any student who accumulates three or more incompletes will be put on academic probation and may return to good standing by reducing the number of incompletes to two or fewer.

Minimum Grades in Core Courses

As described below, both M.A. programs include a number of core courses which are required of all students. These courses must be passed with a grade of *B* or better. Students who receive a grade lower than *B* on a core course must take the course again. They will register officially for the course and will be granted permission to do so by the Program. Both grades will be counted in calculating GPA. Students who need to repeat core courses may take other courses concurrently or sequentially for which the core courses are prerequisites.

Grade Point Average to Graduate

All graduate work must be completed with an overall GPA of 3.0.

Master of Arts (M.A.) in Linguistics

The Master of Arts in Linguistics requires 36 credit hours of coursework including a mix of required courses and electives in the major linguistic subfields. There are two options for completing the M.A. in Linguistics: a thesis option and a non-thesis option. Thesis writers are required to do advanced coursework in phonology or syntax and three to six credit hours of thesis writing; non-thesis writers have a little more flexibility in their advanced coursework and take more courses at that level in lieu of thesis writing credit hours.

Core Courses (9 credit hours)

All students in the M.A. in Linguistics program must take the three LING courses below, and earn a grade of at least a B:

- LING 503: Phonological Theories (3 CH)
- LING 505: The Professional Study of Linguistics (3 CH)
- LING 508: Syntactic Theory (3 CH)

Breadth of Study (6 credit hours)

All students in the M.A. in Linguistics program must take at least two of the LING courses below:

- LING 500: Formal Semantics (3 CH)
- LING 502: Phonetics (3 CH)
- LING 504: American Dialects (3 CH)
- LING 509: Philosophy of Language (3 CH)
- LING 510: History of Linguistics (3 CH)
- LING 515: Sociolinguistics (3 CH)
- LING 517: Language Contact (3 CH)
- LING 525: Language Families (3 CH)

- LING 530: Linguistic Structures (3 CH)
- LING 535: Psycholinguistics (3 CH)
- LING 540: Studies in Linguistics (3 CH)
- (substitutions allowed with Program approval)

Depth of Study (6 credit hours)

All students in the M.A. in Linguistics program must also take at least two of the courses below:

- LING 506: Historical Linguistics (3 CH)
- LING 520: Morphology (3 CH)
- LING 550A-D: Seminar (3 CH each) (each focuses on different topics)
- LING 552: Field Methods in Linguistics (3 CH)
- LING 553: Advanced Phonology (3 CH)
- LING 558: Advanced Syntax (3 CH)
- (substitutions allowed with Program approval)

Additional coursework requirements diverge depending on whether students choose the thesis or non-thesis option for the M.A. in Linguistics.

Thesis Option

M.A. in Linguistics students who wish to write theses must formally apply to the Program by the beginning of the third semester. If accepted to the thesis track, thesis-writing students must also enroll in a minimum of three credit hours and a maximum of six credit hours of LING thesis writing:

- LING 599: Thesis (3-6 CH)

The thesis is a written summary of a student's independent research conducted while enrolled in the M.A. in Linguistics program. Every thesis is expected to include a clear statement of the topic, identification of the particular issues to be investigated, a literature review, an explanation of the procedures followed, and an analysis and discussion of research findings. Each student writing a thesis must have a thesis committee composed of at least three faculty members, one of whom serves as chair of the committee. Two of the three committee members (including the chair) must have their primary appointment in the Linguistics Program. The thesis must be submitted to a public oral examination by the student's committee. Detailed information regarding the thesis is distributed within the Program.

Non-thesis Option

M.A. in Linguistics students on the non-thesis track must take an additional LING course from the Depth of Study group (3 credit hours):

- LING 506: Historical Linguistics (3 CH)
- LING 520: Morphology (3 CH)
- LING 550A-D: Seminar (3 CH each) each focuses on different topics)
- LING 552: Field Methods in Linguistics (3 CH)
- LING 553: Advanced Phonology (3 CH)
- LING 558: Advanced Syntax (3 CH)
- (substitutions allowed with Program approval)

Electives

To complete the 36 credit hours required for the M.A. in Linguistics, students may choose electives from among courses offered within the Program or (with Linguistics Program approval) relevant courses taught by faculty in Anthropology, School of Health Sciences, School of Computing, School of Literature, Writing, and Digital Humanities, Program in Languages, Cultures, and International Trade, School of History and Philosophy, School of Psychological and Behavioral Sciences, School of Communication Studies, and School of Education. Where appropriate, students are encouraged to take courses in quantitative and ethnographic research methods taught in the School of Education and in the Social Sciences. Students

are also encouraged to attend the annual summer institutes sponsored by the Linguistic Society of America and TESOL. Credit may be allowed for coursework successfully completed in this way.

Master of Arts (M.A.) in Teaching English to Speakers of Other Languages

The M.A. degree in TESOL blends linguistic science with the art of classroom practice. It prepares students both intellectually and experientially so that as professionals they are capable of making wise and informed choices among different language teaching approaches, methods, and techniques. In addition, students will understand how differences among individual students, teaching and learning situations, and social structures influence decisions they will be called upon to make as teachers or other language professionals. The M.A. in TESOL program provides a firm and broad foundation in current theories of language and language learning and graduates will be prepared to take on careers as teacher educators and curriculum or assessment specialists as well as classroom teachers.

There are two options for completing the M.A. in TESOL degree: a thesis option and a non-thesis option. In both cases 36 credit hours are required. Both options include five components: a group of core courses totaling 15 credit hours, a selection of language skills-related courses totaling 6 credit hours, a teaching specialty course (3 credit hours), free electives totaling 9 credit hours, and research training (3 credit hours)--either a thesis (thesis option) or additional course work from a selected group of courses with a substantial research component (non-thesis option).

Core Courses (15 credit hours)

All students in the M.A. in TESOL program take the following five courses and earn a grade of at least a B:

- LING 505: The Professional Study of Linguistics (3 CH)
- LING 541: Introduction to Second Language Acquisition (3 CH)
- LING 570: Methods and Materials in TESOL (3 CH)
- LING 572: Assessment of ESL and Bilingual Students (3 CH)
- LING 583: TESOL Practicum (3 CH)

Language Skills (6 credit hours)

All students in the M.A. in TESOL program must take at least two of the following language skills-related courses:

- LING 531: Teaching Writing and Grammar in a Second Language (3 CH)
- LING 585: Teaching Listening and Speaking in a Second Language (3 CH)
- LING 587: Teaching Reading and Vocabulary in a Second Language (3 CH)

Teaching Specialties Courses (3 credit hours)

All students in the M.A. in TESOL program must take one of the following teaching specialties courses:

- LING 560: Theoretical Foundations of Teaching ESL and Bilingual Students (3 CH)
- LING 573: Computer-Assisted Language Learning (3 CH)
- LING 582: Course Design for TESOL (3 CH)
- LING 586: English for Specific Purposes (3 CH)
- (substitutions allowed with Program approval)

Research Component (3 credit hours)

All students in the M.A. in TESOL program must take at least three credit hours from the following courses with a substantial research component:

- LING 515: Sociolinguistics (3 CH)
- LING 517: Language Contact (3 CH)

- LING 542: Advanced Seminar in Second Language Acquisition (3 CH)
- LING 549: Research Methods in Linguistics and TESOL (3 CH)
- LING 584: Advanced Seminar in Grammar and Composition (3 CH)
- LING 589: Advanced Seminar in Reading and Vocabulary (3 CH)
- LING 590: Advanced Seminar in Second Language Pronunciation (3 CH)
- LING 592: Research in Computer-Assisted Language Learning (3 CH)
- LING 599: Thesis (1-6 CH)
- (substitutions allowed with Program approval)

Note that students pursuing the thesis option must enroll in a minimum of 3 credit hours and a maximum of 6 credit hours of LING 599 (Thesis). Each student writing a thesis must have a thesis committee composed of at least three faculty members, one of whom serves as chair of the committee. Two of the three committee members (including the chair) must have their primary appointment in the Linguistics Program. The thesis must be submitted to a public oral examination by the student's committee. Detailed information regarding the thesis is distributed within the Program.

Electives (9 credit hours)

M.A. in TESOL students can select from a number of elective courses offered each semester. These include additional courses from the categories listed above as well as other courses offered in the Linguistics Program. In addition, courses related to language, education, and/or research methods offered by other Programs may be used to complete elective requirements, with approval from the student's faculty advisor. Students are also encouraged to attend summer institutes and other professional development programs offered by the TESOL International Organization or the Linguistic Society of America. Credit may be approved for coursework successfully completed this way.

Accelerated M.A. in Linguistics

Students who are completing an undergraduate major in linguistics may pursue the Accelerated M.A. in Linguistics, taking 9 credits of graduate credit in their senior year that will count towards their undergraduate Linguistics degree as well as their M.A. Linguistics program. Students who wish to pursue the Accelerated M.A. in Linguistics must have maintained a 3.5 grade point average in their 300 and 400-level courses, and must have completed LING 200, LING 300, plus at least 6 additional credits of 300- or 400-level Linguistics coursework before entering their final year of undergraduate work.

If accepted into the Accelerated M.A. in Linguistics, students will enroll in LING 505 The Professional Study of Linguistics in the Fall of their final undergraduate year, and in LING 503 Phonological Theories and LING 508 Syntactic Theory in the Spring of their final undergraduate year. These 9 credits taken while maintaining undergraduate status, complete the Core Courses of the M.A. in Linguistics. The remaining 27 credits of the M.A. in Linguistics mirror the requirements for the M.A. in Linguistics outlined above – 6 credit hours of Breadth of Study courses, 6 credit hours of Depth of Study courses, 3 credit hours of Thesis coursework or the Non-thesis option, and 12 credit hours of Linguistics electives (selected in consultation with their advisor).

Linguistics Courses

LING412 - The Linguistic Structure of Japanese (Same as JPN 410) Introduction to the linguistic structure of Japanese (phonetics, phonology, morphology, syntax, semantics, pragmatics, etc.) with particular emphasis on morphology and syntax. This course satisfies the CoLA Writing-Across-the-Curriculum requirement. Credit Hours: 3

LING418 - Pragmatics of Japanese This course takes a pragmatic approach to learning Japanese and focuses on Japanese "in context." Students will acquire interpretive skills to understand the contextual particularity and nuance of Japanese in context. They are introduced to various pragmatic concepts and constructs, such as speech act, politeness, face negotiation, speech style shifts, and gender, among others. Credit Hours: 3

LING426 - Gender, Culture, and Language (Same as WGSS 426 and ANTH 426) This course is designed for students who have had some exposure to gender studies. It will focus on readings in language and gender in the fields of anthropological- and socio-linguistics. Issues to be addressed are the differences between language use by men/boys and women/girls, how these differences are embedded in other cultural practices, and the various methodologies and theories that have been used to study gendered language use. Credit Hours: 3

LING442 - Language Planning Survey of the field of language planning: definitions and typologies, language problems, language treatment, attitudes and beliefs about language, relations between language planning processes and other kinds of social and economic planning, linguistic innovations and other processes of language change, implementation of language policies. Prerequisite: LING 300. Credit Hours: 3

LING470 - Theoretical Foundations of Teaching ESL and Bilingual Students Provides a broad overview of the field of bilingual education, including related terminology; historical, political, social, theoretical, international, economic, cultural, and legal aspects of bilingual education; and educational program models for serving English language students. Satisfies the CoLA Writing-Across-the-Curriculum Requirement. Credit Hours: 3

LING471 - Bilingual Education Methods and Materials Methods and materials for: bilingual content, biliteracy, sheltered and multicultural instruction, and for ELLs with disabilities; techniques for advocacy for ELLs, writing funding proposals, and conducting program reviews and workshops. Includes materials reviews, lesson planning, and micro-teaching. Credit Hours: 3

LING500 - Formal Semantics (Same as PHIL 502) Discussion of the formal mechanisms used to encode meaning in natural language. Potential topics include: predication, definiteness, quantification, and semantic modeling. Credit Hours: 3

LING502 - Phonetics A course in phonetics, beginning with articulatory phonetics and moving into acoustic phonetics. Students will learn to describe the sounds of the world's languages using articulatory descriptions, practice making those sounds, and learn how to use spectrographic software to analyze the acoustic stream. A student who has completed LING 402 is ineligible to enroll. Credit Hours: 3

LING503 - Phonological Theories An examination of phonological theory and application from a cross-linguistic perspective. Data analysis from the perspective of different theories. Prerequisite: LING 505 or consent of instructor. Credit Hours: 3

LING504 - American Dialects The study of regional, social, and ethnic variation within American English. Includes variation at the structural level (phonological, syntactic, etc.) as well as variation due to register, speaking rate, social networks. A student who has completed LING 404 is ineligible to enroll. Credit Hours: 3

LING505 - The Professional Study of Linguistics Basic concepts and methods of general linguistics. Fundamentals of the nature, structure and functioning of language. Data analysis and problem solving. Introduction to professional standards and resources available for linguistic research. Course satisfies introduction to linguistics requirement. Credit Hours: 3

LING506 - Historical Linguistics Theories and methods in the study of the history and prehistory of languages and language families. The course includes the study of the linguistic and social histories that lead to language change. Prerequisite: LING 505 with a grade of B or better or consent of instructor. Credit Hours: 3

LING508 - Syntactic Theory An examination of the major concepts and issues in generative syntax from a cross-linguistic perspective. Prerequisite: LING 505 or consent of instructor. Credit Hours: 3

LING509 - Philosophy of Language Theories on the nature of "truth" and "meaning" and their relationship to natural language. Potential foci include reference, definite descriptions, naming, externalism, modality, and possible worlds. A student who has completed LING 410 is ineligible to enroll. Credit Hours: 3

LING510 - History of Linguistics The history of linguistic inquiry from classical times to the present. Prerequisite: one previous course in linguistics or consent of instructor. Credit Hours: 3

LING513 - English Phonology A phonology course focused on the phonology of English including the sounds and sound patterns of English as spoken by both native and non-native speakers. A student who has completed LING 403 is ineligible to enroll. Credit Hours: 3

LING515 - Sociolinguistics This course studies the relationship between language and society. Focus may be on a narrow subfield within sociolinguistics such as regional dialectology, language variation, linguistic geography, multilingualism, languages in contact, language planning or a broadly defined survey of several subfields within sociolinguistics. A student who has completed LING 415 are ineligible to enroll. Credit Hours: 3

LING516 - Spanish(es) in the U.S.A A survey of the historical, social, political, linguistic, and educational issues surrounding the use of Spanish(es) in the United States. Topics may include Spanish language use, bilingualism, language maintenance, language shift, heritage language learning, Hispanic diversity, Latino literature, and the effects of language contact on both Spanish and English. A student who has completed LING 416 is ineligible to enroll. Credit Hours: 3

LING517 - Language Contact The study of the social conditions under which language contact occurs and the cultural and linguistic consequences of such contact. Data may come from several languages and cultures. Potential topics include language maintenance, shift, ideological issues surrounding bilingualism, language development, language change. A student who has completed LING 417 is ineligible to enroll. Credit Hours: 3

LING520 - Morphology Detailed discussion of the theories and methods in modern morphological theories. Emphasis is on current work in morphology, its impact on other subareas of linguistics, and application of theory to data, and implications for current work. Prerequisite: LING 505 or consent of instructor. Credit Hours: 3

LING525 - Language Families A synchronic or diachronic survey of a particular language, language family, sub-family, or macro-family. May be repeated as topic varies for a total of nine credit hours. A student who has completed LING 450 is ineligible to enroll. Credit Hours: 3

LING530 - Linguistic Structures Detailed analysis of the linguistic structure of a language. Language under study is variable. May be repeated as language studied varies. A student who has completed LING 430 is ineligible to enroll. Credit Hours: 3

LING531 - Teaching Writing and Grammar in a Second Language An introduction to current theories of ESL/EFL composition and pedagogical grammar, as well as principles and techniques for teaching composition and grammar in a second language. Course will combine understanding of theory with evaluation of published materials and original development of high-quality teaching materials. Prerequisite: LING 570 or concurrent enrollment with a B or better or consent of instructor. Credit Hours: 3

LING535 - Psycholinguistics A survey of psycholinguistic theory and methods. Topics covered may include the nature of language, theories of human communication, language comprehension and production, first language acquisition, second language acquisition, meaning and thought, language processing in the brain. A student who has completed LING 445 is ineligible to enroll. Credit Hours: 3

LING540 - Studies in Linguistics Selected topics in linguistics. May be repeated as topics vary to a total of 6 credit hours per term and 9 credit hours toward the degree. Prerequisite: LING 505 or consent of instructor. Credit Hours: 3-6

LING541 - Introduction to Second Language Acquisition (Same as PSYC 577) Introduction to key concepts and major theoretical and methodological issues in second language acquisition. Major developments in SLA in phonology, morphology, lexis, syntax, semantics and discourse and provides students with hands-on experience in describing and accounting for second language data. Opportunity to design and implement a data-based SLA study in an area of interest to students. Prerequisite: LING 505 or consent of instructor. Credit Hours: 3

LING542 - Advanced Seminar in Second Language Acquisition Research seminar in second language acquisition on selected topics such as universal grammar in SLA, language transfer, variation in SLA, second language learnability, etc. Prerequisite: LING 541 or consent of instructor. Credit Hours: 3

LING543 - Bilingualism (Same as PSYC 578) A comprehensive introduction to the study of bilingualism. Course will examine the linguistic, psycholinguistic, sociolinguistic, and educational aspects of bilingualism, particularly as pertaining to the care and education of bilingual children. Prerequisite: LING 505 or consent of instructor. Credit Hours: 3

LING544 - Discourse Analysis (Same as ANTH 544) Survey of major approaches to the analysis of spoken or written discourse including speech act theory, pragmatics, interactional sociolinguistics, ethnography of communication, conversation analysis, variation analysis, and critical discourse analysis. Prerequisite: LING 505 or consent of instructor. Credit Hours: 3

LING545 - Language, Gender and Sexuality: Anthropological Approaches (Same as ANTH 546, WGSS 546) This course examines the study of language in society with a particular focus on how linguistic practices are part of the construction of gender and sexuality identities, ideologies, social categories and discourses. Anthropological theories applied to the study of language, gender and sexuality will be covered along with a variety of methodological approaches. Credit Hours: 3

LING548 - The Linguistic Anthropology of Education (Same as ANTH 548) This course examines the role of language in education through a critical anthropological lens, examining educational institutions across cultures and times. Topics to be covered include the teaching of literacy, language policies and ideologies in education, the linguistic construction of identities in school settings (including national, ethnic, gender, sexuality, age, religious, and social class identities) and modes of intervention to improve educational endeavors. Ethnographic studies of education in a variety of national, cultural, and linguistic contexts will be covered, as well as other discourse analysis approaches to the study of educational processes and institutions. The course is designed to bring together a wide range of material of interest to graduate students in anthropology, linguistics, education, and other related fields. Credit Hours: 3

LING549 - Research Methods in Linguistics and TESOL This course examines basic concepts and principles of quantitative and qualitative methods in Linguistics and TESOL. It prepares students to critically read and understand related research as well as design and carry out their own research projects. It includes analyses of research articles, writing literature reviews, making informed decisions about appropriate methodology and data analyses procedures. Prerequisite: LING 505 or consent of instructor. Credit Hours: 3

LING550A - Seminar in Theoretical Linguistics Guided advanced research in syntax and semantics. May be taken only once. Special approval needed from the department. Credit Hours: 3

LING550B - Seminar in Theoretical Linguistics Guided advanced research in phonology. May be taken only once each. Special approval needed from the department. Credit Hours: 3

LING550C - Seminar in Theoretical Linguistics Guided advanced research in sociolinguistics. May be taken only once each. Special approval needed from the department. Credit Hours: 3

LING550D - Seminar in Theoretical Linguistics Guided advanced research in selected topics. May be repeated as topics vary. Special approval needed from the department. Credit Hours: 3

LING551 - Pragmatics (Same as ANTH 551) An investigation of language use in context; this incorporates both social and psychological aspects of language use. Topics to be covered in this course include speech acts; implicature; conversation analysis; and the acquisition of communicative competence by both first and second language learners. Prerequisite: LING 505 or consent of instructor. Credit Hours: 3

LING552 - Field Methods in Linguistics Focus on the methods of eliciting and evaluating data to construct a detailed linguistic description of a language or dialect by working with a native speaker or speakers of the language/dialect. Additional discussion on preservation and wider linguist-community responsibility. Prerequisite: LING 505 or consent of instructor. Credit Hours: 3

LING553 - Advanced Phonology Emphasis is on current work in phonology, its impact on phonological theory, and application of theory to data, and implications for current work. Prerequisite: LING 503 or consent of instructor. Credit Hours: 3

LING558 - Advanced Syntax Emphasis is on current work in syntax, its impact on syntactic theory, and application of theory to data, and implications for current work. Prerequisite: LING 508 or consent of instructor. Credit Hours: 3

LING560 - Theoretical Foundations of Teaching ESL and Bilingual Students An overview of bilingual education including related terminology, theories, methodology, and models for serving English language students. Historical, political, social, economic, cultural, and legal aspects of bilingual education. A student who has completed LING 470 is ineligible to enroll. Credit Hours: 3

LING565 - Linguistic and Cultural Studies in Minority Languages of the Americas Examines the ongoing struggle to maintain, preserve, and revitalize indigenous and other minority languages of the Americas. Addresses pre-Columbian history, language contact and shift, language endangerment, death, and maintenance. A student who has completed LING 465 is ineligible to enroll. Credit Hours: 3

LING570 - Methods and Materials in TESOL Requirement for Illinois ESL/Bilingual Approval. Methods/materials to teach ESL/EFL in the United States (K-adult) and abroad. Promotes eclecticism through reflective practice; overview of methods from early grammar translation to cognitive and communicative, integrated skills, technology, and content-based approaches. Lecture, readings, discussion, demonstration, materials review, lesson planning, micro-teaching. Credit Hours: 3

LING572 - Assessment of ESL and Bilingual Students Theoretical and practical issues in the assessment, testing, measurement, and evaluation of second and foreign language learners. Covers the history and development of language testing practices; the relationships among assessment, instruction, and course design; principles of good assessment, the sociocultural context surrounding assessment; and traditional and alternative assessment that can be use for K-12 and adult learners. A student who has completed LING 472 is ineligible to enroll. Credit Hours: 3

LING573 - Computer Assisted Language Learning This course examines a variety of technologies that can be used to support and enhance second language learning. In addition to building students' practical skills and comfort with a range of technologies, the course encourages critical thinking about if/when to use technologies in the classroom and how to best integrate them. Credit Hours: 3

LING580 - Seminar in Special Topics in TESOL-Teaching English Abroad Selected topics in special areas of teaching English to speakers of other languages. May be repeated as topics vary. Prerequisite: LING 570 or consent of instructor. Credit Hours: 3-6

LING582 - Course Design for TESOL A review of issues and procedures in the design and implementation of courses for teaching English to speakers of other languages. Particular attention is given to recent developments such as content-based instruction. All major course components such as setting of objectives, syllabus design, content specification, and evaluation are considered. In addition, resources available for addressing these issues will be discussed. Prerequisite: LING 570 or consent of instructor. Credit Hours: 3

LING583 - TESOL Practicum Class observation and supervised teaching of English to speakers of other languages; meets concurrently with Linguistics 454: Observation and Practice in TESOL and Linguistics 100: Instruction in ESL. Prerequisite: LING 570 or consent of department. Credit Hours: 3

LING584 - Advanced Seminar in Grammar and Composition Course will focus on the advanced study of grammatical features in English and their applicability to the writing and composing process of ESL/EFL writers. Additionally, stylistic and rhetorical factors, including cross-cultural rhetoric, will be considered, with the focus guided by student and instructor interests. Course will include reading the primary research literature, student development of a research project, and implications for supporting second language writers. Prerequisite: LING 431 or LING 531 with a B or better or consent of instructor. Credit Hours: 3

LING585 - Teaching Listening and Speaking in a Second Language An introduction to current theories, principles, and techniques for teaching second language listening and speaking skills. Students

will gain practical experience in developing meaningful listening and speaking activities/materials. Prerequisite: LING 570 or permission of instructor. Credit Hours: 3

LING586 - English for Specific Purposes A course designed to familiarize students with key components of English language courses designed for speakers of other languages with specific needs or in well-defined settings. Case studies and sample courses are reviewed and students develop individual projects related to a content area or course component of their choice, e.g., needs assessment, syllabus design, materials development, or teacher training. Prerequisite: LING 570 or consent of instructor. Credit Hours: 3

LING587 - Teaching Reading and Vocabulary in a Second Language An introduction to current theories of reading and vocabulary learning, as well as principles and techniques for teaching reading and vocabulary in a second language. Course will combine understanding of theory with evaluation of published materials and original development of high-quality teaching materials. Not open to those who have taken LING 487. Prerequisite: LING 570 with a B or better or consent of instructor. Credit Hours: 3

LING588 - Culture & the Language Classroom This course explores the various ways in which culture informs and interacts with teaching and learning in the additional language classroom. Materials and assignments are designed to advance students' understanding of theory, practice, and research in the wider field of intercultural communication with a focus on how such knowledge can be applied to pedagogical practices in language teaching. Considerations will include the effects of cultural identities and cross-cultural experiences on language, perception, and world view and how these factors inform the larger language learning experience. Current and future teachers will be equipped with the tools to develop their individual intercultural competence and to foster intercultural awareness in their own classrooms. Credit Hours: 3

LING589 - Advanced Seminar in Reading and Vocabulary Course will focus on the advanced study of reading processes and lexical knowledge in first, second and additional languages. All levels of reading skills and lexical knowledge, from letter recognition to discourse processing, will be considered, with the focus guided by student and instructor interests. Course will include reading the primary research literature, student development of a research project, and implications for supporting second language readers. Prerequisite: LING 487 or LING 587 with a B or better or consent of instructor. Credit Hours: 3

LING590 - Advanced Seminar in Second Language Pronunciation Course will focus on aspects of second language acquisition specific to second language phonology along with attention to the phonology of English. Course will be research focused with extensive reading in L2 pronunciation topics and student development of a research project. Prerequisite: LING 485 or LING 585 with a B or better or consent of instructor. Credit Hours: 3

LING592 - Research in Computer-Assisted Language Learning Course will focus on aspects of teaching and learning second languages with technology. Choices of technology and course focus will be determined by students' and instructor's interests. Course will be research-focused with extensive reading in Computer-Assisted Language Learning and student development of a research project. Prerequisite: LING 573 with a grade of B or better or consent of the instructor. Credit Hours: 3

LING593 - Research in Linguistics Individual research under graduate faculty guidance. Special approval needed from the instructor. Credit Hours: 1-4

LING594 - TESOL Internship Provides students with the opportunity to work with students of diverse linguistic backgrounds in a local school or in an international setting. Students will complete weekly reports and monthly reflections, observe language educators, and design and teach language lessons. Students will leave the course with practical knowledge regarding classroom organization, management, instructional strategies, and language program organization. Prerequisite: LING 570 with a grade of B or better. Credit Hours: 1-3

LING597 - Readings in Linguistics Individual readings in linguistics under graduate faculty guidance. Special approval needed from the department. Credit Hours: 1-8

LING599 - Thesis Minimum of three hours to be counted toward a Master's degree. Special approval needed from the department. Credit Hours: 1-6

LING601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Linguistics Faculty

Baertsch, Karen S., Associate Professor, Ph.D., Indiana University, 2002. Phonology, phonetics, historical linguistics, dialects, Central Asian languages.

Gualapuro, Santiago D., Assistant Professor, Ph.D., Ohio State University, 2023. Minority Languages of the Americas, Sociolinguistics, Psycholinguistics.

Lakshmanan, Usha, Professor, Ph.D., University of Michigan, 1989; 1990. First and second language acquisition, psycholinguistics, syntactic theory, Tamil syntax.

Martin, Katherine I., Associate Professor, Ph.D., University of Pittsburgh, 2015. Second language acquisition, reading and literacy, vocabulary learning, morphological awareness, crosslinguistic transfer, English as a Second Language.

McCrocklin, Shannon, Associate Professor, Ph.D., Iowa State University, 2014. Second language phonology and pronunciation, computer-assisted language learning.

Olsen, Michael L., Assistant Professor of Practice, Ph.D., University of Georgia, 2021. Sociolinguistics, corpus-assisted discourse analysis.

Olsen, Rachel M., Assistant Professor of Practice, Ph.D., University of Georgia, 2022. Social/emotional phonetics, second language composition/grammar.

Punske, Jeffrey, Associate Professor, Ph.D., University of Arizona, 2012. Theoretical syntax, morphology, and semantics.

Toyosaki, Satoshi, Professor, Ph.D., Southern Illinois University Carbondale, 2005. Intercultural communication, ethnography of communication, discourse analysis.

Emeriti Faculty

Angelis, Paul, Associate Professor, Emeritus, Ph.D., Georgetown University, 1968; 1981.

Brutten, Sheila, Associate Professor, Emerita, M.A., Southern Illinois University Carbondale, 1965; 1968.

Dotson, John E., Professor, Emeritus, Ph.D., Johns Hopkins University, 1969.

Friedenberg, Joan, Professor, Emerita, Ph.D., University of Illinois at Urbana-Champaign, 1979; 1994.

Gilbert, Glenn G., Professor, Emeritus, Ph.D., Harvard University, 1963; 1970.

Halliday, Laura J., Clinical Professor, Emerita, Ph.D., Southern Illinois University, 2005.

Montavon, Mary V., Lecturer, Emerita, Ph.D., University of Illinois, 2003.

Perkins, Kyle, Professor, Emeritus, Ph.D., University of Michigan, 1976; 1976.

Mass Communication and Media Arts

The College of Arts and Media (CAM) offers four interdisciplinary graduate programs at the college level associated with graduate education in the School of Media Arts and the School of Journalism and Advertising:

- M.A. in Media Theory and Research
- M.F.A. in Mass Communication and Media Arts
- M.S. in Professional Media and Media Management Studies
- Ph.D. in Mass Communication and Media Arts

These programs develop teaching, research, and creative work that interrogates the construction, reception, and social impact of mass media forms and texts. The work uniquely blends methods from the arts, humanities, and social sciences. Students study historical, theoretical, and critical approaches to mass communication. The faculty seek to nurture an intellectual and creative community attuned to global social changes, as we respond to new ways of creating and analyzing written, aural, and visual media.

To support the graduate programs, the College of Arts and Media houses multimedia computer labs and state-of-the-art design, video, audio, animation, and editing software in a suite of work rooms called the New Media Center. The college has a wide variety of cinema, photography, print media, radio-television and video production facilities.

Applicants must hold a bachelor's degree from an accredited institution or have completed all undergraduate degree requirements prior to the beginning of the classes for the term for which admission is sought. Applicants may begin the admissions process when they need no more than 32 credit hours beyond the credit shown on their transcript at the time of application to complete all requirements for the bachelor's degree.

Applications

All requirements for admission to the Graduate School at Southern Illinois University Carbondale must be met. Applicants must submit completed application forms, transcripts of all post-secondary studies, and a personal statement describing their objectives for study in the program to which they are applying, career goals and interests. Applicants must arrange for three references to send letters of recommendation to the Associate Dean of Graduate Studies. Students should contact the College of Arts and Media.

The graduate programs require a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in Mass Communication and Media Arts (M.A., M.S., M.F.A., Ph.D.). Applicants must pay this fee by credit card.

Applicants to our graduate programs must meet the English language requirements stipulated by the Graduate School. The English language requirement may be waived if an applicant was awarded a Master's degree at an accredited college or university in the United States and has been in residence in the United States continuously prior to application to the graduate program at SIUC. The student must not have been out of the United States for more than one calendar year. Alternatively, the requirement may be waived if the applicant has a minimum of 60 graded (A, B, and C) credit hours of recent coursework completed at an accredited college or university in the United States with continuous residence in the United States prior to application to the graduate program at SIUC. Pass/Fail, Satisfactory/Unsatisfactory, or Proficiency credit is not acceptable. English language requirements vary according to the individual situations of applicants. What will satisfy the requirement is always determined by the Graduate School Admissions Office, not the faculty or staff of the programs.

Retention

In addition to the retention policies of the SIUC Graduate School, each master's degree student must maintain an overall grade point average of 3.0 (*A* = 4) and each Ph.D. student must maintain an overall grade point average of 3.25 (*A* = 4). Upon falling below this average, students will be allowed only one full academic term (excluding J-term and/or summer session) to bring their average up to the minimum; failing this, they will be dropped from the program and will not be allowed to re-apply.

All graduate students will undergo an end-of-the-year faculty review of their progress toward their degree that includes course progress and/or creative or scholarly work. After the review, students will be notified of any deficiencies to be resolved. Students failing to rectify those deficiencies by the end of the next semester (excluding summer) will be permanently suspended from the graduate program.

All graduate students who have completed their course work and the minimum number of credit hours required for projects, thesis or dissertation must enroll in MCMA 601, Continuing Research Enrollment, each semester until the completion of their degree programs. Exceptions to the continuing enrollment rule are allowed only for students who are required to be away from SIUC full-time by the United States or the State of Illinois government.

Master of Arts (M.A.) in Media Theory and Research

The Master of Arts program offers a solid foundation in media theory, research methods and new media technologies in preparing students for a variety of careers in industry and academia. The interdisciplinary curriculum of the graduate programs in the College Arts and Media (CAM) helps students to develop teaching, research, and creative skills that integrate the construction, reception, and social impact of mass media forms and texts.

The students' work uniquely integrates methods from the arts, humanities, and social sciences as they study historical, theoretical, and critical approaches to mass communication. The faculty seek to nurture an intellectual and creative community attuned to global social changes, as we respond to new ways of creating and analyzing the traditional and the new media digital platforms. A variety of intellectually stimulating projects and papers allows students to develop their scholarship in multiple areas of interest.

Program Admission

The program is open to all graduating students from different disciplines of communication and media arts, social sciences and humanities. The program attracts several national and international students that adds to the vibrant nature of their intellectual journey. Students whose admission requirements are deficient in certain areas may be required to take undergraduate courses that will not be counted towards the M.A. in Media Theory and Research degree. International students must have a TOEFL of at least 550 (paper score) or 80 (internet score) or an IELTS score of 6.5 to be admitted. All applicants must take the Graduate Record Examination (GRE). Generally, applicants must have a grade point average of at least 3.0 (A = 4) on the entire last undergraduate work. Other factors will also be considered including: professional and academic accomplishments, examples of professional work, awards and honors, graduate examination scores or evidence of scholarship such as research papers or other media work.

Retention

Students are required to maintain a good GPA throughout the program. No course in which the grade is below B- shall count toward the degree or fulfillment of any requirement, but the grade will be included in the grade point average. The program generally takes two years to complete.

However, the College of Arts and Media allows a maximum of three years from the date of enrollment in the M.A. in Media Theory and Research program to the completion of the degree.

Procedures

Apart from the courses taken, all M.A. in Media Theory and Research students will need to present their research work or work in progress at the end of the first year at a graduate symposium organized by the college in the end of the Spring semester each year for review of their progress. All students will undergo this faculty review at the end of Year 1. This process allows faculty to deliver formal feedback regarding the student's progress toward their degree that includes performance in courses and scholarly production work.

By the end of the third semester in residence, each M.A. in Media Theory and Research student will be required to form a three-member graduate faculty committee. The students need to present a proposal and must complete the proposal hearing and thesis defense within one year of finishing coursework and three years from the beginning of the program. The student publicly defends both the thesis proposal and completed thesis in an oral examination with the graduate faculty committee.

Student Learning Outcomes

- Students will learn and demonstrate competence in the theoretical areas of media studies.
- Students will demonstrate the ability to integrate and synthesize appropriate theoretical perspectives and existing literature in the field to their own work.
- Students will demonstrate competence in the use and application of mass communication research methods.
- Students will learn to conduct original research as befits a scholar in the field.
- Students will contribute new knowledge to the field through creative projects and the writing of a thesis.

- Students will learn to write, edit and present research papers at conferences and prepare manuscripts for publication.
- Students will demonstrate in writing and oral presentation the ability to evaluate their own work in relation to other researchers in the field.

Curriculum

Candidates must complete a minimum of 30 credit hours including 6 credit hours of core requirements: JRNL 537: Introduction to Mass Communication Research (3 CH) and 3 credit hours of JRNL 588: Graduate Colloquium taken over the first two semesters.

Core (7 Credit Hours)

- JRNL 537: Introduction to Mass Communication Research (3 CH)
- JRNL 588: Graduate Colloquium (3 CH)

Emphasis Area (12 Credit Hours)

Students take a minimum of four elective courses (12 CH) selected in consultation with the faculty thesis committee and the Director of Graduate Studies.

The program culminates in a scholarly, research-based thesis, MCMA 599B (3 CH) M.A. in Media Theory and Research Thesis.

Students are required to present at the graduate research symposium in Spring Year 2. Students may not take any credit hours at the 400-level to count toward their progress in the M.A. in Media Theory and Research program.

Other graduate-level SIUC courses (CAM or from other graduate programs) will count for M.A. in Media Theory and Research electives, as deemed appropriate by the student, thesis advisor, thesis committee members, and Director of Graduate Studies.

Students are required to take one research methods course from the following list:

- JRNL 531: Critical Research Methods in Media Arts (3 CH)
- JRNL 532: Quantitative Research Methods in Mass Communication (3 CH)
- JRNL 534: Qualitative Research Methods (3 CH)

In Fall Year 2, students are required to take more advanced courses:

- JRNL 508: Conceptual Foundations of Research Strategy (3 CH) -AND-
- JRNL 514: Theories of Mass Communication and Media (3 CH)

Sample Curriculum Map

Fall Year 1 (9 Credit Hours)

- JRNL 537: Introduction to Mass Communication Research (3 CH)
- One elective or research methods course (3 CH)
- JRNL 588: Graduate Colloquium (3 CH)

Spring Year 1 (9 Credit Hours)

- One elective or research methods course (3 CH)
- One M.S. Elective course (3 CH)
- JRNL 588: Graduate Colloquium (3 CH)

Fall Year 2 (9 Credit Hours)

- JRNL 508: Conceptual Foundations of Research Strategy (3 CH)
- JRNL 514: Theories of Mass Communication and Media (3 CH)
- One M.S. Elective course (3 CH)

Spring Year 2 (6 Credit Hours)

- One M.S. Elective course (3 CH)
- MCMA 599B: Thesis (3 CH)

There is a required presentation at the graduate student symposium in Spring Year 2.

Preferred M.A. in Media Theory and Research Electives

- JRNL 500: Media as Social Institutions
- JRNL 506: Law and Policy of Mass Communication
- JRNL 507: Media Management
- JRNL 509: Media Ethics
- JRNL 538: Critical Analysis of Discourse
- JRNL 553: History and Theory of Media Arts
- JRNL 561: Media, Social Movements, and Social Change
- JRNL 563: Globalization and the Media
- JRNL 565: Strategic Advertising Management
- JRNL 567: International Advertising
- JRNL 587: Critical Social Media Studies
- MCMA 535: Topics in Textual Analysis
- MCMA 552: Special Topics in Media Studies
- MCMA 564: Political Economy of Media
- MCMA 576: Gender, Sexuality and Media
- MCMA 577: Topics in Race and Media
- MCMA 585: Pedagogy and Professorial Skills

However, other graduate-level courses in the College of Arts and Media are allowed, as deemed appropriate by the faculty committee and Director of Graduate Studies. We also encourage students to work with their faculty advisors to seek out graduate-level coursework in other programs where different perspectives will enhance our students' learning.

Master of Fine Arts (M.F.A.) in Mass Communication and Media Arts

The Master of Fine Arts in Mass Communication and Media Arts program emphasizes the artistic development of the individual student and the creation of quality of works in photography, film, video, sound, new media, and/or interdisciplinary media. Degree requirements are 60 credit hours. The program generally takes three years to complete.

This terminal degree program is unique in its balance of coursework in media arts practices with art, media history and theory, individual mentorship, and interdisciplinary work in other programs throughout the University. The faculty awarding a successful student the M.F.A. is an acknowledgement of creative and intellectual achievement and is accomplished through the development of a body of an innovative individual practice work in the media arts, accompanied by a creative research paper. The program prepares students for careers in the contemporary media arts as a media artist, artist, video or filmmaker, designer, theorist, educator, and other future professions which will require creativity and artistic acumen.

While mastery of craft within media arts is a vital component of the M.F.A. in Mass Communication and Media Arts, the program's philosophy is that graduate study should expand the student's breadth as an artist and encourage interdisciplinary study. Available course work in production, criticism, theory, history, and combined media studies emphasizes the interwoven character of traditional and contemporary approaches and technologies in the 21st century.

A distinguished faculty of artists and scholars in the School of Media Arts teach in excellent facilities, and a variety of curricular offerings allow students to individually tailor their programs of study.

Mission Statement

We are committed to fostering a vibrant, inclusive learning environment nurturing innovative interdisciplinary paths of exploration, and diversity in ways of knowing, all within an atmosphere that embraces experimentation and improvisation.

Through individual and collaborative work, dialogue with other artists, critical engagement with art history, and contemporary practices, artists enrolled in our program can expect to develop a practice focused on self-expression and creative risk-taking through engagement with varied forms and materials.

Artists who create in our program wrestle with difficult questions, initiate change, reveal hidden histories, and cultivate alternative ways of listening, seeing, and bringing about joy.

With this in mind, we commit to creating a safe space for such challenging and deep work, one based on empathy and compassion through the co-creation of a radically welcoming learning community. We acknowledge our complicity in problems embedded in academic structures and elsewhere. We believe inclusivity is process-oriented. To that end, we commit to challenge acts of racism, classism, sexism, heterosexism, homophobia, transphobia, ableism, xenophobia, or other social pathologies. Additionally, in light of the current climate crisis and other critical environmental issues, we are dedicated to a more sustainable practice for living and media-making.

Admission

All requirements for admission to the Graduate School at Southern Illinois University Carbondale must be met. Applicants must submit the Application for Admission to Graduate Study forms, certified transcripts of all post-secondary studies as well as three letters of recommendation from individuals who can evaluate their potential for graduate studies. Applicants must also submit a resume outlining educational and professional experience, as well as a personal statement describing their objectives for study in the program, career goals and interests.

Prospective students must present evidence of exceptional talent and/or potential in one or two media pursuits in the degree program. Applicants should include an example of work that demonstrates their competency. This evidence will ordinarily consist of a portfolio of photographs or digitally generated art works, one or more films, videos, sound works, multimedia productions, web art projects, or other evidence of artistic potential. Applicants must clearly indicate their role(s) in any project submitted. An interview with faculty in the program is highly recommended, particularly for applicants with minimal course work in the field.

Acceptance into the program and continuing enrollment are at the discretion of the College of Arts and Media and the Graduate School. Generally, applicants must have a grade point average of at least 3.0 (4.0 = A) on the entire last undergraduate work. International students whose native or first language is not English, or those with fewer than 100 graded hours of college credit at a U.S. college or university, must take the TOEFL and score at least 550 (paper score) or 80 (internet score) or have an IELTS score of 6.5 to be admitted. Students whose preparation is deemed lacking in certain areas may be required to take undergraduate courses to attain competency. These will not be counted toward the M.F.A. in Mass Communication and Media Arts degree.

Retention

No course in which the grade is below B- shall count toward the degree or fulfillment of any requirement, but the grade will be included in the grade point average. The M.F.A. in Mass Communication and Media Arts program generally takes three years to complete.

Procedures

All M.F.A. in Mass Communication and Media Arts students will undergo a faculty review at the end of Year 1. This process allows faculty to deliver formal feedback regarding the student’s progress toward their degree that includes performance in courses and creative and scholarly production outside of the classroom. The possible outcomes of this review are Pass, Provisional Pass, and Fail. Failure of this review will result in termination from the program. Students who receive a Provisional Pass in this review will receive a letter outlining the areas in which they must improve and be assigned a faculty mentor for this process. Failure to demonstrate improvement will result in termination from the program.

By the end of the third semester in residence, each M.F.A. in Mass Communication and Media Arts student will be required to select, in consultation with the Associate Dean of Graduate Studies, a committee chair and a committee of two additional graduate faculty members. The faculty committee and the student develop a specific plan of study, considering the requirements of the Graduate School, the degree program, and the goals of the student.

The M.F.A. in Mass Communication and Media Arts degree culminates in an intensive Creative Thesis that must be publicly presented. The exact nature of the student's project and presentation will be determined in consultation with the committee. The committee chair supervises the thesis. An oral examination by the faculty committee will take place in conjunction with the public presentation of the thesis and will focus on an evaluation of the project. The M.F.A. in Mass Communication and Media Arts electronic thesis document consists of a formal paper describing the Creative Thesis, its historical precedents, contemporary context, and theoretical underpinnings with embedded media files that document the public exhibition/screening. It must be filed with the SIUC Graduate School. The University reserves the right to retain a portfolio or samples of each student's work.

Student Learning Outcomes

Students will demonstrate:

- A disciplined, professional arts-based practice in the media arts.
- A mastery in one or more practices in the media arts.
- To write about their own work and the works and theories of others from critical, historical, and aesthetic perspectives.
- An analytical understanding of contemporary media discourses.
- An understanding of creative practice and scholarly research methods.
- The ability to conduct independent scholarly and creative research.
- The ability to explain fundamental and advanced concepts in the field of media arts.

Curriculum

- Students must take 9 credit hours of MCMA 559: MFA Studio Art Practice during all three Fall semesters of residency in the program.
- Students must take 6 credit hours of JRNL 588: Graduate Colloquium in Fall Year 1 and Spring Year 1.
- Students must take 12 credit hours of JRNL 584: Supervised Independent Studio during the first four semesters of residency in the program.
- Students must take two media studies courses: JRNL 553: History and Theory of Media Arts and JRNL 531: Critical Research Methods in Media Arts.
- Students must take 6 credit hours from this menu of "Studio Practice Courses"
    - JRNL 516: Networked Art
    - JRNL 522: Sound Art Studio
    - JRNL 540: Documentary Journalism
    - MCMA 521: Expanded Cinema
    - MCMA 523: Topics in Studio Practices
    - MCMA 582: Game Narratives
- Students must take 6 credit hours of MCMA 524: Topics in Interdisciplinary Practices
- Students must take at least 12 credit hours of electives.
- Students must take at least 5 credit hours of MCMA 599A: MFA Thesis during their third year in residency in the program.

Sample Curriculum Map

Fall Year 1 (18 Credit Hours)

- JRNL 584: Supervised Independent Studio (6 CH)
- JRNL 588: Graduate Colloquium (3 CH)
- JRNL 553: History and Theory of Media Arts (3 CH) -OR-
- MCMA 524: Topics in Interdisciplinary Practices (3 CH)
- MCMA 559: MFA Studio Art Practice (6 CH)

Spring Year 1 (15 Credit Hours)

- JRNL 584: Supervised Independent Studio (6 CH)
- JRNL 588: Graduate Colloquium (3 CH)
- Studio Practice Course (3 CH) -OR-
- Elective Course (3 CH)
- JRNL 531: Critical Research Methods in Media Arts (3 CH) -OR-
- MCMA 524: Topics in Interdisciplinary Practices (3 CH)

Fall Year 2 (18 Credit Hours)

- JRNL 584: Supervised Independent Studio (6 CH)
- MCMA 559: MFA Studio Art Practice (6 CH)
- Studio Practice Course (3 CH) -OR-
- Elective Course (3 CH)
- JRNL 553: History and Theory of Media Arts (3 CH) -OR-
- MCMA 524: Topics in Interdisciplinary Practices (3 CH)

Spring Year 2 (12 Credit Hours)

- JRNL 584: Supervised Independent Studio (6 CH)
- Studio Practice Course (3 CH) -OR-
- Elective Course (3 CH)
- JRNL 531: Critical Research Methods in Media Arts (3 CH) -OR-
- MCMA 524: Topics in Interdisciplinary Practices (3 CH)

Fall Year 3 (11 Credit Hours)

- MCMA 559: MFA Studio Art Practice (6 CH)
- MCMA 599A: MFA Thesis (2 CH)
- Elective Course (3 CH)

Spring Year 3 (9 Credit Hours)

- MCMA 599A: MFA Thesis (3 CH)
- Elective Course (3 CH)
- Elective Course (3 CH)

Preferred M.F.A. in Mass Communication and Media Arts Electives

- JRNL 511: New Media Production
- JRNL 517: Multi-Platform Storytelling
- JRNL 549: Professional Documentary Practice
- JRNL 568: Social Media Theory and Practice
- MCMA 535: Topics in Textual Analysis
- MCMA 543: Media Arts Studio Seminar
- MCMA 552: Special Topics in Media Studies
- MCMA 576: Gender, Sexuality and Media
- MCMA 577: Topics in Race and Media
- MCMA 585: Pedagogy and Professorial Skills

However, other graduate-level courses in the College of Arts and Media are allowed, as deemed appropriate by the faculty committee and Director of Graduate Studies. We also encourage students to work with their faculty advisors to seek out graduate-level coursework in other programs where different perspectives will enhance our students' learning.

Master of Science (M.S.) in Professional Media and Media Management Studies

The M.S. degree in Professional Media and Media Management Studies provides students with an interest in professional media practice with an intellectual background in theory and critique of the communication industries. The faculty train students with varied professional interests to establish careers in these industries. The program produces intelligent, socially aware, and flexible graduates primed to become leaders in the communications industry.

The curriculum is designed to expose students to a broad foundation in media studies. In consultation with their committee, composed of three faculty members, students explore in detail through a series of electives one facet of professional media studies or creative practice. Students finish their program of study with the construction of a Research Report or Media Project on a topic of their choosing from within their emphasis area. The School of Journalism and Advertising allows a maximum of three years from date of enrolling in the M.S. in Professional Media and Media Management Studies program for completion of the M.S. degree. This program generally takes two years to complete.

Program Admission

All requirements for admission to the Graduate School at Southern Illinois University Carbondale must be met. Applicants must submit the Application for Admission to Graduate Study forms, certified transcripts of all post-secondary studies, as well as three letters of recommendation from individuals who can evaluate the applicant's potential for graduate studies. Applicants must also submit a resume outlining educational and professional experience, as well as a personal statement describing their objectives for study in the program, and how such study will allow them to pursue their interests and career goals. Applicants should include an example of work that demonstrates their competency, preferably professional work, although prior academic work is acceptable. Work samples might take the form of print articles, video or audio tapes, DVDs, URLs or CDs. Applicants must clearly indicate their role(s) in any project submitted.

Generally, applicants must have a grade point average of at least 3.0 (4.0 = A) on the entire last undergraduate work. International students whose native or first language is not English, or those with fewer than 100 graded credit hours at a U.S. college or university, must take the TOEFL and score at least 550 (paper score) or 80 (internet score) or have an IELTS score of 6.5 to be admitted. Students whose preparation is deemed lacking in certain areas may be required to take undergraduate courses to attain competency. These will not be counted toward the M.S. in Professional Media and Media Management Studies degree.

Retention

No course in which the grade is below B- shall count toward the degree or fulfillment of any requirement, but the grade will be included in the grade point average. The School of Journalism and Advertising allows a maximum of three years from the date of enrollment in the M.S. in Professional Media and Media Management Studies program to the completion of the degree. The program generally takes two years to complete.

Procedures

All M.S. in Professional Media and Media Management Studies students will undergo a faculty review at the end of Year 1. This process allows faculty to deliver formal feedback regarding the student's progress toward their degree that includes performance in courses and scholarly and creative activity production outside of the classroom.

By the beginning of the third semester in residence, each M.S. in Professional Media and Media Management Studies student will be required to form a three-member graduate committee to oversee the capstone Research Report or Media Project. The committee must be selected this early such that the student may register for the required professional media preparation course in which the student will work closely with the faculty committee to initiate work on the final project. The student publicly defends the final project in an oral examination with the committee, generally in the middle of the fourth semester.

Program Learning Outcomes

- Students will demonstrate the ability to identify and articulate an issue, debate, or controversy in a relevant media field.
- Students will demonstrate the ability to independently synthesize existing research into a focused, analytical study of media communication.
- Students will demonstrate the ability to execute a professional media production project.
- Students will demonstrate the ability to write articulately about media.
- Students will demonstrate the ability to speak articulately about media.

Curriculum

Candidates must complete a minimum of 30 credit hours including three core courses (one in mass communications research and the other in multi-platform storytelling) and the capstone Research Report or Media Project.

Core (9 Credit Hours)

- JRNL 537: Introduction to Mass Communication Research (3 CH)
- JRNL 517: Multi-Platform Storytelling (3 CH)
- JRNL 588: Graduate Colloquium (3 CH)

Emphasis Area (15 Credit Hours)

A minimum of five elective courses selected in consultation with at first the Director of Graduate Studies and then the student's three-person faculty committee supervising their research paper or media project. Topics of study include media management, strategic advertising, digital documentary production, multimedia reporting, and new media production.

Research Report or Media Project Sequence (6 Credit Hours)

- JRNL 586A or JRNL 586B: Professional Media Preparation (3 CH)
- JRNL 589A: Media Project or JRNL 589B: Research Report (3 CH)

Sample Curriculum Map

Fall Year 1 (9 Credit Hours)

- JRNL 537: Introduction to Mass Communication Research (3 CH)
- One M.S. Elective course (3 CH)
- JRNL 588: Graduate Colloquium (3 CH)

Spring Year 1 (6 Credit Hours)

- JRNL 517: Multi-Platform Storytelling (3 CH)
- One M.S. Elective course (3 CH)

Fall Year 2 (9 Credit Hours)

- One M.S. Elective course (3 CH)
- One M.S. Elective course (3 CH)
- JRNL 586A: Professional Media Preparation (3 CH) -OR-
- JRNL 586B: Professional Media Preparation Research Report (3 CH)

Spring Year 2 (6 Credit Hours)

- One M.S. Elective course (3 CH)
- JRNL 589A: Media Project (3 CH) -OR- JRNL 589B: Research Report (3 CH)

There is a required presentation at the graduate student symposium in Spring Year 2.

Preferred M.S. in Professional Media and Media Management Studies Electives

- JRNL 500: Media as Social Institutions
- JRNL 506: Law and Policy of Mass Communication
- JRNL 507: Media Management
- JRNL 509: Media Ethics
- JRNL 513: Advanced Photojournalism
- JRNL 515: Sports Photojournalism
- JRNL 540: Documentary Journalism
- JRNL 543: Media Arts Studio Seminar
- JRNL 545: Producing the Sports Talk Show
- JRNL 549: Professional Documentary Practice
- JRNL 552: Special Topics in Media Studies
- JRNL 553: History and Theory of Media Arts
- JRNL 565: Strategic Advertising Management
- JRNL 567: International Advertising
- JRNL 568: Social Media Theory and Practice
- JRNL 576: Sports and the Media
- JRNL 577: Advanced Investigative Reporting
- JRNL 587: Critical Social Media Studies

However, other graduate-level courses in the College of Arts and Media are allowed, as deemed appropriate by the faculty committee and Director of Graduate Studies. We also encourage students to work with their faculty advisors to seek out graduate-level coursework in other programs where different perspectives will enhance our students' learning.

M.S./M.B.A. Concurrent Degrees

Separately, the M.B.A. in the College of Business and Analytics (CoBA) requires completion of 33 credit hours of coursework; the SOJA M.S. in Professional Media and Media Management Studies requires 30 credit hours of coursework. The concurrent degree program entails completion of 21 credit hours of SOJA approved courses and 24 credit hours of CoBA-approved courses, for a total of 45 hours. This is a savings of 18 credit hours over pursuing both degrees separately. CoBA accepts nine credit hours of SOJA-approved coursework and SOJA accepts nine credit hours of CoBA-approved coursework. Students wishing to be admitted to the concurrent program must apply and be accepted to the M.S., as well as, apply and be accepted into the M.B.A program in the College of Business and Analytics. This initiates the process to pursue the concurrent degrees.

Applicants for the concurrent degree program who have not already earned a graduate degree must also earn a satisfactory score on the GMAT or GRE to be admitted to the M.B.A program. Students must also successfully complete the College of Business and Analytics Foundation Workshops offered during the summer semester break, if they have not previously completed the 10 foundation business courses (or their equivalent) required for admission into the M.B.A program.

Doctor of Philosophy (Ph.D.) in Mass Communication and Media Arts

The doctoral program engages students in the interdisciplinary research studies of global media with nationally and internationally accomplished faculty of intellectual scholars and media producers. The college recognizes with pride many of their recent graduates who have successfully launched their careers in academia and industry upon graduation. Students are not only encouraged to think broadly about the discipline, but also develop mastery in a particular specialization in order to produce original research in specific areas of interest. Students represented from many countries provide a vibrant learning atmosphere, and are set for careers in academia and industry.

Admission

Students applying for doctoral study must have a master's degree and a graduate GPA of at least 3.00. International students must have a TOEFL score of at least 550 (paper score) or 80 (internet score) or have an IELTS score of 6.5 to be admitted. All applicants must submit currently valid Graduate Record Examination (GRE) scores. Other factors considered include professional and academic accomplishments. These include: evidence of professional work, awards and honors, evidence of scholarship such as research papers, published articles or creative work. A prior full-time teaching in areas of mass communication and media arts is preferred. A visit to SIUC and interview with faculty is recommended.

Students whose application is deficient in certain areas may be required to take a few undergraduate courses to upgrade. However, these courses will not be counted towards the Ph.D. in Mass Communication and Media Arts degree.

An accelerated entry option to the Ph.D. in Mass Communication and Media Arts program is offered in exceptional cases to students who have been admitted to the M.A. in Media Theory and Research program. To be eligible, the student must: 1) possess a master's degree; 2) have qualified for admission to the Ph.D. program in CAM initially; 3) complete at least nine credit hours but no more than 18 credit hours in the M.A. in Media Theory and Research degree; 4) have a minimum 3.25 GPA in the M.A. in Media Theory and Research program with no incomplete or deferred grades. The student may petition the Director of Graduate Studies for the accelerated entry option during the semester in which the student will begin taking the nine credit hours of graduate courses, but must petition before earning the 18th credit hour of course work in the M.A. in Media Theory and Research program. If approved, the student will be enrolled in the Ph.D. in Mass Communication and Media Arts program the following semester. Up to 18 graduate credit hours earned in the M.A. in Media Theory and Research program will count toward the Ph.D. in Mass Communication and Media Arts degree if the accelerated entry option is approved by the MCMA Graduate Committee. Once the student is admitted to the Ph.D. in the College of Arts and Media (CAM), all requirements of the Ph.D. in Mass Communication and Media Arts program apply. Exceptions to any of these rules must be appealed to the CAM Graduate Committee, which has final authority to approve or reject the petition.

Retention

No course in which the grade is below B- shall count toward the degree nor fulfillment of any requirement, but the grade will be included in the grade point average.

Procedures

All Ph.D. students in the College of Arts and Media (CAM) will undergo a faculty review at the end of the first year. Students will present a research paper at a college level symposium. This process allows faculty to deliver formal feedback regarding the student's progress toward their degree that includes performance in courses and scholarly production of research or creative work at the end of the year.

By the end of the third semester in residence, each Ph.D. student will be required to select, in consultation with the Director of Graduate Studies, a committee chair. The faculty committee chair and the student develop a specific plan of study, considering the requirements of the Graduate School, the degree program, and the goals of the student.

In the beginning of the third year, after the Ph.D. student has completed coursework, the student must pass a rigorous comprehensive written and an oral defense of the comprehensive exams.

After successfully completing the comprehensive written and oral exams, the student advances to candidacy to complete the dissertation. The dissertation committee comprises of the chair and four members. The final dissertation is based on scholarly research that adds to the body of knowledge in the field.

Under the guidance of a dissertation committee chair, the doctoral student forms a dissertation committee and prepares a dissertation proposal. A public oral defense of the proposal must be made before the dissertation committee, and approved within one year of reaching candidacy. The College of Arts and Media allows a maximum of **seven** years from the date of original enrollment for completion of the doctoral degree.

Student Learning Outcomes

- Students will demonstrate the ability to master general and specific theories, research methodologies and practices in mass communication and media arts studies.
- Students will demonstrate the ability to think critically about the interdisciplinary nature of mass communication studies.
- Students will demonstrate the ability to write a dissertation with well documented theoretical frameworks that break new ground in the disciplines of mass communication and media arts.
- Students will demonstrate the ability to use new analytical skills and decipher new concepts with the use of new media technologies in conducting research.
- Graduate students working as teaching and research assistants, with reputed faculty, will be prepared to launch their careers in academia and industry.

Curriculum

The Ph.D. in Mass Communication and Media Arts requires a minimum of 61 credit hours, including 10 credit hours of foundation courses, 9 credit hours of research methods courses, 18 credit hours of electives, and a 24-credit hours dissertation. All course work counting towards the degree must be at the 500-level.

A maximum of two independent study courses (MCMA 591, MCMA 594, and/or MCMA 596), for six credit hours total, can be counted toward the doctoral degree.

Foundation (12 Credit Hours)

- JRNL 508: Conceptual Foundations of Research Strategy (3 CH)
- JRNL 514: Theories of Mass Communications and Media (3 CH)
- Two semesters of JRNL 588: Graduate Colloquium

Research Methods Courses (9 Credit Hours)

Nine Credit Hours of research methods courses must be taken. These required courses are:

- JRNL 531: Critical Research Methods in Media Arts (3 CH)
- JRNL 532: Quantitative Research Methods in Mass Communication (3 CH)
- JRNL 534: Qualitative Research Methods (3 CH)

Electives (18 Credit Hours)

Six elective courses must be taken, selected in consultation with the student’s doctoral committee and the Director of Graduate Studies.

Students must pass a first-year review after a formal presentation at the Graduate Student Research Symposium in Spring Year 1.

Students need to complete the course requirement, then take the comprehensive exams. These written exams are administered by four faculty members, followed by an oral defense of the written answers. Generally, these exams are taken in Fall semester of Year 3.

Dissertation (24 Credit Hours)

- MCMA 600: Dissertation (24 CH): Proposal and Defense

Students are required to form a doctoral committee of five members (one of whom must be from outside of the college) in whose presence they must pass an oral defense of a dissertation proposal. Students are then required to collect and analyze the data and write a dissertation. The final paper is reviewed by the committee, and candidates are required to defend their work at a final meeting with the doctoral committee and all those interested in listening to the presentation.

Sample Curriculum Map

Fall Year 1 (9 Credit Hours)

- JRNL 508: Conceptual Foundations of Research Strategy (3 CH)
- JRNL 514: Theories of Mass Communication and Media (3 CH)
- JRNL 588: Graduate Colloquium (3 CH)

Spring Year 1 (9 Credit Hours)

- One or Two Research Methods Courses -AND/OR-
- One or Two Ph.D. Elective Courses
- JRNL 588: Graduate Colloquium (3 CH)

Fall Year 2 (9 Credit Hours)

- One Research Methods Course (3 CH)
- Two Ph.D. Elective Courses

Spring Year 2 (9 Credit Hours)

- One or two Research Methods Courses -AND/OR-
- One or two Ph.D. Elective Courses

There is a required presentation at the graduate student symposium in Spring Year 2.

Preferred Ph.D. in Mass Communication and Media Arts Electives

- JRNL 506: Law and Policy of Mass Communication
- JRNL 507: Media Management
- JRNL 509: Media Ethics
- JRNL 538: Critical Analysis of Discourse
- JRNL 553: History and Theory of Media Arts
- JRNL 561: Media, Social Movements, and Social Change
- JRNL 563: Globalization and the Media
- JRNL 565: Strategic Advertising Management
- JRNL 567: International Advertising
- JRNL 587: Critical Social Media Studies
- MCMA 535: Topics in Textual Analysis
- MCMA 552: Special Topics in Media Studies
- MCMA 564: Political Economy of Media
- MCMA 576: Gender, Sexuality and Media
- MCMA 577: Topics in Race and Media
- MCMA 585: Pedagogy and Professorial Skills

However, other graduate-level courses in the College of Arts and Media are allowed, as deemed appropriate by the faculty committee and Director of Graduate Studies. We also encourage students to work with their faculty advisors to seek out graduate-level coursework in other programs where different perspectives will enhance our students' learning.

Mass Communication and Media Arts Courses

JRNL400 - Media History Development of American news institutions with an emphasis on cultural, technological, and economic backgrounds of newspapers, magazines, radio, television, websites, and social media. Current press structures and policies will be placed in historical perspective. Credit Hours: 3

JRNL403 - Media Sales Provides a historical perspective of media and sales philosophies and tactics grounded in business ethics. Students learn and apply relationship selling techniques enabling them to become media sales professionals. Prerequisite: JRNL 302 and JRNL 304 with a grade of C or better. Credit Hours: 3

JRNL404 - Advanced Media Strategies and Planning Provides an understanding of the factors that influence media strategy. Emphasis will be placed on advanced concepts such as building reach patterns, new trends and tools and calculating effective frequency levels, in order to develop an effective media plan. Introduces media planning for the web and other new media options. Prerequisite: JRNL 304 with a grade of C or better. Credit Hours: 3

JRNL406 - Advertising Campaigns Conceptual synthesis and practical application of business, research, media and creative principles used in the formation of persuasive messages. Includes the development of a complete campaign for a specific advertiser. Includes all relevant target audience contact points (e.g., advertising, sales promotion, marketing public relations, event marketing, packaging) and both written and oral presentation of the campaign. Prerequisite: JRNL 304 and JRNL 405 with grades of C or better. Credit Hours: 3

JRNL407 - Social Issues and Advertising Analysis of social issues involving advertising; economic relationships, government and self-regulation, cultural effects, influence on media content and structure, role in democratic processes, international comparisons and the stereotyping of women, minorities and other audience segments. Credit Hours: 3

JRNL409 - Specialized Topics in Advertising/IMC New developments in advertising and integrated marketing communications. Topics change each term. Repeatable up to three times as long as the topic changes. Students should check specific topic and any special requirements and prerequisites before enrolling. Credit Hours: 3

JRNL411 - Public Policy Reporting Continued development of reporting skills with emphasis on the reporting of public policy issues and on use of statistics, the analysis of computerized data bases, and advanced techniques for the investigation of complex stories. Prerequisite: JRNL 311 or consent of instructor. Credit Hours: 3

JRNL412 - Intermediate Photojournalism This course expands on the fundamentals of photojournalism learned in JRNL 313. Students will explore adding elements of audio, video or flash and other lighting techniques to their images. Students will learn about changes, challenges and the ethical obligations of working photojournalists. Prerequisite: JRNL 313 or consent of instructor. Lab fee: $42. Credit Hours: 3

JRNL414 - Picture Story and Photographic Essay Production of photographic stories and essays for newspapers, magazines and news media presentations. Students discuss, research, photograph, design and write several stories and essays, while studying the work of influential photojournalists. Prerequisite: JRNL 313 or consent of instructor. Lab fee: $42. Credit Hours: 3

JRNL416 - Critical and Persuasive Writing The roles and responsibilities of the editor, editorial writer, and opinion columnist with emphasis upon editorial writing and critical thinking. Editorial problems, methods, policies, style and the fundamentals of persuasion and attitude change form the basis for study. Prerequisite: JRNL 311. Credit Hours: 3

JRNL417 - Freelance Feature Writing Identification, research and application of creative writing techniques in producing feature articles for various media. Students analyze reader appeal as well as feature story structure and methods of marketing features to various audiences and publications. Prerequisite: JRNL 310. Lab fee: $42. Credit Hours: 3

JRNL434 - Media Ethics (Same as PHIL 434) Explores the moral environment of the mass media and the ethical problems that confront media practitioners. Models of ethical decision-making and moral philosophy are introduced to encourage students to think critically about the mass media and their roles in modern society. Credit Hours: 3

JRNL435 - Advanced Graphic Communication Continues development of message design skills. Emphasizes creative solutions to the display of complex content in a wide variety of media. Prerequisite: JRNL 335 or consent of instructor. Lab fee: $46. Credit Hours: 3

JRNL436 - Multimedia Publication and Design This course continues the exploration of using computer based technologies for presentation of information to the wide audience using the interactive capabilities of the internet and other new media. Focus is on organization of information, and the production of multimedia files in a networked environment. Includes discussion of topics including intellectual property, libel, and other matters of concern to an interactive publisher. Prerequisite: JRNL 396 with a grade of C or better. Course fee: $42. Credit Hours: 3

JRNL481 - Sports Reporting Sports reporting requires two essential ingredients: the ability to write compelling prose and a good grip on news gathering and reporting techniques. This course emphasizes both and utilizes students' interest in sports to advance their reporting skills and while preparing them for sports reporting positions in the media industry. Prerequisite: JRNL 310. Credit Hours: 3

JRNL495 - Proseminar Selected seminars investigating media problems or other subjects of topical importance to advanced journalism and advertising majors. Seminars will be offered as the need and the interest of students demand. Restricted to College of Arts and Media majors with 4th Year standing or consent of instructor. Credit Hours: 1-6

JRNL500 - Media as Social Institutions Provides an introduction to major issues involving media in contemporary societies. Multi-disciplinary in nature, the course introduces major theoretical perspectives used in reviewing media productions and activities and the relationships among media organizations and practitioners and other institutions of society. Credit Hours: 3

JRNL506 - Law and Policy of Mass Communication Focuses on free expression in journalism and entertainment across the media. Topics may include news gathering techniques, intellectual property, the Internet, and governmental regulation. The course pays special attention to the tension between what is legal and what is ethical. Credit Hours: 3

JRNL507 - Media Management Analysis of a variety of media industries, including industry structures, and the industry processes of media development, production, and distribution. Attention to management of media companies across sectors as the industry adjusts to economic and technological change. Credit Hours: 3

JRNL508 - Conceptual Foundations of Research Strategy Analysis and evaluation of conceptual frameworks underlying empirical research strategies, positivist, textual and qualitative, commonly used in media and internet research. Issues in multi-method research strategies are reviewed. Ethical implications are debated. Credit Hours: 3

JRNL509 - Media Ethics Overview of ethics philosophies and accountability tools for the mass media. Areas to be studied include journalism reviews, ethics codes, ombudsmen, media critics, news councils, and public/civic journalism. Covering issues in journalism, photojournalism, public relations, advertising, new media, and "infotainment. Credit Hours: 3

JRNL511 - New Media Production Investigate how the Internet works, explore relationships among design, technology, and user experience while developing web sites, information architectures, interface behaviors, and navigation systems. Topics include: HTML & XHTML authoring, Cascading Style Sheets, Javascript, open source software, and incorporating sound, video, and images into web pages. Issues of privacy, legal and ethical responsibilities for consumers and producers of web content. Credit Hours: 3

JRNL513 - Advanced Photojournalism Emphasis on in-depth photo journalistic reporting. Students research, write and photograph picture stories. Examines ethics, history and social role of photojournalism domestically and internationally. Digital imaging and an introduction to full-motion video and other multimedia storytelling tools. Students who have completed JRNL 413 are not eligible to enroll. Equipment fee: $100. Credit Hours: 3

JRNL514 - Theories of Mass Communication and Media An advanced theoretical engagement with the field of mass communication research, media studies, and media arts. The course covers principal theoretical approaches, including the empiricist, positivist paradigm in mass communication research; critical media studies; film and television studies; and cultural studies. Credit Hours: 3

JRNL515 - Sports Photojournalism Students develop skills in producing, editing, and captioning high-quality feature and action photographs from live sporting events. Students will learn how sports

photography has developed over the last century. Students who have completed JRNL 415 are not eligible to enroll. Credit Hours: 3

JRNL516 - Networked Art History, theory, and practice of digital media as an online art form. Examination that results in students producing art work in linear and non-linear hypermedia narrative, network conceptualism, and generative software. Issues include identity, location, collaboration, surveillance, hacktivism, tactical media, immersion, game design, media synthesis. Lab fee: $75. Credit Hours: 3

JRNL517 - Multi-Platform Storytelling Students write and produce short fiction or non-fiction stories using digital media. Emphasis on storytelling development and story structures, and advancing one's technical skills across multiple media platforms. Projects will be incorporated into multiple delivery platforms such as the web, download and/or social media. Students will experience editorial production of artifacts gathered as they shape a variety of media into stories for delivery on web via class magazine and social media. The productions will target various platforms, from web to mobile devices. All students will build on a range of production skills extending beyond reporting, writing, photography, graphics, audio capture and video shooting. Course fee: $50. Credit Hours: 3

JRNL522 - Sound Art Studio This studio-based course offers students the opportunity to explore sound as a medium of artistic practice and intellectual inquiry. Assignments for the course emphasize how and why sound art is created in a variety of modalities including: installation, performance and improvisation. The course is also a forum for the exploration of contemporary and historic approaches to sound art through phonography, radio art, DIY electronics and other platforms. During the semester, listening and critique sessions will be used to evaluate student creative responses. Additionally, written responses to assigned readings will also be used to help facilitate discussions and critiques. Equipment Usage & Lab fee: $75. Credit Hours: 3

JRNL523 - Topics in Broadcast News This is a special production topics in studio production and practices course for MFA's in Media Arts that focuses on specialized production techniques, topics, techniques, and formal approaches to media making. The course offers the opportunity to gain new techniques and build skills through the use of potentially unfamiliar production equipment and approaches. The class encourages students to explore the edges of their disciplines by providing a focused framework for formal investigation and experimentation. Equipment Usage & Lab fee: $75. Credit Hours: 3. Credit Hours: 3

JRNL524 - Topics in Investigative Practices The course will use a topical starting point for critical study of the histories and philosophies associated with various investigative journalism procedures and practices. Course fee: $75. Credit Hours 3. Credit Hours: 3

JRNL531 - Critical Research Methods in Media Arts This course introduces students to critical and interpretive research methods and techniques for the study of media arts and culture. It focuses on interdisciplinary approaches and covers a range of humanities-based methods and theoretical perspectives. Credit Hours: 3

JRNL532 - Quantitative Research Methods in Mass Communication Advanced exploration of quantitative research methods to write a professional article suitable for publication or a chapter in an academic thesis. Covers methods such as sampling, surveys, experiments, content analysis, and statistics. Focuses on research design, formulating research questions, reviewing and applying appropriate literature in the field, hypothesis formulation, data acquisition, and discussion and analysis of results. Credit Hours: 3

JRNL534 - Qualitative Research Methods An introduction to the intellectual underpinnings, epistemology, and methodologies of qualitative research. The course focuses on critical and interpretive approaches to researching media industry structures, artifacts, audiences, and producers. Credit Hours: 3

JRNL537 - Introduction to Mass Communication Research Foundations course to introduce MA and MS students to the conceptual practices of research. Students will learn how to evaluate primary and secondary sources, and use this research to write papers and reports. The course demonstrates the steps of a research project: writing a proposal, reviewing the literature, designing the research

instruments, collecting data, and analyzing results. The course introduces qualitative and quantitative research methods. Credit Hours: 3

JRNL538 - Critical Analysis of Discourse Critical Discourse Analysis is a theory-based methodology which takes as its unit of analysis the entire 'utterance' (e.g. news bulletin, newspaper article, Facebook posting, a hashtag). Its methods are closer to literary and rhetorical criticism than the quantitative word count of content analysis. This methodology allows the research to unveil ideological motivations in language use and in images, and can be applied to most forms of media texts including social media and video games. Credit Hours: 3

JRNL540 - Documentary Journalism The Documentary film has a rich history in America. This course will cover the history of the American Documentary form. Emphasis on connections between critical theory and media production Students will embrace the conceptual and hands-on process of researching, writing and producing independent documentary video, focusing on critical arts practice. Credit Hours: 3

JRNL543 - Media Arts Studio Seminar A forum for the pursuit of creative projects in the media arts. May be repeated as topic changes. Restricted to CMCMA MFA or PMMM major or consent of instructor or director of Graduate Studies in Mass Communication and Media Arts. Laboratory fee: $50. Credit Hours: 1-3

JRNL545 - Producing the Sports Talk Show This course is an intensive hands-on production class. Students will produce two half-hour studio shows with edited features that will broadcast on WSIU-TV. Advanced field production techniques will be used when creating edited features. Students who have completed JRNL 445 are not eligible to enroll. Credit Hours: 3-6

JRNL549 - Professional Documentary Practice Production students will work with experts from a variety of specializations across campus to produce short form documentaries for broadcast on WSIU. A comprehensive overview of producing successful programs for the industry taking the topic from scripting to filming to editing. Advanced video or audio production skills are required. Credit Hours: 3

JRNL552 - Special Topics in Media Studies This course provides an in-depth study and discussion of selected topics in media studies. Topics vary and will be announced in advance. This course may be repeated when the topic differs. Credit Hours: 3

JRNL553 - History & Theory of Media Arts A survey of media history, from oral storytelling and cave paintings to social media and video games. Situates media in their historical contexts, with special attention to articulations among media technologies, aesthetic forms, cultural practices, and social formations. Analyzes media practices through foundational and contemporary theories from media studies and its interdisciplinary interlocutors. Credit Hours: 3

JRNL561 - Media, Social Movements, and Social Change Social change" is a multi-dimensional concept and yet also a bedrock of democracy. Much more than an act or action, social change is a process of negotiation between those who have and those who do not. This course is a theoretical and practical exploration of both mainstream and alternative media's role in political and social movements and their push for social change. Numerous scholars have theorized the social change potential of mediated communication and mass production, and these theories of social change have important implications for critical arts practice and the study of media and the media industries. The objective of the course is to join theories of social change with the interests of the students, allowing them flexibility and freedom to develop their current projects in the area of social change. Credit Hours: 3

JRNL563 - Globalization and the Media Debates about globalization from historical, theoretical, and critical perspectives. The major uses of communication technologies in international economic, political and cultural processes. Topics include regional and global trends, trade regimes, global policy bodies and policy issues; global media influence. Credit Hours: 3

JRNL565 - Strategic Advertising Management Problem solving through strategic advertising communications and integrated marketing techniques, including product research, branding, public relations, sales and promotion, social media, and direct media campaigns. The focus is on business strategy and planning. Students will concentrate on targeted, creative digital media strategies to execute an integrated marketing campaign for a local or national client. Credit Hours: 3

JRNL567 - International Advertising An investigation of how organizations market in Marshall McLuhan's 'Global Village'. Students will consider how political, social, economic, cultural, and technological factors influence advertising around the world. Explorations of how big data and artificial intelligence create advertising opportunities on multiple digital and social media platforms. Students will learn theories, business models, data analytics, branding, and explore case studies of major global brands. Credit Hours: 3

JRNL568 - Social Media Theory and Practice Explores social media from various perspectives. Topics will cover history and development of social media, social advertising/marketing, citizen journalism, social media and health communication, and other issues related to social media such as privacy, gaming, interface design, identity, etc. Students will gain hands-on experience with social media. Credit Hours: 3

JRNL576 - Sports and the Media This course will expose students to the rapidly expanding and complex world of sports business, with an emphasis on sports communication and promotion. Also the transformation of sports media in relation to economic, regulatory, and technological transformations. Students who have completed JRNL 488 are not eligible to enroll. Credit Hours: 3

JRNL577 - Advanced Investigative Reporting This advanced course in investigative and enterprise reporting delves into the techniques and strategies essential for impactful journalism. Students will refine their skills in obtaining and analyzing public records and data, conducting interviews with reluctant sources, managing complex information, and drafting and self-editing to produce a polished first draft. Students who have completed JRNL 477 are not eligible to enroll. Credit Hours: 3

JRNL584 - Supervised Independent Studio Supervised Independent Studio provides a critical foundation for students by establishing a formal structure for critiques of the student?s work that takes place over the course of a semester. Credit Hours: 6. Credit Hours: 6

JRNL586A - Professional Media Preparation Pre-production work for the M.S. media project. Directed by a committee of three, the chair of which must be a member of the graduate faculty in the School of Journalism and Advertising. Students must present and defend the proposal for their media project to the committee in a public forum. Restricted to students in the Professional Media M.S. degree program in SOJA. Lab fee: $50. Credit Hours: 3. Credit Hours: 3

JRNL586B - Professional Media Preparation Research Report Preparation work for the M.S. research report. Directed by a committee of three, the chair of which must be a member of the graduate faculty in the College of Mass Communication and Media Arts. Students must present and defend the proposal for the research report to the committee in a public forum. Restricted to students in the Professional Media M.S. degree program in CMCMA. Credit Hours: 3

JRNL587 - Critical Social Media Studies A theoretical, critical approach to the study of social media. Students identify critical media studies theories and concepts and apply them to the study of social media. Both diachronic and synchronic perspectives intersect within the course. Students learn the historical context in which social media platforms have evolved. Historical knowledge informs the analysis of contemporary case studies regarding social media policies, social media discourse and politics, social media ownership, and other pertinent topics. Credit Hours: 3

JRNL588 - Graduate Colloquium An introduction to graduate studies via encounters with the research and creative disciplines related to Mass Communication and Media Arts. Weekly meetings wherein individual faculty members introduce students to their research and creative work. The course will also serve as a forum in which students discuss their own research and creative work in an interdisciplinary setting. Guest lectures and presentations by visiting scholars and creative artists as become available. Setting for both the faculty and graduate student research and creativity colloquiums. Satisfactory/ Unsatisfactory (S/U) grading only. Credit Hours: 3

JRNL589A - MS Media Project Media project directed by a committee of three, the chair of which must be a member of the graduate faculty in the College of Mass Communication and Media Arts. The media project is a student's original creation which breaks new ground in mass communication and media arts. The media project must be submitted to the Graduate School. Students must present and defend their final media project to the committee in a public forum. Prerequisite: JRNL 586A with a grade of B- or

better. Restricted to students in the Professional Media M.S. degree program in CMCMA. Equipment fee: $50. Credit Hours: 3

JRNL589B - MS Research Report Research report directed by a committee of three, the chair of which must be a member of the graduate faculty in the College of Mass Communication and Media Arts. A research report synthesizes the existing literature on a specific topic in mass communication to enable the student to create new knowledge about the subject. The research report must be submitted to the Graduate School. Students must present and defend their final report to the committee in a public forum. Prerequisite: JRNL 586B with a grade of B- or better. Restricted to students in the Professional Media M.S. degree program in CMCMA. Credit Hours: 3

JRNL591 - Readings Supervised readings on subject matter not covered in regularly scheduled courses. Graduate students limited to three credits per semester. Consent of instructor. Credit Hours: 1-3

JRNL594 - Practicum Practicum Study, observation and participation in activities related to the fields of Mass Communication and the Media Arts such as internships in related professional organizations. Students who have completed JRNL 494 are not eligible to enroll. Credit Hours: 3

JRNL596 - Independent Study Supervised research or independent creative work, the area of study to be determined by the student in consultation with instructor. Consent of instructor. Credit Hours: 1-3

JRNL599 - Thesis Credit Hours: 1-6

JRNL600 - Dissertation Credit Hours: 1-32

JRNL601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

JRNL699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

MCMA521 - Expanded Cinema This course provides a foundation for creating media art that goes beyond the boundaries of traditional cinema and that challenges the conventional relationship between spectator and screen. Students will create immersive environments and live performances that integrate projections of still imagery with film, video, audio and audience participation. Special areas of concentration will include these histories: Futurism and Surrealism; Fluxus and Happenings; conceptual and performance art practices in the 1960s and 70s; relational aesthetics and social practice; tactical and interventionist media. Project assignments will be both individual and collaborative. Restricted to MFA students in MCMA or consent of instructor. Lab fee: $75. Credit Hours: 3

MCMA523 - Topics in Studio Practices This is a special production topics in studio production and practices course for MFA's in Media Arts that focuses on specialized production techniques, topics, techniques, and formal approaches to media making. The course offers the opportunity to gain new techniques and build skills through the use of potentially unfamiliar production equipment and approaches. The class encourages students to explore the edges of their disciplines by providing a focused framework for formal investigation and experimentation. Equipment Usage & Lab fee: $75. Credit Hours: 3

MCMA524 - Topics in Interdisciplinary Practices This hybrid MFA studies and practice course will use a topical starting point for critical study of the histories and philosophies associated with social and scientific movements and paradigms through media and art histories, cultures, and practices. Readings, guest lectures, and field trips delve into the semester theme and contribute to the generation of media art developed through the strategic framework of each artist's practice. Equipment Usage & Lab fee: $75. Credit Hours: 3

MCMA535 - Topics in Textual Analysis This class examines methods of textual analysis in the media arts with references to their historical, theoretical, and practical contexts. Credit Hours: 3

MCMA543 - Media Arts Studio Seminar A forum for the pursuit of creative projects in the media arts. May be repeated as topic changes. Restricted to CMCMA MFA or PMMM major or consent of instructor or director of Graduate Studies in Mass Communication and Media Arts. Equipment Usage & Lab fee: $50. Credit Hours: 1-3

MCMA548 - MFA (Master of Fine Arts) Projects Supervised independent creative work in media arts, the exact nature of which is to be determined in consultation with the MFA faculty member. Consent of instructor. Equipment usage fee: $50. Credit Hours: 1-9

MCMA552 - Special Topics in Media Studies This course provides an in-depth study and discussion of selected topics in media studies. Topics vary and will be announced in advance. This course may be repeated when the topic differs. Credit Hours: 3

MCMA559 - MFA Studio Art Practice This course is an interdisciplinary forum in which students develop their media arts practice, learn, and implement critique skills and expand their practice as media artists. It is repeated five times, and is taken each in semester of enrollment in the MFA degree program. As students progress through the first year in the program, they are expected to expand their practice within a variety of media arts practices and gain a deeper understanding of the aesthetic and conceptual development of their work in preparation for the first-year review. As students continue through the iterations of the class, they are expected to develop clearly articulated positions about the aesthetic, historical, and theoretical contexts of their work. Restricted to MFA students in the College of Arts and Media, or via consent of instructor and the MCMA Director of Graduate Studies. Equipment Usage & Lab fee: $150. Credit Hours: 6

MCMA564 - Political Economy of Media Addresses the intersections of politics, economics, and social structures that underpin media arts and industries at global and national levels. Emphasizes the relationship between theories and methods. Credit Hours: 3

MCMA576 - Gender, Sexuality and Media This course critically examines the role and potential impact of the media in enabling, facilitating, and challenging social constructions of gender, gender expression, and sexual identities in U.S. society and globally. We will go far beyond the common discussions of problematic media representations of female beauty and male violence to use theories of gender, gender expression, sexual identity, and gender-based violence to understand contemporary media production and representations. We will explore how objects, social practices, government policies, and even nations can be gendered, and how this functions to create and maintain interlocking systems of oppression. Global in scope, this class will enable us to look within but also well beyond the U.S. to better understand the impact of specific ways of gendering in popular culture and the media's role in this process. Credit Hours: 3

MCMA577 - Topics in Race and Media An in-depth study of the relationship between race and media through the lens of a specific topic. Common themes include critical race theory and ideologies of race, raced representation in media texts, racial and ethnic diversity in media industries, and media as a contested site in the struggle for racial justice. May be repeated when the topic differs. Credit Hours: 3

MCMA582 - Game Narratives Teaches students the core ideas and practices of game narratives. It covers: a) The conceptual fundamentals of theories of game narrative design; b) The technical and organizational process of creating a narrative game. This includes designing and implementing a narrative game using an appropriate software tool. While game narrative is at the center of this course, the skills and knowledge acquired in this class are applicable to broad range of design-centric fields and contexts. Credit Hours: 3

MCMA583 - MFA Graduate Colloquium The MFA Graduate Colloquium is an introduction to graduate studies through encounters with various media artists and researchers. During weekly meetings, individual faculty members introduce students to their research and creative work. The course will also serve as a forum in which students discuss their own research and creative work in an interdisciplinary setting. Presentations by guest lecturers and visiting artists are also a component of this class and are scheduled at the discretion of the instructor. Two semesters of the MFA Graduate colloquium are required of all graduate students in the MFA program in MCMA. Credit Hours: 3

MCMA585 - Pedagogy and Professorial Skills A practicum course in which students learn the theories, craft, and art of teaching. Topics include course design, lecturing, leading of seminar discussions,

assessment, grading strategies, writing and grading essay exams, formulating writing assignments and strategies for responding to student work to produce transformations in learning. Conceptual strategies for how and why to teach in-person and online synchronously and asynchronously. The course also covers skills required to enter the job market in academia. Topics include how to build a research career, how to apply for an academic job, how to successfully negotiate a phone interview and an on-campus interview, and how to succeed as an early assistant professor. Credit Hours: 3

MCMA599A - MFA Thesis Thesis requirements may be satisfied only by a creative thesis for the M.F.A. degree in Mass Communication and Media Arts. Minimum of six hours required for the M.F.A. degree in MCMA. Graded S/U. Restricted to students in the M.F.A. degree program. Lab fee: $75. Credit Hours: 1-6

MCMA599B - MA Thesis Thesis requirements may be satisfied only by a written thesis for the M.A. in Media Theory and Research in the College of Mass Communication and Media Arts. Minimum of three hours required for the M.A. degree. Graded S/U. Restricted to students in the M.A. degree program in CMCMA. Credit Hours: 3

MCMA600 - Dissertation Minimum of 24 hours to be earned for the Doctor of Philosophy degree. Credit Hours: 1-12

MCMA601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours dissertation research or the minimum thesis or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

RTD403 - Lighting for Television Covers typical lighting situations encountered in the field of television. Practical exercises are used extensively. Prerequisite: C or better in RTD 365A or concurrent enrollment. Restricted to RTD majors. Lab fee: $55. Credit Hours: 3

RTD405 - Media Economics Focus on economic and financial forces affecting the media industries. Study of the economic practices and impacts of corporate mergers and synergies, global integration of media firms, multi-stream revenue generation, barriers to entry and regulatory constraints. Special approval needed from the instructor. Credit Hours: 3

RTD450 - Television Documentary Production and Technique An overview of the development of various types, styles, and schools of major documentary production including analysis of American and International documentaries. Students will also research, write, and produce several short-form documentaries. Prerequisite: C or better in RTD 365A or consent of instructor. Restricted to RTD majors and 4th Year standing. Lab fee: $55. Credit Hours: 3

RTD455 - Oral History, Storytelling, and Media (Same as HIST 498) This course will develop an appreciation of the field of oral history, methodological concerns and applications. Students will learn about the oral history process, including interview preparation and research, interview technique, the nature and character of evidence, transcribing, and legal and ethical concerns. Restricted to 3rd Year or 4th Year standing. Credit Hours: 3

RTD457 - Media Marketing The core issues of marketing media products in a variety of contexts, such as launching a television program or series, opening a film, introducing an Internet website or application. Attention to branding and media planning, including developing an online marketing strategy. Special approval needed from the instructor. Lab fee: $45. Credit Hours: 3

RTD461 - Visual Effects in Post This course teaches the understanding and creation of contemporary visual effects work. We will cover both the science and art of visual effects covering motion graphic design principles (including typography), traditional techniques (storyboarding, mattes, masks, adjustment layers), chromakey compositing, 2D graphic animation, and CGI motion matching for 2D and 3D shots. Production workflows and client management will also be covered. The skills learned will be useful in pursuing a career in many media industries, including television, cinema, and games. Restricted to 3rd Year and 4th Year standing. Special approval needed from the instructor. Lab fee: $50. Credit Hours: 3

RTD463 - Sound Art II This course allows students to explore sound as an art form. During the semester, students create original sound works and learn hands on approaches to technology, which include

building low cost microphones. Experimental sound synthesis and original approaches to creative sound will be explored as well as methods of collaboration and exhibition. Special approval needed from the instructor. Lab fee: $55. Credit Hours: 3

RTD464 - Audio Documentary and Diversity (Same as WGSS 464) This course is the creation of short and long form audio documentaries by students, regardless of production background. Introduces students to basic production techniques and diversity considerations during the making of a documentary. This course uses qualitative methods to investigate an issue or to document an event, with an emphasis on observation and interview techniques. Topics will explore the role of gender, race, ethnicity and class during the planning, gathering and production stages of the documentary. Open to non-majors. Lab fee: $55. Credit Hours: 3

RTD465 - Advanced Television Production Instruction and practical experience in the development of programming for television. Students will produce individual and/or small group projects for broadcast and follow the projects through from concept to completion. Prerequisite: C or better in RTD 365A or consent of instructor. Restricted to RTD majors and 4th Year standing. Lab fee: $55. Credit Hours: 3

RTD466 - Motion Graphics Students build skills in visualization and design for motion graphics through a series of practical projects that include the creation of animated graphic packages, titles, sequences and short animations. Course guides the students in honing messages for visual works and covers best practices for working with clients and workflows for motion graphics production. Recommended: RTD 331 or equivalent graphics experience. Lab fee: $50. Credit Hours: 3

RTD467 - Global Media Global media history, main theories, and current developments. The significance of global trends for local and regional media and cultures. Restricted to 3rd Year or 4th Year standing or consent of instructor. Credit Hours: 3

RTD469 - Video for Non-Majors Basic shooting and editing to students interested in using video for purposes other than professional television production, such as education, business, or Web page development. The course surveys video formats and applications. Students produce projects using editing and special effects. Credit not given to RTD majors. Special approval needed from the instructor. Lab fee: $55. Credit Hours: 3

RTD476 - Creative Audio Producing This course puts the student in the role of recording producer, including responsibility for all decision-making during project development and production. Includes selection of material, budgeting, contracts, scheduling, performances, and all aspects of recording. Emphasis is placed on communication with clients, artists and engineers. Related elements include publishing, copyright and contracts. Prerequisite: MUS 375 or RTD 375, or consent of instructor. Lab fee: $55. Credit Hours: 3

RTD479 - Multi-Camera Field Production Concentration on the techniques, conventions and implementation of live-event, multi-camera production in the field, including concerts, awards shows, and sports. Prerequisite: C or better in RTD 365A and RTD 365B or consent of instructor. Lab Fee: $55. Credit Hours: 3

RTD480 - Emerging Media Examination of developments in emerging media, including Internet applications, mobile media, and gaming, among others. Exploration of the impact of emerging media on traditional media cultures and economies. Restricted to 4th Year standing or consent of instructor. Credit Hours: 3

RTD487 - Animation I: Modeling In this course, students will gain a solid foundation in creating 3D computer graphics using industry standard computer software and hardware. Through analysis and practice, students will develop an understanding of the principles of 3D modeling, lighting, texturing and rendering. Conceptual design and professional practices will also be addressed. Skills learned in this course will prepare students for the 3D Animation II class. Lab fee: $55. Credit Hours: 3

RTD488 - Animation II: Animation & Visual EFX This intermediate course builds upon the skills learned in the 3D Animation I course, and will focus on narrative development, motion design and visual effects generation using industry standard practices. Topics include key frame animation, inverse kinematics,

and visual effects using dynamics. A term project utilizes the creative and technical skills explored in class. Prerequisite: C or better in RTD 487 (3D Animation I). Lab fee: $55. Credit Hours: 3

RTD489 - Electronic Media Workshop Advanced work in various areas of electronic media, such as Gender and Media, Children and Media, Blaxploitation, Television in the US. Special approval needed from the instructor. Lab fee: $55. Credit Hours: 2-9

RTD490 - Animation III: Production Studio This advanced course builds upon the skills mastered in the 3D Animation I and II courses. Students walk through the 3D animation production cycle to produce a high-quality 3D animation suitable for portfolio exhibition. Class critiques and project analyses are used to direct students through the production process. This course advances students' knowledge of industry-standard practices. Prerequisite: C or better in RTD 487 or RTD 488. Lab fee: $55. Credit Hours: 3

RTD492 - Advanced Electronic Media Studies Workshop Advanced topics in Media Studies such as Children and Media, Gender and Media, Race and Media. Restricted to 3rd Year and 4th Year standing or consent of instructor. Credit Hours: 3

RTD496 - Sound Design This course examines in detail the relationship of sound and moving images. It traces intertwined histories, revealing important collaborations and technological developments that set precedents for both film and video. While the primary focus of this course is the artistic creation of soundtracks, we will also explore musical scoring and orchestration as utilized by film and television composers. Students will learn about and create sound designs, Foley sound and mix to picture sessions. Special approval needed from the instructor. Lab Fee: $55. Credit Hours: 3

Mass Communication and Media Arts Faculty

The graduate faculty of the college consists of members of the School of Journalism and Advertising and School of Media Arts. The faculty offer graduate courses leading to the following degrees: Master of Arts in Media Theory and Research, Master of Science in Professional Media and Media Management Studies, Master of Fine Arts in Mass Communication and Media Arts, and the Doctor of Philosophy in Mass Communication and Media Arts.

Graduate Faculty in Cinema

Bursell, Cade, Professor, Cinema Production, M.F.A., San Francisco State University, 2002; 2003. Cinema Production, queer cinema, experimental cinema.

Kapur, Jyotsna, Professor, Cinema Studies, Ph.D., Northwestern University, 1998; 1998. Feminist and Marxist analysis of media, globalization, children’s film and consumer culture, documentary and ethnographic film, the German and Japanese new wave and Indian cinema.

Metz, Walter, Professor, and Acting Associate Dean and Interim Director of Graduate Studies, Film Criticism, Ph.D., University of Texas, Austin, 1996; 2009. Contemporary film and television criticism and theory, literature and film, science and film, post-war American culture.

O'Brien, Heather, Assistant Professor, Cinema Production, M.F.A., California Institute of the Arts, 2013; 2020. Essay film, minority representation, and documentary.

Phillips, Mike, Clinical Assistant Professor, Media Studies, Ph.D., The Graduate Center of the City University of New York, 2018; 2019. American and transnational popular culture, film genre, historical fiction, African American cinema, and intermediality.

Rowley, R. William, Associate Professor, Cinema, M.F.A., University of Iowa, 1974; 2000. Cinema production and post-production, screenwriting, observational; documentary, intermedia arts.

Spahr, Robert, Associate Professor and Interim Chair Department of Radio, Television, and Digital Media, Media Arts, M.F.A., Parsons School of Design, New York City, 1991; 2009. Explores the Internet using code-based automated art, live art performance, drawing, painting, sculpture and time-based media.

Zhou, Hong, Associate Professor, Cinema Production, M.F.A., York University, Toronto Canada, 2000; 2008. Film and video production, cinematography, Chinese cinema, surrealist cinema.

Emeriti Faculty

Boruszkowski, Lilly A., Associate Professor, Emerita, M.F.A., Northwestern University, 1980.

Covell, Michael D., Assistant Professor, Emeritus, M.F.A., Ohio University, 1975.

Gilmore, David A., Associate Professor, Emeritus, M.F.A., Ohio University, 1969.

Kolb, Gary P., Professor, Emeritus, M.F.A., Ohio University, 1977.

Logan, Fern, Associate Professor, Emerita, M.F.A., School of the Art Institute of Chicago, 1993.

Roddy, Jan P., Associate Professor, Emerita, M.F.A., University of Illinois, 1987.

Swedlund, Charles A., Professor, Emeritus, M.S., Illinois Institute of Technology, 1961.

Tudor, Deborah, Associate Professor, Emerita, Ph.D., Northwestern University, 1992.

Graduate Faculty in Journalism

Babcock, William A., Professor, Media Ethics, Ph.D., Southern Illinois University Carbondale, 1979; 2008. Media ethics, public policy reporting.

Barrett, Anita J. (Stoner), Visiting Assistant Professor, Journalism and English Creative Writing, M.F.A., Syracuse University, 1995; 2005. Web production and content management systems, multimedia, revenue models for journalism.

Dolan, Mark, Associate Professor, Photojournalism, M.A., Syracuse University, 1995; 2008. Visual and interactive communication, photojournalism.

Freivogel, William H., Professor, Media Law, J.D., Washington University Law School, 2001; 2006. Journalism, media law, public affairs and policy.

Han, Dong, Associate Professor, Media and Communication, Ph.D., University of Illinois, 2011; 2012. Intellectual property and media, medical history and political economy, international communication and communication technology.

Karan, Kavita, Professor, Advertising and Marketing, Ph.D., University of London, 1994; 2009. Political communication, advertising and market research, international communication, media and children, health communication.

McClurg, Scott, Professor, Political Science, Ph.D., Washington University, 2000; 2001. Political participation, public opinion, electoral behavior, political geography, spatial statistics, and campaign dynamics.

Ryoo, Yuhosua, Assistant Professor, Advertising, Ph.D., University of Texas at Austin, 2019; 2019. The intersection of digital advertising, medial psychology, and prosocial behavior, individual, social, and situational factors of digital and social media.

Thompson, Jan, Professor and Director of the School of Journalism and Advertising, Documentary production, M.G.S., Roosevelt University, 1998; 2000. Video production, documentary, sports production.

Emeriti Faculty

Atwood, L. Erwin, Professor, Emeritus, Ph.D., University of Iowa, 1965.

Frith, Katherine T., Professor, Emerita, Ph.D., University of Massachusetts, 1985.

Gruny, C. Richard, Assistant Professor, Emeritus, J.D., University of Illinois, 1959.

Jaehnig, Walter, Associate Professor, Emeritus, Ph.D., University of Essex, 1974.

Lowry, Dennis, Professor, Emeritus, Ph.D., University of Iowa, 1972.

Shidler, Jon A., Associate Professor, Emeritus, M.S., Roosevelt University, 1980.

Spellman, Robert L., Jr., Associate Professor, Emeritus, J.D., Cleveland State University, 1977.

Stone, Gerald C., Professor, Emeritus, Ph.D., Syracuse University, 1975.

Graduate Faculty in Radio, Television, and Digital Media

Brookshire, Cody, Assistant Professor, Music Composition, DMA, University of Georgia, 2018; 2020. Music composition, sound art/soundscapes, sound design, electronic music, audio engineering, audio/music technology, audio/music production, arts collaboration, immersive audio, spatialized sound.

Brooten, Lisa B., Associate Professor, Media Studies, Ph.D. Ohio University, 2003; 2002. Media and globalization, gender, alternative media, social movements, political communication, interpretive/critical research methods, ethnography.

Burns, David, Associate Professor, Digital Media Arts and Animation, M.F.A., Parsons School of Design, 2001; 2005. 3D computer animation, media arts practices, technology, culture, and society, memory and post-memory.

Kreider, Wago, Associate Professor, Media Production, M.F.A., Rutgers University, 2002; 2006. Experimental and documentary media production, sound studies and production, cinematic histories, architectural and environmental studies.

Lewison, Sarah, Associate Professor, Media Production, M.F.A., University of California, San Diego, 2001; 2007. Video art, social movements, environmental media, installation, live art and performance.

Motyl, H. D., Associate Professor and Interim Dean, Media Production and Screenwriting, M.F.A., Northwestern University, 1990; 2007. Film/Video production and screen writing, narrative, gay representation.

Needham, Jay, Professor, Audio Production, M.F.A., California Institute of the Arts, 1989; 2003. Video, film, digital audio production, and electro-acoustic music.

Padovani, Cinzia, Associate Professor, Media Studies, Ph.D. University of Colorado, 1999; 2005. Historical approaches to political economy, public service broad-casting, international communication, social movements and the media.

Pape, Jennifer, Assistant Professor of Practice, M.F.A., Southern Illinois University Carbondale, 2017. Music composition and performance, audio documentaries, radio dramas, and sound art.

Perkins-Buzo, Reid, Assistant Professor, Media Arts, M.F.A., Northwestern University, 2004; 2014. 2D/3D animation, game development, virtual reality, augmented reality, expanded reality, spherical (360°) video production and interactive media.

Sphar, Robert, Associate Professor and Interim Chair Department of Radio, Television, and Digital Media, Media Arts, M.F.A., Parsons School of Design, New York City, 1991; 2009. Explores the Internet using code-based automated art, live art performance, drawing, painting, sculpture and time-based media.

Thompson, Jan, Professor and Director of the School of Journalism and Advertising, Documentary Production, M.G.S., Roosevelt University, 1988; 2000. Video production, documentary, sports production.

Emeriti Faculty

Downing, John D. H., Professor, Emeritus, Ph.D., London School of Economics and Political Science, 1974.

Gher, Leo, Associate Professor, Emeritus, M.S., Southern Illinois University, 1980.

Hochheimer, John L., Professor, Emeritus, Ph.D., Stanford University, 1986.

Johnson, Phylis, Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 2003.

Keller, Kenneth R., Associate Professor, Emeritus, M.TV., University of Illinois, 1966.

Lemish, Dafna, Professor, Emerita, Ph.D., Ohio State University, 1982.

Meehan, Eileen R., Professor, Emerita, Ph.D., University of Illinois, 1983.

Podber, Jacob J., Associate Professor, Ph.D., Ohio University, 2001.

Mathematics

The School of Mathematical and Statistical Sciences offers graduate degree programs leading to the Master of Arts or Master of Science degree in mathematics and the Doctor of Philosophy degree in mathematics. Students in the masters program can choose from a rich assortment of courses in both pure and applied mathematics and statistics. Each master's degree candidate can either: (a) work closely with a professor in writing a research paper or thesis in an area of interest to the student, or (b) elect a non-research paper/non-thesis option. A double major at the masters level between mathematics and a related discipline is also an option. At the doctoral level, a student may specialize in any one of a large number of fields such as: algebra, applied mathematics, combinatorics, computational mathematics, control theory, differential equations, geometry, numerical analysis, probability, or statistics. Interdisciplinary programs are also available.

The School is committed to providing a challenging and rewarding experience for its graduate students. The School offers individual attention and mentoring, strives to establish a friendly, supportive environment, and assists students as much as possible to achieve their professional goals. Graduate students have 24-hour access to the school computer lab which has thirty state-of-the-art PCs, all with internet connections. For more computing needs, students can access the University Unix computer servers from the lab.

Students interested in the teaching of mathematics may apply up to nine credit hours in graduate level courses in the School of Education toward the 30 credit hours required for the Master of Science degree in mathematics subject to approval of the Director of Graduate Studies.

Acceptance for graduate study in mathematics and subsequent continuation in the graduate program are at the discretion of the School of Mathematical and Statistical Sciences, provided that the student has been admitted to the Graduate School and meets the retention standards of the Graduate School. All applicants for the graduate program are considered for teaching assistantships. In order to be considered for a fellowship, the applicant must take the GRE exam, and all applicants are strongly encouraged to take the GRE General Test.

Prospective students are encouraged to contact the School of Mathematical and Statistical Sciences at mathgradinfo@siu.edu or the web site at math.siu.edu for application forms or additional information.

In addition to the general rules, regulations, and requirements of the Graduate School, the following specific requirements pertain to the degrees available in mathematics.

This program requires a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in Mathematics. Applicants must pay this fee by credit card.

Master of Arts (M.A.) in Mathematics

Students will be considered for acceptance into the M.A. in Mathematics degree program if they have completed with distinction the equivalent of a strong undergraduate major in mathematics. Once accepted, the requirements are as follows:

1. The candidate must complete a total of 30 credit hours of graduate-level mathematics courses of which at least 15 must be at the 500 level.
2. The candidate must complete with a grade of *B* or better each of the courses MATH 419, MATH 421, MATH 430, MATH 452, MATH 455, and at least two of the courses MATH 501, MATH 519, MATH 530. This requirement may be met in whole or in part by means of equivalent courses taken elsewhere.
3. The candidate must demonstrate the ability to read mathematical literature in French, German, or Russian. This may be certified by passing with a grade of *B* or better the research tool course 488 offered by the Languages, Cultures, and International Trade program, by passing with a score of 465 or better an examination given by the Educational Testing Service of Princeton, NJ, or by passing a suitable examination given by a faculty member from the School of Mathematical and Statistical Sciences who has been approved by the Director of Graduate Studies.
4. The candidate must prepare a thesis (three credit hours in MATH 599) under the supervision of a thesis adviser and two other faculty members from the school. This committee will be appointed by the Director of Graduate Studies after consultation with all those involved. Students hired as

teaching assistants are required to take MATH 514. Anyone planning a career involving collegiate level teaching is encouraged to take it.

The candidate must demonstrate satisfactory performance on a final oral examination covering the graduate course work and the thesis. This examination will be given by the three members of the candidate's committee and chaired by the thesis adviser. The student will pass the examination if the thesis adviser and at least one of the other two committee members so agree.

Master of Science (M.S.) in Mathematics

Students will be considered for acceptance into the M.S. in Mathematics degree program if they have completed an undergraduate major in mathematics or a strong undergraduate minor in mathematics together with a major in a closely related discipline. Once accepted, the requirements are as follows:

1. The candidate must complete a total of at least 30 credit hours of graduate credit approved by the Director of Graduate Studies, only 3 credit hours of which can be for MATH 598 or MATH 599, and at least 21 credit hours must be in courses (exclusive of MATH 411, MATH 412, MATH 511, MATH 512A-G and MATH 513A-I) offered by the School of Mathematical and Statistical Sciences. A master's student can take up to 9 credit hours outside mathematics, subject to approval of the Director of Graduate studies during the student's first semester in the master's program. Students hired as teaching assistants are required to take MATH 514. Anyone planning a career involving collegiate level teaching is encouraged to take it.
2. The candidate's program must include at least one 500-level mathematics course from two of the following three areas: (1) algebra and analysis; (2) geometry and topology; (3) probability and statistics. These requirements may be met in whole or in part by means of equivalent courses taken here or elsewhere prior to acceptance for graduate study in the program. Students who do not receive a *B* or better in MATH 452 on the first attempt are required to repeat it. Students who do not receive a *B* or better in MATH 419 on the first attempt are required to repeat it.
3. 3(a). Research Paper/Thesis Option. The candidate must prepare a research paper or thesis (3 credit hours in MATH 598 or MATH 599) under the supervision of a research adviser and two other faculty members from the School. This committee will be appointed by the Director of Graduate Studies after consultation with all those involved. --OR--
   3(b). Non-Research Paper/Non-Thesis Option. The candidate must take at least 15 credit hours at the 500 level, excluding MATH 595. These 15 credit hours must be approved by the Director of Graduate Studies. This option is not available for candidates who wish to continue on to a Ph.D. Candidates who are interested in pursuing a Ph.D. should take the Research Paper/Thesis Option. However, a candidate can easily move between options.
4. The candidate must demonstrate competence with the research tool of computer programming. This research tool requirement will be met by passing with a grade of *B* or better in CS 202 (catalog.siu.edu) or the equivalent, or by passing a suitable examination given by a faculty member from the School of Mathematical and Statistical Sciences who has been appointed by the Director of Graduate Studies.
5. The candidate must demonstrate satisfactory performance on a final oral examination covering the graduate course work and the research paper or thesis. This examination will be conducted by the three members of the candidate's committee and moderated by the research adviser. The student will pass the examination if the research adviser and at least one of the other two committee members so agree.

Accelerated Master's Program

Undergraduate mathematics majors at SIUC can enter an accelerated master's program in which 9 hours of mathematics courses will satisfy requirements in both the bachelor's degree and the master's degree, allowing for completion of both degrees after 5 (4+1) years. Because the master's degree requires 30 hours of coursework, students in the accelerated master's program only need 21 graduate hours after their senior year thereby making it possible to complete the master's degree in only one year. To enter this program, students initiate their intention while an active undergraduate at SIUC and must

have at least a 3.0 GPA in all coursework. Please see the Director of Graduate Studies in the School of Mathematical and Statistical Sciences for more information.

M.S. in Mathematics Tracks

Students can get a general M.S. in Mathematics or they can choose one of the four tracks listed below. Students should make their choice when they apply or during their first year in the M.S. in Mathematics program.

Applied Mathematics Track

Entrance requirements are the same as for the M.S. Students must take MATH 501, and two of MATH 502, 505, or 507. They should then write their thesis/research paper in the area of Applied Mathematics, unless they choose the non-thesis/non-research paper option.

Statistics Track

Entrance requirements are the same as for the M.S. Students must take MATH 580 and 584. They should then write their thesis/research paper in the area of Statistics, unless they choose the non-thesis/non-research paper option.

Computational Mathematics Track

Entrance requirements are the same as for the M.S. Students must take MATH 475, and both MATH 419 and 452 with a C or better. Students must take MATH 574 and CS 555. They should then write their thesis/research paper in the area of Computational Mathematics, unless they choose the non-thesis/non-research paper option.

Pure Mathematics Track

Entrance requirements are the same as for the M.S. Students must take MATH 421, 430 or 435, and 455, and both MATH 419 and 452 with a C or better. Students must take at least one of MATH 501, 519, or 530. They should then write their thesis/research paper in the area of Pure Mathematics, unless they choose the non-thesis/non-research paper option.

Doctor of Philosophy (Ph.D.) in Mathematics

Students will be considered for acceptance into the doctoral program in Mathematics if they have completed with distinction a graduate program comparable to that required for a master's degree in mathematics, statistics, or computer science at SIUC. Additional evidence of outstanding scholarly ability or achievement (e.g., a high score on the advanced section of the Graduate Record Examination or published research papers of high quality) will lend strength to the application. Normally students will have completed MATH 419, MATH 421, MATH 430, MATH 452, and MATH 455 or their equivalent before entering the doctoral program in Mathematics; those who have not must make up any deficiencies during their first year in the Ph.D. in Mathematics program. Once admitted, the requirements are as follows:

1. The candidate must pass the school qualifying examination within four regular semesters after admission. Qualifying examinations are given twice annually, in January and in August. The student will be allowed to take qualifying exams at most three times. A student who fails to pass the qualifying examination within the allotted time will be dropped from the Ph.D. in Mathematics program at the end of the semester. The qualifying exam consists of three parts, each covering a regularly scheduled 500-level MATH course exclusive of MATH 511, MATH 512A-G, MATH 513A-I, MATH 514, MATH 516A, MATH 516B, MATH 583, MATH 585 and MATH 586. The student will decide which courses to be tested on in consultation with the Director of Graduate Studies. Two of the three must be chosen from MATH 501, MATH 519, MATH 530 and MATH 580, and must include either MATH 501 or MATH 519. All three parts must be passed, but not necessarily all at once. One of the parts may be from a related field provided, if in judgement of the Graduate Programs Committee, it has mathematically rigorous content.

2. The candidate must demonstrate competence with a computer programming research tool. This requirement will be met by passing with a grade of *B* or better in CS 202 (catalog.siu.edu) or its equivalent, or by passing a suitable examination given by a faculty member from the School of Mathematical and Statistical Sciences who has been appointed by the Director of Graduate Studies.
3. MATH 501 and MATH 519 or their equivalent with a *B* or better are required courses for all doctoral students in the general (non-track) Ph.D. program. The candidate must complete a major area (12 credit hours) and two minor areas (six credit hours each). The course work in the major and minor areas must be at the 500-level and must be exclusive of the courses used to satisfy the qualifying examination. Normally the major and minor areas will be based on courses currently taught in the school. However, one of the minor areas may be taken outside the school, subject to the approval of the Director of Graduate Studies. With regard to the major and two minor areas, at least one of the three must be in an applied area. The final definition of "applied" will be determined by the dissertation adviser. The following courses cannot be used to satisfy requirements of the Ph.D. in Mathematics program: MATH 400, MATH 401, MATH 402, MATH 403, MATH 404, MATH 411, MATH 412, MATH 511, MATH 512A-G, MATH 513A-I, and MATH 516A, MATH 516B.
4. The candidate must file a request with the Director of Graduate Studies to appoint a dissertation committee to supervise the remaining doctoral work. This committee shall consist of five members with the candidate's dissertation adviser as chair. At least one member of the committee must represent each of the minor areas, and the dissertation adviser and one other member will represent the major area. One member of the committee will be chosen from outside of the school. This committee will be appointed by the Director of Graduate Studies after consultation with the candidate, the proposed dissertation adviser, the School Director, and the other faculty members involved.
5. The candidate must pass a preliminary examination which can be either (i) a written and oral examination over the major area and one minor area chosen by the candidate, or (ii) an oral presentation on their proposed research. This will normally be done after satisfying the research tools requirement and within 15 months of passing the qualifying examination. This examination will be prepared, administered, and evaluated by the dissertation committee. Any member of the graduate faculty may attend the oral portion of the preliminary examination and (at the discretion of the committee chair) question the candidate. The candidate will pass the preliminary examination provided that four members of the committee including the chair so agree. A report on the examination will be included with the candidate's official academic records. In the event that the candidate's performance is unsatisfactory, the committee as a whole shall decide on the time and content of an appropriate re-examination. A candidate who fails the re-examination will be dropped from the doctoral program. In unusual circumstances a candidate who has passed the preliminary examination may wish to change the major area or dissertation adviser. This will be allowed if the Director of Graduate Studies and School Director so agree, in which case the dissertation committee will be reconstituted in an appropriate manner. The revised committee may then prescribe additional course work and require the candidate to retake the preliminary examination.
   In unusual circumstances a candidate who has passed the preliminary examination may wish to change the major area or dissertation adviser. This will be allowed if the Director of Graduate Studies and School Director so agree, in which case the dissertation committee will be reconstituted in an appropriate manner. The revised committee may then prescribe additional course work and require the candidate to retake the preliminary examination.
6. The candidate must be officially admitted to candidacy for the Ph.D. in Mathematics degree. This will be done after all of the above requirements have been met.
7. The candidate must complete a dissertation (representing at least 24 credit hours in MATH 600) under the supervision of the candidate's dissertation adviser. The dissertation adviser and the other four members of the dissertation committee will evaluate the quality of the completed work which must conform to high literary and scholastic standards and constitute an original and publishable contribution to mathematics. A final oral examination will be conducted by the dissertation committee. During this examination the candidate will first present the major results of the dissertation and then respond to questions. Any member of the University graduate faculty may attend and (at the discretion of the dissertation adviser) ask related questions. The dissertation will be accepted, provided the dissertation adviser and at least three of the other four members of the committee so agree.

Ph.D. in Mathematics Tracks

Students can get a general Ph.D. in Mathematics or they can choose one of the four tracks listed below. Students should make their choice when they apply or during their first year in the Ph.D. in Mathematics program.

Applied Mathematics Track

The entrance requirements are MATH 405, MATH 407, MATH 419, MATH 421, and MATH 452, or their equivalents. Students must take two of MATH 502, MATH 505, MATH 519, or MATH 507. For their Qualifying Exam they must take MATH 501 or MATH 519 and two of MATH 502, MATH 505, MATH 507, MATH 555, MATH 574, MATH 575, or MATH 580. They should then write their dissertation in the area of Applied Mathematics.

Statistics Track

The entrance requirements are MATH 419, MATH 421, MATH 452, and MATH 483, or their equivalents. Students must take MATH 580 and MATH 581. For their Qualifying Exam they must take MATH 580 and at least one of MATH 501, MATH 519, or MATH 581, as well as one of MATH 584 or MATH 575 if needed. They should then write their dissertation in the area of Statistics.

Computational Mathematics Track

The entrance requirements are MATH 419, MATH 421, MATH 452, MATH 449, and CS 451, or their equivalents. Students must take MATH 501, MATH 519, MATH 549, and MATH 574. For their Qualifying Exam they must take CS 555, one of MATH 501 or MATH 519, and one other 500-level MATH course (preferably MATH 549, MATH 574, or MATH 575). For their preliminary examination, computer science should be a minor area. They should then write their dissertation in the area of Computational Mathematics.

Pure Mathematics Track

The entrance requirements are MATH 419, MATH 421, MATH 430, MATH 452, and MATH 455, or their equivalents. Students must take MATH 501, MATH 502, MATH 505, MATH 519, MATH 555, and MATH 574 and one of MATH 520, MATH 525, MATH 526, MATH 530, or MATH 549. For their Qualifying Exam they must take at least two of MATH 501, MATH 519, MATH 530, or MATH 555 and the remainder, if needed, from MATH 502, MATH 505, MATH 520, MATH 525, MATH 526, MATH 574, or MATH 549. They should then write their dissertation in the area of Pure Mathematics.

Direct Entry into the Ph.D. in Mathematics Program

A prospective student without a masters degree can request direct entry into the Ph.D. in Mathematics program. They must meet the same coursework requirements and demonstrate that they have completed a research project in English. Students should be aware that this option reduces the amount of TA funding they can receive by 12 months.

Accelerated Entry into the Ph.D. in Mathematics Program

A current student in our masters in Mathematics program can request accelerated entry into the Ph.D. in Mathematics program once they have completed one year. They must meet the same coursework requirements and demonstrate that they have completed a research project in English. Students should be aware that the option reduces the amount of TA funding they can receive by 12 months.

Graduate Assistantship

University policy allows 24 months of graduate assistantships for masters students, 48 months for Ph.D. students with a masters degree, and 60 months for direct entry Ph.D. students. See the Admission Policies, Requirements, and Procedures tab for more information on financial assistance.

Certificate in Dual Credit Mathematics

This post-baccalaureate certificate allows an Illinois high school mathematics teacher with a Master's degree (in any field) to teach certain courses for college credit to high school students. An undergraduate degree in Mathematics, Mathematics Education, or a related field is required for admission. The program requires 18 credit hours of graduate level Mathematics courses. Many courses are available online.

For more information: mathgradinfo@siu.edu

Mathematics Courses

MATH400 - Interest Theory and Financial Derivatives This course examines financial mathematics and actuarial models for investments including interest, annuities, stocks, bonds, and mutual funds. Preparation for Exam FM. Prerequisite: MATH 250 with grade of C or better. Credit Hours: 4

MATH401 - Basic Long-Term Actuarial Mathematics This course examines actuarial models for life-contingent risks, primarily the insurance of life and long-term health. These models include liability calculations, annuities, and credit risk. Basic properties of survival models are covered. This course prepares students for Exam FAM-L. Prerequisites: MATH 400 and MATH 483 with C or better. Credit Hours: 3

MATH402 - Advanced Long-Term Actuarial Mathematics This course continues the examination of life-contingent risks begun in MATH 401, including multiple contingencies, multiple survivals, pensions, options, and the use of Markov models. This course prepares students for Exam ALTAM. Prerequisites: MATH 221 and MATH 401 with C or better. Credit Hours: 3

MATH403 - Basic Short-Term Actuarial Mathematics This course examines loss models including severity models, aggregate loss, estimation, ratemaking and reserving, and estimation. This course prepares students for Exam FAM-S. Prerequisite: MATH 483 with a grade of C or better. Credit Hours: 3

MATH404 - Advanced Short-Term Actuarial Mathematics This course continues the examination of short-term loss models begun in MATH 403, including estimation, credibility, and extremal value theory. This course prepares students for Exam ASTAM. Prerequisite: MATH 403 with C or better. Credit Hours: 3

MATH405 - Intermediate Differential Equations This course features the study of several sets of differential equations with the aid of computers. The equations are actual applications in biology, chemistry, economics, engineering, finance, medicine and physics. Where possible, problems will be chosen to match student's interests. Students from these areas are particularly welcome. Basic theory of differential equations is cited as needed. Prerequisite: MATH 305 with C or better. Credit Hours: 3

MATH407 - Partial Differential Equations Solution methods for linear partial differential equations arising in engineering and science. Topics include: the heat equation, the wave equation, Laplace's equation, separation of variables, boundary and initial value problems, uniqueness via the energy methods, the maximum principle and characteristics. Solutions to the vibrating string and dissipation of heat in a bar will be discussed. Prerequisite: MATH 251 and MATH 305 with C or better. Credit Hours: 3

MATH411 - Mathematical Topics for Teachers Variety of short courses in mathematical ideas useful in curriculum enrichment in elementary and secondary mathematics. May be repeated as topics vary. Does not count toward a mathematics major. Credit Hours: 1-6

MATH412 - Problem Solving Approaches to Basic Mathematical Skills Content of basic skills at all levels of education and the development of these skills from elementary school through college; emphasis on problem solving and problem solving techniques; determination of student skills and proficiency level. Credit may not be applied toward degree requirements in mathematics. Prerequisite: MATH 321 or CI 321. Credit Hours: 3

MATH417 - Applied Matrix Theory Selected applications of matrices to physics, chemistry and economics. This material is also useful for engineering and computer science. Topics include matrix

representation of symmetry groups, non-negative matrices and the subsidy problem, location of eigenvalues. Prerequisite: MATH 221 with C or better. Credit Hours: 3

MATH419 - Introduction to Abstract Algebra II A detailed study of polynomial equations in one variable. Solvable groups and the Galois theory of field extensions are developed and applied to extensions of the quadratic formula, proving the impossibility of trisecting an angle with only a straight-edge and compass, and to the basic facts about finite fields as needed in coding theory and computer science. Prerequisite: MATH 319 with C or better. Credit Hours: 3

MATH421 - Linear Algebra The extension of basic linear algebra to arbitrary scalars. The theory and computation of Jordan forms of matrices (as needed e.g., for certain diffusion equations). Inner products, quadratic forms and Sylvester's Law of Inertia. Prerequisite: MATH 221 with C or better. Credit Hours: 3

MATH425 - Introduction to Number Theory Properties of integers, primes, divisibility, congruences, quadratic forms, diophantine equations, and other topics in number theory. Prerequisite: MATH 319 with C or better. Credit Hours: 3

MATH430 - Introduction to Topology Study of the real line and the plane, metric spaces, topological spaces, compactness, connectedness, continuity, products, quotients and fixed point theorems. This course will be particularly useful to students who intend to study analysis or applied mathematics. Prerequisite: MATH 352 with C or better. Credit Hours: 3

MATH433 - Classical and Modern Geometry Introduction to the foundations of Euclidean and non-Euclidean geometries. Topics include synthetic approach (Euclidean geometry, axiomatic systems, constructions, proofs), symmetries (similarity, congruence and various transformations and their invariants), metric approach (distance), vector space approach (transformations and matrices, inner product), inversive geometry, projective geometry (art and math) and non-Euclidean geometries. Some applications in modern science, like Relativity Theory, may also be covered. Historical background and connections with other parts of mathematics, science and culture are important components of this course. Prerequisite: MATH 250 and MATH 302 with grades of C or better. Credit Hours: 3

MATH435 - Elementary Differential Geometry Introduction to modern differential geometry through the study of curves in R3. Local curve theory with emphasis on the Serret-Frenet formulas; global curve theory including Fenchel's theorem; local surface theory motivated by curve theory; global surface theory including the Gauss-Bonnet theorem. Prerequisite: MATH 221 and MATH 251 with C or better. Credit Hours: 3

MATH447 - Introduction to Graph Theory (Same as CS 447) Graph theory is an area of mathematics which is fundamental to future problems such as computer security, parallel processing, the structure of the World Wide Web, traffic flow and scheduling problems. It also plays an increasingly important role within computer science. Topics include: trees, coverings, planarity, colorability, digraphs, depth-first and breadth-first searches. Prerequisite: MATH 349 with C or better. Credit Hours: 3

MATH449 - Introduction to Combinatorics (Same as CS 449) This course will introduce the student to various basic topics in combinatorics that are widely used throughout applicable mathematics. Possible topics include: elementary counting techniques, pigeonhole principle, multinomial principle, inclusion and exclusion, recurrence relations, generating functions, partitions, designs, graphs, finite geometry, codes and cryptography. Prerequisite: MATH 349 with C or better. Credit Hours: 3

MATH450 - Methods of Advanced Calculus Multivariable calculus fundamental to continuum mechanics, differential geometry, electromagnetism, relativity, thermodynamics, etc. Includes: parametric curves and surfaces, inverse and implicit function theorems, contraction mapping and fixed point theorems, differentials, convergence of multivariate integrals, coordinate systems in space, Jacobians, surfaces, volumes and Green's, Gauss', and Stokes' theorems. Prerequisite: MATH 251 with C or better. Credit Hours: 3

MATH452 - Introduction to Analysis A rigorous development of one-variable calculus providing the tools necessary for understanding all other advanced courses in analysis. Topics include: sets, axioms for the real numbers, continuity, limits, differentiation, the Riemann integral, infinite sequences and series

of functions. Additional topics may include areas such as Riemann-Stieltjes integration or the analysis of multivariable functions. Prerequisite: MATH 352 with C or better. Credit Hours: 3

MATH455 - Complex Analysis with Applications Analysis of differentiable functions of a single complex variable. Introduces mathematical techniques used to analyze problems in the sciences and engineering that are inherently two dimensional. Topics include: the complex plane, analytic functions, the Cauchy-Riemann equations, line integrals, the Cauchy integral formula, Taylor and Laurent series, the residue theorem, conformal mappings, applications. Prerequisite: MATH 251 with C or better. Credit Hours: 3

MATH460 - Transformation Geometry Geometry viewed as the study of properties invariant under the action of a group. Topics include collineations, isometries, Frieze groups, Leonardo's Theorem, the classification of isometries of Euclidean and hyperbolic geometries. Recommended elective for secondary education majors in mathematics. Prerequisite: MATH 319 with C or better. Credit Hours: 3

MATH471 - Optimization Techniques (Same as CS 471) Introduction to algorithms for finding extreme values of nonlinear multivariable functions with or without constraints. Topics include: convex sets and functions; the arithmetic-geometric mean inequality; Taylor's theorem for multivariable functions; positive definite, negative definite, and indefinite matrices; iterative methods for unconstrained optimization. Prerequisite: MATH 221 and MATH 250 with C or better. Credit Hours: 3

MATH472 - Linear Programming (Same as CS 472) Introduction to finding extreme values of linear functionals subject to linear constraints. Topics include: recognition, formulation, and solution of real problems via the simplex algorithm; development of the simplex algorithm; artificial variables; the dual problem and duality theorem; complementary slackness; sensitivity analysis; and selected applications of linear programming. Prerequisite: MATH 221 with C or better. Credit Hours: 3

MATH473 - Reliability and Survival Models (Same as STAT 473) Introduction to statistical analysis of data on lifetime, including hazard functions and failure distributions; estimation and hypothesis testing in life testing experiments with complete as well as censored data. Prerequisite: MATH 480 or MATH 483 or STAT 483 with C or better. Credit Hours: 3

MATH474 - Time Series (Same as STAT 474) An introduction to time series: AR, MA and ARIMA models; estimation, time series models. Prerequisite: MATH 480 or STAT 480 or MATH 483 or STAT 483 with C or better. Credit Hours: 3

MATH475 - Numerical Analysis I (Same as CS 475) Introduction to theory & techniques for computation with digital computers. Topics include: solution of nonlinear equations; interpolation & approximation; solution of systems of linear equations; numerical integration. Students will use MATLAB to study the numerical performance of the algorithms introduced in the course. Prerequisites: MATH 221 and MATH 250 with C or better. Credit Hours: 3

MATH476 - Numerical Analysis II Continuation of MATH 475. Topics include: solution of ordinary differential equations; computation of eigenvalues and eigenvectors; and solution of partial differential equations. Students will use MATLAB to study the numerical performance of the algorithms introduced in the course. Prerequisites: MATH 305 and MATH 475 with a C or better. Credit Hours: 3

MATH480 - Probability, Stochastic Processes and Applications I Introduction to the central topics of modern probability including elementary stochastic processes; random variables and their properties; sum of independent random variables and the Central Limit Theorem; random walks; discrete time finite state Markov chains; applications to random number generators and image and signal processing. Also generating functions, conditional probability, expectation, moments. Prerequisite: MATH 250 with C or better. Credit Hours: 3

MATH481 - Probability, Stochastic Processes and Applications II Continuation of MATH 480. Thorough introduction to Markov processes and Martingales, including the laws of large numbers, classification of states, recurrence, convergence to the stationary distribution in Markov chains, birth processes, Poisson processes, stopping times, and the Martingale convergence theorem. Important and current applications will be included. Prerequisite: MATH 251 and MATH 480 each with C or better. Credit Hours: 3

MATH483 - Mathematical Statistics in Engineering and the Sciences (Same as STAT 483) Develops the basic statistical techniques used in applied fields like engineering, and the physical and natural sciences. Principal topics include probability; random variables; expectations; moment generating functions; transformations of random variables; point and interval estimation; tests of hypotheses. Applications include one-way classification data and chi-square tests for cross classified data. Prerequisite: MATH 250 with C or better. Credit Hours: 4

MATH484 - Applied Regression Analysis and Experimental Design (Same as STAT 484) Introduction to linear models and experimental design widely used in applied statistical work. Topics include linear models; analysis of variance; analysis of residuals; regression diagnostics; randomized blocks; Latin squares; factorial designs. Applications include response surface methodology and model building. Computations will require the use of a statistical package such as SAS. Prerequisite: MATH 221 and either MATH 483 or STAT 483, with grades of C or better. Credit Hours: 3

MATH485 - Applied Statistical Methods (Same as STAT 485) Introduction to sampling methods and categorical data analysis widely used in applied areas such as a social and biomedical sciences and business. Sampling methods topics include: simple random and stratified sampling; ratio and regression estimators. Categorical data analysis topics include: contingency tables; loglinear models; logistic regression; model selection; use of a computer package. Prerequisite: MATH 483 or STAT 483 with C or better. Credit Hours: 3

MATH486 - Statistical Computing (Same as STAT 486) This course covers Statistical Computing Software packages such as R and SAS; helps prepare students for SAS certification. Topics include obtaining and analyzing output for regression, experimental design, and generalized linear models. Prerequisites: MATH 484 or STAT 484, and CS 202 both with C or better. Credit Hours: 3

MATH490 - Topics in Mathematics Selected topics in mathematics chosen from such areas as: (a) Financial Mathematics, Mathematical Biology or Actuarial Mathematics; (b) Probability, Statistics or Stochastic Processes; (c) Mathematical topics not including Statistics, such as Operations Research, Cryptography and High Dimensional computing in Numerical Analysis, etc. May be repeated up to 3 times as topics vary. Special approval needed from the instructor. Credit Hours: 3

MATH492 - Industrial and Applied Mathematics Clinic Students will participate in a semester-long project to apply their mathematical knowledge to a problem supplied by a business, industrial, or community partner. Students will work in teams, and will engage in client contact, including a final report of their results to the client. Mathematical modeling, research, communication, and project management skills will be developed, along with core mathematical competency needed to solve the client problem. Prerequisites: MATH 221, MATH 483, and CS 202 with grades of C or better. Credit Hours: 3

MATH495 - Special Topics in Mathematics Individual study or small group discussions in special areas of interest under the direction of a member of the faculty. Special approval needed from the director and instructor. Credit Hours: 1-6

MATH501 - Measure and Integration This course is an introduction to measure theory and the Lebesgue integral. Its purpose is to develop many of the advanced mathematical tools that are necessary for the understanding of all other advanced courses in analysis. Topics will include: measures and measurable functions, Egoroff's theorem, the Lebesgue integral, Fatou's lemma, the monotone and dominated convergence theorems, functions of bounded variation and absolutely continuous functions, Lp-spaces, the Radon-Nikodm theorem, product measures, and Tonelli's and Fubini's theorems. Prerequisite: MATH 452. Credit Hours: 3

MATH502 - Functional and Linear Analysis This course is an introduction to infinite-dimensional spaces and their analysis. Topics include Hilbert and Banach spaces, separable and reflexive spaces, operators and their adjoints, and major theorems such as the Banach-Steinhaus, Open-Mapping, Closed Graph, Hahn-Banach, Riesz and matrix representation, Lax-Milgram, Arzela-Ascoli, Katos theorems. Spectral theory and applications to such areas as differential equations, Block iterations, quantum probability, fixed point theory or other areas are covered as time permits. Prerequisite: MATH 501 with a grade of B or better. Credit Hours: 3

MATH505 - Ordinary Differential Equations Existence and uniqueness theorems; general properties of solutions; linear systems; geometric theory of nonlinear equations; stability; self-adjoin boundary value

problems; oscillation theorems. Theory will be illustrated with computer simulation of several real-world problems. Prerequisite: MATH 452 and MATH 421 or consent of instructor. Credit Hours: 3

MATH506 - Advanced Topics in Ordinary Differential Equations Selected advanced topics in ordinary differential equations chosen from such areas as: stability, oscillations, functional differential equations, perturbations, boundary value problems. Special approval needed from the instructor. Credit Hours: 1-12

MATH507 - Partial Differential Equations This course introduces the student to the mathematical techniques that are used to analyze qualitative properties of solutions to partial differential equations that arise in engineering and the sciences. Topics studied will include: function spaces including Sobolev spaces; weak derivatives; the Sobolev and Poincar?nequalities; existence, uniqueness, and continuous dependence for model equations. Prerequisite: MATH 407 and MATH 501. Credit Hours: 3

MATH511 - Advanced Topics in the Teaching of Mathematics (Same as CI 529) Selected advanced topics in the teaching of mathematics chosen from such areas as: pedagogical theories; instructional strategies; applications of mathematics; problem solving. This course is counted by the Mathematics department only as part of an approved minor. Special approval needed from the instructor. Credit Hours: 3

MATH512A - Topics in Mathematics for Teachers of Elementary, Middle School and Junior High Mathematics-Abstract This course is counted by the Mathematics department only as part of an approved minor. Credit Hours: 1-3

MATH512B - Topics in Mathematics for Teachers of Elementary, Middle School and Junior High Mathematics-Geometry This course is counted by the Mathematics department only as part of an approved minor. Credit Hours: 1-3

MATH512C - Topics in Mathematics for Teachers of Elementary, Middle School and Junior High Mathematics-Probabil This course is counted by the Mathematics department only as part of an approved minor. Credit Hours: 1-3

MATH512D - Topics in Mathematics for Teachers of Elementary, Middle School and Junior High Mathematics-Sets, Lo This course is counted by the Mathematics department only as part of an approved minor. Credit Hours: 1-3

MATH512E - Topics in Mathematics for Teachers of Elementary, Middle School and Junior High Mathematics-Applicat This course is counted by the Mathematics department only as part of an approved minor. Credit Hours: 1-3

MATH512F - Topics in Mathematics for Teachers of Elementary, Middle School and Junior High Mathematics-Algebra This course is counted by the Mathematics department only as part of an approved minor. Credit Hours: 1-3

MATH512G - Topics in Mathematics for Teachers of Elementary, Middle School and Junior High Mathematics-History This course is counted by the Mathematics department only as part of an approved minor. Credit Hours: 1-3

MATH513A - Topics in Mathematics for Teachers of Secondary Mathematics- Abstract Algebra This course is counted by the Mathematics department only as part of an approved minor. Credit Hours: 1-3

MATH513B - Topics in Mathematics for Teachers of Secondary Mathematics- Geometry This course is counted by the Mathematics department only as part of an approved minor. Credit Hours: 1-3

MATH513C - Topics in Mathematics for Teachers of Secondary Mathematics-Probability and Statistics This course is counted by the Mathematics department only as part of an approved minor. Credit Hours: 1-3

MATH513D - Topics in Mathematics for Teachers of Secondary Mathematics-Sets, Logic and Number Systems This course is counted by the Mathematics department only as part of an approved minor. Credit Hours: 1-3

MATH513E - Topics in Mathematics for Teachers of Secondary Mathematics-Applications of Mathematics This course is counted by the Mathematics department only as part of an approved minor. Credit Hours: 1-3

MATH513F - Topics in Mathematics for Teachers of Secondary Mathematics-Analysis This course is counted by the Mathematics department only as part of an approved minor. Credit Hours: 1-3

MATH513G - Topics in Mathematics for Teachers of Secondary Mathematics- Discrete Mathematics This course is counted by the Mathematics department only as part of an approved minor. Credit Hours: 1-3

MATH513H - Topics in Mathematics for Teachers of Secondary Mathematics-Topology This course is counted by the Mathematics department only as part of an approved minor. Credit Hours: 1-3

MATH513I - Topics in Mathematics for Teachers of Secondary Mathematics-Computer Simulation This course is counted by the Mathematics department only as part of an approved minor. Credit Hours: 1-3

MATH514 - Teaching Undergraduate Mathematics Knowing mathematics is an insufficient qualification for teaching mathematics, and this course seeks to close that gap. In this course, we will explore the best practices in the teaching of mathematics to undergraduate students and apply this knowledge to particular problems of teaching mathematics at a mid-sized public university in the US. Credit Hours: 1

MATH516A - Statistical Analysis in the Social Sciences Descriptive statistics; graphic display of data; concepts of probability; statistical estimation, and hypothesis testing. Applications to social science data. This course does not give credit toward a mathematics major. Prerequisite: one year of high school algebra or equivalent. Credit Hours: 4

MATH516B - Statistical Analysis in the Social Sciences Matrix algebra; general linear model; multivariate statistics, ordinal and nominal measures of associations and causal modeling. Applications to social science data. This course does not give credit toward a mathematics major. Prerequisite: one year of high school algebra or equivalent. Credit Hours: 4

MATH519 - Algebraic Structures I Introduction to the basic techniques in the classification of finite groups, including homomorphism theorems, classification of finitely generated abelian groups, Sylow's theorems and classification of small groups, divisibility theory in rings, especially polynomial rings. Prerequisite: MATH 419 or consent of instructor. Credit Hours: 3

MATH520 - Algebraic Structures II Free modules, torsion modules, tensor products of modules, finitely generated modules over principal ideal domains, application of abelian groups, algebraic geometry, homological algebra and group cohomology. Prerequisite: MATH 519. Credit Hours: 3

MATH522 - Advanced Topics in Algebra and Number Theory Selected topics in modern algebra and number theory chosen from such areas as: group theory, commutative algebra, non-commutative algebra, field theory, representation theory, analytical number theory, algebraic number theory, additive number theory. Diophantine approximations, Dirichlet series and automorphic form. Special approval needed from the instructor. Credit Hours: 1-12

MATH525 - Analytic Number Theory Introduction to modern analytic techniques used in the study of quadratic forms, the distribution of prime numbers, Diophantine approximations and other topics of classical number theory. Prerequisites: MATH 425 and MATH 455 with grades of C or better. Credit Hours: 3

MATH526 - Algebraic Number Theory Introduction to the modern algebraic techniques used in the study of number theory. Advanced Galois Theory, algebraic integers, prime factorization of ideals, Dirichlet unit theorem, ramification theory, local fields, and other topics. Prerequisites: MATH 425 and MATH 419 with grades of C or better. Credit Hours: 3

MATH530 - Topology This course covers the basics of point-set topology, Urysohn's lemma, Tychonoff's theorem, the Barie category theorem, manifolds and the fundamental group. Prerequisite: MATH 430 or MATH 452 with a C or better. Credit Hours: 3

MATH531 - Algebraic Topology This course covers homotopy and homology groups, exact sequences, CW complexes, axioms of homology, and beginnings of cohomology. Prerequisite: MATH 530 with a C or better. Credit Hours: 3

MATH532 - Topics in Geometry and Topology Topics may include dynamical systems, topological groups, knot theory, complexity theory, uniform spaces and frames, differential and Riemannian geometry, voting theory and mathematical physics. Special approval needed from the instructor. Credit Hours: 1-12

MATH535 - Differential Geometry This course covers differential forms, curvature, connections, integration on manifolds and may include Riemannian geometry or Lie groups. Prerequisite: MATH 530 with a C or better. Credit Hours: 3

MATH540 - Convex Analysis The course develops the basic results on convex sets and functions which are extensively used in several areas of applied mathematics and in business and engineering. Both finite and infinite dimensional spaces will be discussed. Topics covered include separation theorems, extreme points and the Krein-Milman Theorem. For infinite dimensional spaces elementary aspects of locally convex spaces will be covered. Applications include inequalities, constrained optimization and minimax theory. Prerequisite: MATH 452 or consent of instructor. Credit Hours: 3

MATH549 - Combinatorial Theory This course will introduce the student to various advanced topics in Combinatorial theory that are basic to modern methods in applicable mathematics. Possible topics include: Enumeration, Polya-Burnside theory, DeBruijn sequences, Graph theory, Cayley's Theorem, Ramsey's Theorem, Hall's Theorem, Design Theory, Distinct representatives, Latin squares and Finite geometries. Prerequisite: MATH 449 or consent of instructor. Credit Hours: 3

MATH553 - Advanced Topics in Analysis and Functional Analysis Advanced topics in analysis and functional analysis from such areas as: harmonic analysis, approximation theory, integration theory, advanced complex variables, topological vector spaces, operator theory, Banach algebras, distribution theory. Special approval needed from the instructor. Credit Hours: 1-12

MATH555 - Complex Analysis We review the field of complex numbers, differentiability, series convergence and the Cauchy integral formula for functions of a single complex variable. We go on to study the properties analytic, entire, meromorphic, and harmonic functions. We develop rigorous proofs of the Maximum modulus theorem, the Riemann mapping theorem, the residue theorem, and the Weierstrass factorization theorem and related results. If time permits the gamma and Riemann zeta functions are presented. Prerequisite: MATH 455. Credit Hours: 3

MATH559 - Advanced Topics in Combinatorics Selected advanced topics in combinatorics chosen from such areas as: graph theory; combinatorial designs; enumeration; random graphs; finite geometry; coding theory; cryptography; combinational algorithms. Special approval needed from the instructor. Credit Hours: 1-12

MATH560 - Mathematical Finance The theory of stochastic processes, including integration, martingales, Brownian motion, difference equations and Ito's lemma, is developed and applied to problems in mathematical finance, such as dynamic asset and option pricing, modeling of financial derivatives and interest rates. The binomial tree method of Cox-Ingersoll-Rubinstein, and the models of Vasicek, Dothan, and others are developed. Stochastic numerical methods and related statistical procedures as used in computational finance are covered if time permits. Since this is an interdisciplinary course, students should contact the instructor about prerequisite knowledge. Special approval needed from the instructor. Credit Hours: 3

MATH566 - Continuum Mechanics This course will provide a rigorous development of the mechanics of solids and fluids. Topics will include: elements of tensor analysis; kinematics; balance of mass, linear momentum and angular momentum; the concept of stress; constitutive equations for fluid and solid bodies; and invariance of constitutive equations under a change in observer. Applications of continuum mechanics to the solution of problems in materials science will be included as time permits. Prerequisite: MATH 450 or MATH 452. Credit Hours: 3

MATH569 - Advanced Topics in Applied Mathematics Selected advanced topics in applied mathematics chosen from such areas as: continuum mechanics; electromagnetic theory; control theory; mathematical physics. Special approval needed from the instructor. Credit Hours: 1-12

MATH570 - Advanced Topics in Optimization Selected advanced topics in optimization and operations research chosen from such areas as: calculus of variations, optimal control theory, nonlinear programming, convex analysis, non-smooth analysis, new flows, advanced computer simulation, large scale linear programming. Special approval needed from the instructor. Credit Hours: 1-12

MATH572 - Advanced Topics in Numerical Analysis (Same as CS 572) Selected advanced topics in numerical analysis chosen from such areas as: approximation theory, spline theory; special functions; wavelets; numerical solution of initial value problems; numerical solution of boundary value problems; numerical linear algebra; numerical methods of optimization; and functional analytic methods. Special approval needed from the instructor. Credit Hours: 1-12

MATH574 - Approximation Theory A study of techniques for approximating functions by polynomials, trigonometric polynomials, polynomial splines, wavelets, etc. Topics include: existence, uniqueness and characterization of best approximations in normed linear spaces; projection methods for good approximation; the Weierstrass, Muntz-Szasz, and Stone-Weierstrass theorems; degree of approximation and the Jackson theorems; construction of optimal min-max and least squares approximation using rational functions, splines, wavelets. Students will use MATLAB to study the quality of various approximations developed in the course. Prerequisite: MATH 452, MATH 475, and MATH 421. Credit Hours: 3

MATH575 - Matrix Computations A practical introduction to modern numerical linear algebra. Topics include: vector and matrix norms; Householder, Givens and Gauss transforms; factorization methods for solving systems of linear equations with roundoff error analysis; QR and SVD methods for solving linear least squares problems; the QR algorithm for computing the eigenvalues of a matrix. Students will use MATLAB to study the algorithms developed in the course. Prerequisite: MATH 475 and one of MATH 406, MATH 421. Credit Hours: 3

MATH580 - Statistical Theory The course gives a rigorous introduction to statistical inference. Topics covered include statistical models; sufficiency and completeness; Cram?Rao bound; Rao-Blackwell theorem; best estimators; most powerful tests; likelihood ratio tests; elements of Bayes and minimax procedures. Prerequisite: MATH 483, or consent of instructor. Credit Hours: 3

MATH581 - Probability A rigorous, measure-theoretic introduction to probability theory. Principal topics include general probability spaces, product spaces and product measures, random variables as measurable functions, distribution functions, conditional expectation, types of convergence, characteristic functions and the Central Limit theorem, tail events and 0-1 laws, the Borel-Cantelli lemma, and the weak and strong law of large numbers. Prerequisite: MATH 501, or consent of instructor. Credit Hours: 3

MATH582 - Advanced Topics in Probability Selected advanced topics in probability chosen from such areas as: martingales, Markov processes, Brownian motion, infinitely divisible laws. Special approval needed from the instructor. Credit Hours: 1-6

MATH583 - Advanced Topics in Statistics Selected advanced topics in statistics chosen from such areas as: advanced linear models, advanced experimental design, multivariate statistical analysis, decision theory, advanced nonparametric theory. Prerequisite: MATH 483. Credit Hours: 1-12

MATH584 - Linear Models This course examines the theory of linear models with applications to the analysis of variance and regression and to the design of experiments. Least squares estimation, and testing for full rank and less than full rank models are covered. Prerequisites: MATH 221 and MATH 484 with grades of C or better. Credit Hours: 3

MATH585 - Multivariate Analysis This course examines the multivariate normal and elliptically contoured distributions, estimators of multivariate location and dispersion, Hotelling's T^2 test, MANOVA, multivariate regression, principal component analysis, factor analysis, canonical correlation analysis, discriminant analysis, and clustering. Prerequisites: MATH 483 and MATH 221 with grades of C or better. Credit Hours: 3

MATH586 - Statistical Computing and Learning This course covers Statistical Computing and Learning, including supervised and unsupervised learning, statistical computations in software packages such as R and SAS, loops, approximation of distribution functions, computation of maximum likelihood estimations, random number generation, bootstrap, Monte Carlo, permutation tests, and Bayesian techniques. Prerequisites: MATH 483 and MATH 221 with grades of C or better. Credit Hours: 3

MATH590 - Contemporary Mathematics Research Lectures on various mathematical topics of current research interest by members of the department and by distinguished visitors. Special approval needed from the graduate adviser. Credit Hours: 1-6

MATH592 - Graduate Seminar Active participation in a seminar run by the School. Student is encouraged to present their research to the seminar at least once per semester. Graded S/U only. Special approval needed from the seminar organizer and the director of graduate studies. Credit Hours: 1-2

MATH595 - Individual Study Individual study supervised by a member of the continuing faculty. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-12

MATH598 - Master's Research Paper Minimum of three hours to be counted toward the Master of Arts or Science in Mathematics degree. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-6

MATH599 - Master's Thesis Minimum of three hours to be counted toward the Master of Arts or Science in Mathematics degree. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-6

MATH600 - PhD Dissertation Minimum of 24 hours to be earned for the Doctor of Philosophy degree in Mathematics. Special approval needed from the instructor. Credit Hours: 1-30

MATH601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

MATH699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Mathematics Faculty

Ban, Dubravka, Professor and Director, Mathematics, Ph.D., University of Zagreb, 1998; 2002. Algebra, representation theory, automorphic L-functions.

Bhatacharyya, Tumpa, Clinical Assistant Professor, PhD, Bowling Green State University, 2011; 2019.

Calvert, Wesley, Professor, Mathematics, Ph.D., University of Notre Dame, 2005; 2010. Mathematical logic and theoretical computation.

Castelli, Vina, Lecturer, M.S. Mathematics, Southern Illinois University, 2015;

Ceballos, Kristen, Lecturer, M.S. Mathematics, Southern Illinois University, 2011; 2012.

Choiy, Kwangho, Associate Professor, Mathematics, Ph.D., Purdue University, 2012; 2015. Number theory, automorphic forms and representation theory.

Giritharan, Kathirave, Lecturer, M.S. Mathematics, Southern Illinois University, 1990; 2019.

Gluck, Mathew, Assistant Professor, Mathematics, Ph.D., University of Florida, 2014; 2022. Partial differential and integral equations.

Kocik, Jerzy, Professor, Mathematics, Ph.D., Southern Illinois University, 1989; 2002. Differential geometry, Lie algebras, and geometry.

Lauderdale, Lindsey-Kay, Assistant Professor, Mathematics, Ph.D., University of Florida, 2014; 2022. Combinatorics and group theory.

Lowndes, Thara, Director Computer Based Learning, M.S. Mathematics, Southern Illinois University, 1996; 2004.

Nagrodski, Ron, Lecturer, M.S. Mathematics, Southern Illinois University, 1990; 2011.

Olive, David, Professor, Statistics, Ph.D., University of Minnesota, 1998; 1999. Applied robust statistics, regression graphics, and applied probability.

Omar, Ghada, Clinical Assistant Professor, Ph.D. in Applied Mathematics, Time domain, electromagnetism, and scattering; 2012.

Rajan, Suri, Lecturer, M.S., University of Illinois, 2011; 2015.

Rathnayake, Rasanji, Clinical Associate Professor, Ph.D. Southern Illinois University Carbondale, 2019; 2015.

Samadi, S. Yaser, Associate Professor, Statistics, Ph.D., University of Georgia, 2014; 2014. Multivariate and matrix time series analysis.

Schurz, Henri U., Professor, Mathematics, Ph.D., Humboldt University, 1997; 2001. Stochastic analysis, stochastic dynamical systems, mathematical finance.

Summers, Oneal, Lecturer, M.S. Mathematics, Southern Illinois University; 2024

Xiao, Mingqing, Professor, Mathematics, Ph.D., University of Illinois at Urbana-Champaign, 1997; 1999. Partial differential equations, dynamical systems, control theory and applications.

Xu, Dashun, Professor, Mathematics, Ph.D., Memorial University of Newfoundland, 2004; 2006. Mathematical biology.

Xu, Jianhong, Professor, Mathematics, Ph.D., University of Connecticut, 2003; 2005. Numerical analysis, matrix computations, matrix theory and applications.

Emeriti Faculty

Burton, Theodore A., Professor Emeritus, Mathematics, Ph.D., Washington State University, 1964; 1966.

Clark, Lane, Professor Emeritus, Mathematics, Ph.D., University of New Mexico, 1980; 1981.

Crenshaw, James A., Associate Professor Emeritus, Mathematics, Ph.D., University of Illinois, 1967; 1967.

Danhof, Kenneth, Professor Emeritus, Mathematics, Ph.D., Purdue University, 1969; 1969.

Dharmadhikari, Sudhakar, Professor Emeritus, Statistics, Ph.D., University of California, Berkeley, 1962; 1978.

Earnest, Andrew G., Professor Emeritus, Mathematics, Ph.D., Ohio State University, 1975; 1981.

Feinsilver, Philip, Professor Emeritus, Mathematics, Ph.D., New York University (Courant), 1975; 1978.

Foland, Neal E., Professor Emeritus, Mathematics, Ph.D., University of Missouri, 1961; 1965.

Grimmer, Ronald C., Professor Emeritus, Mathematics, Ph.D., University of Iowa, 1967; 1967.

Hooker, John W., Professor Emeritus, Mathematics, Ph.D., University of Oklahoma, 1967; 1967.

Hughes, Harry R., Associate Professor Emeritus, Mathematics, Ph.D., Northwestern University, 1988; 1989.

Jeyaratnam, Sakthivel, Professor Emeritus, Statistics, Ph.D., Colorado State University, 1978; 1981.

Kammler, David W., Professor Emeritus, Mathematics, Ph.D., University of Michigan, 1971; 1971.

Mark, Abraham M., Professor Emeritus, Mathematics, Ph.D., Cornell University, 1947; 1950.

McSorley, John, Professor Emeritus, Mathematics, Ph.D., University of Oxford, 1988; 2004.

Neuman, Edward, Professor Emeritus, Mathematics, Ph.D., University of Wroclaw, Poland, 1972; 1984.

Paine, Thomas B., Assistant Professor Emeritus, Mathematics, Ph.D., University of Oregon (Eugene), 1966; 1966.

Patula, William T., Professor Emeritus, Mathematics, Ph.D., Carnegie Mellon University, 1971; 1972.

Pedersen, Franklin D., Associate Professor Emeritus, Mathematics, Ph.D., Tulane University, 1967; 1965.

Pericak-Spector, Kathleen A., Professor and Distinguished Teacher Emerita, Mathematics, Ph.D., Carnegie Mellon University, 1980; 1981.

Redmond, Donald, Associate Professor Emeritus, Mathematics, Ph.D., University of Illinois, 1976; 1979.

Spector, Scot, Professor and Distinguished Scholar Emeritus, Mathematics, Ph.D., Carnegie Mellon University, 1978; 1981.

Sullivan, Michael C., Professor Emeritus, Mathematics, Ph.D., University of Texas at Austin, 1992; 1996. Topological dynamics.

Wallis, Walter D., Professor Emeritus, Mathematics, Ph.D., University of Sydney, 1968; 1985.

Wright, Mary H., Professor and Distinguished Teacher Emerita, Mathematics, Ph.D., McGill University, Montreal, Quebec, 1977; 1980.

Yucas, Joseph, Professor Emeritus, Mathematics, Ph.D., Pennsylvania State University, 1978; 1980.

Zeman, Marvin, Professor Emeritus, Mathematics, Ph.D., New York University, 1974; 1979.

Mechanical Engineering

Admission

Students seeking admission to the graduate program in mechanical engineering must meet the admission standards set by the Graduate School and have a bachelor's degree in engineering or its equivalent. A student whose undergraduate training is deficient may be required to take coursework without graduate credit.

This program requires a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in Mechanical Engineering. Applicants must pay this fee by credit card. Admission is also based on the following factors: grade point average of 3.00 or higher on a scale of 4.00 on the entire last undergraduate GPA earned at the time of application, class ranking, and faculty recommendation letters. GRE scores are required for admission. The minimum TOEFL score requirement for international applicants is 550 (paper-based) or 80 (computer-based).

Requirements

Each student majoring in mechanical engineering will develop a program of study with a graduate advisor and establish a graduate committee of at least three members at the earliest possible date. A student may, with the approval of a graduate faculty committee and the School Director, also take courses in other branches of engineering, or in areas of science and business, such as physics, geology, chemistry, mathematics, life science, administrative sciences, or computer science. A thesis committee of at least three members will approve the thesis and the comprehensive oral exam.

For a student who wishes to complete the requirements of the M.S. in Mechanical Engineering degree with a thesis, a minimum of thirty hours of acceptable graduate credit is required. Of this total, eighteen credit hours must be earned in the School of Mechanical, Aerospace, and Materials Engineering. A minimum of 15 credit hours of coursework at the 500-level (excluding thesis) is required. Each candidate is also required to pass a comprehensive oral examination covering all of the student's graduate work, including thesis.

If a student prefers the non-thesis option, a minimum of thirty-six hours of acceptable graduate credit is required. The student is expected to take at least twenty-one credit hours within the School of Mechanical, Aerospace, and Materials Engineering, including no more than three credit hours of the appropriate 592 course to be devoted to the preparation of a research paper. A minimum of 15 credit hours of coursework at the 500-level (excluding thesis) is required. In addition, each candidate is required to pass a written comprehensive examination. An oral presentation of the paper may be required.

Each non-thesis M.S. in Mechanical Engineering student will select a minimum of three engineering graduate faculty members to serve as a graduate committee, subject to the approval of the School Director. The committee must include at least one member from one of the other engineering programs and will:

1. approve the student's program of study,
2. approve the student's research paper topic,
3. approve the completed research paper, and
4. administer and approve the written comprehensive examination.

Teaching or research assistantships and fellowships are available for qualified applicants. Additional information about the program, courses, assistantships, and fellowships may be obtained from the College of Engineering, Computing, Technology, and Mathematics or the School of Mechanical, Aerospace, and Materials Engineering.

Master of Science (M.S.) in Mechanical Engineering

Graduate work leading to the Master of Science degree in Mechanical Engineering is offered by the School of Mechanical, Aerospace, and Materials Engineering. The program is designed to provide advanced study in air pollution control, mechanical system dynamics and vibration, acoustics and signal processing, mass and heat transfer, coal conversion, electrochemical processes, thermal science, thermal systems design, solar systems design, chemical and biochemical processes, biomechanics, mechanical systems, computer-aided design, composite materials and ceramics, and tribology.

Doctor of Philosophy (Ph.D.) in Mechanical Engineering

The School of Mechanical, Aerospace, and Materials Engineering within the College of Engineering, Computing, Technology, and Mathematics at SIUC offers a Doctor of Philosophy degree in Mechanical Engineering. It is designed for students who desire positions requiring advanced preparation at the highest level with emphasis on theories of curriculum and instruction and in-depth preparation in research.

The Ph.D. program is supported by cutting-edge research projects conducted by nationally and internationally recognized mechanical engineering faculty members. The School has well equipped laboratories and computer facilities that are housed in a modern Engineering Complex that houses research laboratories, including facilities for advanced manufacturing, advanced friction studies, mechanics, thermal/fluid experimental setup, fluidized bed combustion, composite materials synthesis and analysis, low temperature and high temperature reactive and non- reactive processes, imaging and nondestructive analysis, and unconventional gas recovery and processing.

The Doctor of Philosophy degree in Mechanical Engineering is available for six fields of study that correlate with the School's core expertise. The areas of concentration are as follows:

1. Mechanical Systems and Design, including dynamics and vibrations, mechanical systems control, computational modeling and simulations
2. Advanced Manufacturing
3. Energy and Fluid/Thermal Systems, including fluid mechanics, thermal science, thermal systems design, combustion, transportation power systems, mass and heat transfer, computational modeling and simulations, and energy utilization and management
4. Material and Chemical Systems, including thermo-mechanical materials processing, composite materials and ceramics, tribology, micro-and nano-technology electrochemical processes, catalysis, chemical and biochemical processes and energy conversion systems, computational modeling and simulations
5. Biomechanics
6. Aerospace Engineering

Admission

Apply online to SIUC and mail original application materials to: Mechanical, Aerospace, and Materials Engineering, College of Engineering, Computing, Technology, and Mathematics, SIUC, Carbondale, IL 62901. There is a $65 application fee.

Admission to the program requires a Master of Science degree in Mechanical Engineering or a related field with a GPA of 3.25/4.00 or higher on the entire last undergraduate GPA earned at the time of application. Applications for admission must include the following: M.S. thesis abstract, a statement of

interest, bachelor's and master's degree transcripts, GRE scores, and three letters of recommendation. International applicants should also include a photocopy of the page(s) of your passport showing your name, date of birth, and country of citizenship and a TOEFL score of 550 (paper score) or an IBT score of 80 or an IELTS score of 6.5. Admission to the program is made by the Mechanical Engineering Graduate Committee.

For accelerated entry into the Ph.D. program, a student must complete at least two semesters in residence in an M.S. program in a mechanical engineering-related field and complete a minimum of 18 hours of approved coursework with a minimum GPA of 3.75. Such entry is permitted only to superior students who have exhibited evidence that they are prepared to begin the research activities of doctoral-level study. In addition, the student must have GRE scores that are at or above the 50th percentile for both verbal component and analytical essay component and 80th percentile for the quantitative component, or a combined total percentile score of 180 or higher. In the case of a domestic student, an undergraduate GPA of 3.5 or higher is also a requirement. For an international student, a TOEFL score of 550 (paper score) or an IBT score of 80 or an IELTS score of 6.5 is an additional requirement. In exceptional cases, to substitute for the above-mentioned GRE and TOEFL score requirements, the student's current faculty advisor, with the approval of the school director, may submit a letter of recommendation for his/her student's accelerated entry into the Ph.D. program. The student, having an accelerated entry into the Ph.D. program may not write an M.S. Thesis. In addition, 6 credit hours of course work of 500 level completed prior to his/her entry into the Ph.D. program may be counted toward the Ph.D. course requirement. In the rare event that the student getting an accelerated entry into the Ph.D. Program fails to pass the Ph.D. qualifying exam in two attempts, he/she will be allowed to complete an M.S. degree. Admission to the program is made by the Mechanical Engineering Graduate Committee.

Admission to the doctoral program also requires the identification of an initial graduate advisor for each student. This advisor will be responsible with the student for planning the student's course work according to the field of study within Mechanical Engineering described later.

Retention

Any prospective doctoral candidate with a grade point average of less than 3.25 and 20 semester hours of doctoral work will not be allowed to continue in the program and will not be re-admitted at a later date. Students must accumulate an overall grade point average of 3.50 for all doctoral work to qualify to take the qualifying examination.

Prior to the completion of 30 semester hours of course work, students meet with their major professors to determine whether or not to continue as doctoral students. Such matters as grade point average, progress in the program, course completion, motivation, general academic scholarship, and skills in writing and research are considered. A report is then made to the graduate committee and the school director. Students who are not making satisfactory progress or who violate the regulations of the school, college, or university may be dropped from the program.

Curriculum

A minimum of 26 semester hours of course work (including 2 hours of seminar) and 24 semester hours of dissertation research are required. The course work must be completed in 2 areas: field of study and program core. The student must complete a minimum of 15 hours of course work relevant to their field of study. The course work in the field of study is intended to provide depth in the student's area of research. The program core consists of 11 hours of course work. A dissertation must be completed in the student's area of research interest with the approval of the dissertation committee.

Program Core

The program core consists of 11 hours of course work: 6 hours in math, 3 hours in engineering or science, and 2 hours of seminar. The math courses to choose from: are all 500, except MATH 511, 512A-G, 513A-I, and 516A and 516B. The engineering courses to choose from are: ENGR 530—Engineering Data Acquisition: Theory and Practice, ENGR 540—Design of Engineering Experiments, ENGR 545—Advanced Numerical Methods in Engineering, ENGR 521—Probability and Stochastic Processes for Engineers. The science course could be any 500-level courses in Computer Science, Physics, Chemistry, or Geology, as approved by the student's advisor. The seminar course, ME 580, must be taken in two

separate semesters, each time as a one-hour course. It is recommended that the seminar classes be taken after the initiation of doctoral research or after candidacy is granted.

Guide for Core and Field of Study Courses

- Special Investigation course can be taken under ME 593 - Special Topics in Mechanical Engineering or ENGR - 590 Special Investigations in Engineering Science, and only 3 hours can be counted towards the minimum required 26 semester hours of course work.
- Students with an M.S. degree in Physics must take at least 9 hours of ME courses, one of which can be ENGR 590 or ME 593.
- Students with an M.S. degree in Physics from SIUC can substitute PHYS 500A and 500B - Mathematical Methods in Physics for six hours of math requirement in program core.
- Transfer credit will normally be given for some of the graduate level courses suitable to the program upon review by the Graduate Committee. Proficiency examinations may be authorized by the committee for areas in which questions of transfer credit arise. No credit will be given for industrial experience. A maximum of six hours of course work can be transferred in all cases due to residency requirement, which states that every student must complete at least 24 semester hours of approved course work at SIUC prior to taking the candidacy examination. Of the 24 hours, only 6 hours can be dissertation (ME 600) hours before candidacy.
- A student transferring credits from a master's program must have earned those credits over and above the required course work to obtain the M.S. degree in his/her institution. Credit cannot be transferred from master's degrees obtained from international institutions.

Qualifying Examinations

Upon completion of the field of study and core courses, the student may take the qualifying examination which has two components: written exam and oral exam. The examination in the field of study is organized and administered by at least three Mechanical Engineering faculty members (examining committee) including the student's advisor. The committee has to be approved by the program director before it conducts the examination. Normally, the examination can be conducted at any time during the year when classes are in session. In the written examination, the student is tested in at least two major topics of the field of study with an appropriate number of questions prepared by the members of the student's candidacy examination committee. Each student must score at least 70% in each major topic test in order to pass the written part of the candidacy examination. The oral exam, conducted by the examining committee, is held within two weeks of the written exam. In the oral examination, the student is tested again in the field of study by at least three candidacy examination committee members. If not successful, the committee may allow the student to repeat the whole or part of the examination one more time. The qualifying examination, in whole or in part, cannot be taken more than two times.

Candidacy

A Ph.D. student must satisfy all Graduate School requirements to become a candidate. Admission to candidacy requires: (a) successful completion of the qualifying examination (which satisfies the research tool requirement of the Graduate School) and (b) successful completion of twenty-four hours of credit (which satisfies the residency requirement of the Graduate School).

Acceptance to Ph.D. candidacy is contingent upon the completion of all courses with A or B grades and successful completion of a written exam and an oral exam in the student's field of study.

After the completion of the qualifying examination, copies of the graded tests, along with signoff sheets for both the written and oral examinations are submitted to the director of the Ph.D. program, who is also the Director of the School.

Dissertation

A dissertation must be written under the direction or co-direction of a MAME faculty member and approved by a dissertation committee consisting of at least five members (one outside the School of Mechanical, Aerospace, and Materials Engineering). The dissertation advisor must be chosen by the end of the student's first academic year. The dissertation committee should be formed after successful completion of the candidacy examination. The members of this committee need not be the same as the members of the candidacy examination committee. A dissertation research proposal must be approved by

the dissertation committee. Candidates will be required to present an acceptable dissertation describing original research performed with minimal supervision. Dissertation approval is based on a successful oral defense of the dissertation research and approval of the dissertation. This requires approval of at least 80 percent of the dissertation committee.

Following the admission to candidacy and upon completion of all required coursework, the candidate will prepare and submit a formal written dissertation proposal, defining the proposed research and the proposed line of inquiry. The candidate subsequently must make an oral presentation of the dissertation proposal to the members of the dissertation committee in an open forum. A public announcement of this event must be made at least five business days in advance.

In the framework of the oral presentation of the dissertation proposal, the candidate is expected to address and respond to any question (by the members of the committee) related to material covered by all the courses taken during his/her doctoral studies or to the background necessary for the specific area of the proposed research. In addition, the candidate is expected to defend the research methodology and the proposed line of inquiry.

The dissertation must be prepared in accordance with the “Guidelines for Dissertations, Theses, and Research Papers” of the SIUC Graduate School. Dissertation approval is based on successful defense of the research performed in terms of originality, relevance, and presentation (written and oral). This requires approval by at least 80% of the members of the dissertation committee.

Upon completion of the dissertation, which must demonstrate the ability of the candidate to conduct independent research, the committee will administer the final oral examination. The objective of the final oral examination, conducted in an open forum, will be the defense of the dissertation. Upon satisfactory completion of the dissertation and the final oral examination the committee will recommend the candidate for the doctoral degree.

Graduation Timeline

Although the time to completion of the doctoral program changes from individual to individual, the average completion time is about four years. The following outline shows the steps for completing the program, with links to various forms needed to show completion of the various stages of the program. Forms shown in italics are required by the Graduate School. The other forms are required by the College of Engineering, Computing, Technology, and Mathematics.

1. Admission to the program.
2. Students complete the core and concentration.
3. A candidacy (qualifying) exam committee, comprised of at least three faculty members and chaired by the advisor, is formed (Candidacy Committee Form).
4. Student takes the candidacy (qualifying) exam: first the written exam and within two weeks the oral exam. Advisor reports the exam results to the Director (Candidacy Exam Results Form). The advisor sends the form to the Director along with copies of the graded written exam. A candidacy request form is then sent to the Graduate School to request candidacy status for the student. The advisor, the student, and the Director sign this form (*Admit to Candidacy Form*).
5. A Ph.D. Committee, comprised of at least five faculty members (one of whom is from outside of MAME), and chaired by the advisor, is formed to guide the student in his/her dissertation research. (*Graduate Faculty Committee Approval Form*).
6. Student defends dissertation. The advisor sends the form to the Director along with a copy of the proposal (Dissertation Proposal Approval Form).
7. Student defends dissertation (*Oral Defense Form*). The Dissertation Approval Form is to be completed and deposited at the Graduate School (Dissertation Approval Form) to be printed on 25% cotton paper). A copy of this form must be filed at the School Office. The dissertation is to be submitted to the Graduate School electronically in pdf. For spring, summer, and winter graduation dates and deadlines, check the Graduate School website.

Suggested Coursework for the Different Fields of Study

The Doctor of Philosophy degree in Mechanical Engineering is available for six fields of study that correlate with the School’s core expertise. The fields of study are as follows:

1. Mechanical Design and Systems, including dynamics and vibrations, mechanical systems control, computational modeling and simulations
2. Advanced Manufacturing
3. Energy and Thermal/Fluid Systems, including fluid mechanics, thermal science, thermal systems design, combustion, transportation power systems, mass and heat transfer, computational modeling and simulations and energy utilization and management
4. Material and Chemical Systems, including thermo-mechanical materials processing, composite materials and ceramics, tribology, micro- and nano-technology electrochemical processes, catalysis, chemical and biochemical processes and energy conversion systems, computational modeling and simulations
5. Biomechanics
6. Aerospace Engineering

The selection of field of study courses is listed below.

Mechanical Design and Systems

Recommended Courses:

- ME 505-3 Vehicle Dynamics
- ME 535-3 Computer Aided Analysis of Mechanical Systems I
- ME 537-3 Nonlinear Vibrations
- ME 538-3 Applied Optimal Design and Control of Dynamic Systems
- ME 545-3 Intelligent Control
- ME 550-3 Contact Mechanics
- ME 551-3 Advanced Vibration
- ME 565-3 Finite Element Analysis (same as CE 551)
- ME 566-3 Advanced Mechanics of Materials (same as CE 557)
- ME 581-3 Microrobotics

Suggested Alternatives:

- ME 549-3 Wave Propagation, Impact and Explosions
- ME 569-3 Non-Destructive Evaluation
- ME 593-3 Special Topics in Mechanical Engineering

Suggested Electives:

- ME 582-1 Experimental Research Tools
- ME 593-3 Special Topics in Mechanical Engineering
- ENGR 522-3 Intellectual Property and Commercialization

This is only a partial list and students may take classes from other departments to meet graduation requirements with the approval of their advisor and the MAME Director.

Advanced Manufacturing

Recommended Courses:

- ME 535-3 Computer Aided Analysis of Mechanical Systems I
- ME 538-3 Applied Optimal Design and Control of Dynamic Systems
- ME 545-3 Intelligent Control
- ME 550-3 Contact Mechanics
- ME 565-3 Finite Element Analysis (same as CE 551)
- ME 566-3 Advanced Mechanics of Materials (same as CE 557)
- ME 581-3 Microrobotics
- ME 586-3 Additive Manufacturing

Suggested Electives:

- ME 582-1 Experimental Research Tools

- ME 593-3 Special Topics in Mechanical Engineering
- ENGR 522-3 Intellectual Property and Commercialization

This is only a partial list and students may take classes from other departments to meet graduation requirements with the approval of their advisor and the MAME Director.

Energy and Thermal/Fluid Systems

Recommended Courses:

- ME 500-3 Advanced Engineering Thermodynamics
- ME 501-3 Transport Phenomena
- ME 502-3 Conduction Heat Transfer
- ME 503-3 Convective Heat Transfer
- ME 507-3 Combustion Phenomena
- ME 508-3 Nano/Microscale Energy and Heat Transfer
- ME 509-3 Thermal Radiation Heat Transfer
- ME 531-3 Reaction Engineering and Rate Processes
- ME 562-3 Environmental Degradation of Materials
- ME 568-3 Alternative Energy and Fuel Resources

Suggested Electives:

- ME 582-1 Experimental Research Tools
- ME 593-3 Special Topics in Mechanical Engineering
- ENGR 522-3 Intellectual Property and Commercialization

This is only a partial list and students may take classes from other departments to meet graduation requirements with the approval of their advisor and the MAME Director.

Material and Chemical Systems

Recommended Courses:

- ME 500-3 Advanced Engineering Thermodynamics
- ME 504-3 Diffraction Methods in Engineering
- ME 508-3 Nano/Microscale Energy and Heat Transfer
- ME 509-3 Thermal Radiation Heat Transfer
- ME 531-3 Reaction Engineering and Rate Processes
- ME 539-3 Catalysis in Energy Processes
- ME 562-3 Environmental Degradation of Materials
- ME 555-3 Materials Processing
- ME 564-3 Ceramic Materials for Electronics
- ME 567-3 Tribology
- ME 568-3 Alternate Energy and Fuel Resources
- ME 577-3 Bioprocess Engineering

Suggested Electives:

- ME 582-1 Experimental Research Tools
- ME 593-3 Special Topics in Mechanical Engineering
- ENGR 522-3 Intellectual Property and Commercialization

This is only a partial list and students may take classes from other departments to meet graduation requirements with the approval of their advisor and the MAME Director.

Biomechanics

Recommended Courses:

- ME 535-3 Computer Aided Analysis of Mechanical Systems I

- ME 540-3 Tissue Engineering
- ME 550-3 Contact Mechanics
- ME 585-3 Cellular and Molecular Biomechanics
- ZOOL 557-4 Biostatistics

Suggested Electives:

- ME 582-1 Experimental Research Tools
- ME 593-3 Special Topics in Mechanical Engineering
- ENGR 522-3 Intellectual Property and Commercialization

This is only a partial list and students may take classes from other departments to meet graduation requirements with the approval of their advisor and the MAME Director.

Aerospace Engineering

Recommended Courses:

- ME 507-3 Combustion Phenomena
- ME 527-3 Advanced Flight Dynamics
- ME 528-3 Advanced Orbital Mechanics
- ME 535-3 Computer Aided Analysis of Mechanical Systems I
- ME 538-3 Applied Optimal Design and Control of Dynamic Systems
- ME 545-3 Intelligent Control
- ME 547-3 Advanced Spacecraft Dynamics and Control
- ME 566-3 Advanced Mechanics of Materials

Suggested Electives:

- ME 582-1 Experimental Research Tools
- ME 593-3 Special Topics in Mechanical Engineering
- ENGR 522-3 Intellectual Property and Commercialization

This is only a partial list and students may take classes from other departments to meet graduation requirements with the approval of their advisor and the MAME Director.

Mechanical Engineering Courses

ME400 - Engineering Thermodynamics II Combined first and second law analysis: Exergy analysis; Analysis of power and refrigeration cycles. Detailed treatment of gas and vapor cycles including gas and steam cycles; Thermodynamics of combustion and reaction of mixtures; Introduction to thermodynamic property relations, chemical and phase equilibrium. Prerequisite: ME 300. Credit Hours: 3

ME401 - Thermal Measurements Laboratory Study of basic measurements used in the thermal sciences. Calibration techniques for temperature and pressure sensors. Thermal measurements under transient and steady-state conditions. Applications include conduction, convection, and radiation experiments. Uncertainty analysis. The handling and reduction of data. Prerequisite: ME 302. Lab fee: $25. Credit Hours: 1

ME405 - Transportation Power Systems Operation and performance characteristics of Otto, Diesel, Atkinson cycles. Methods of engine testing, types of fuels and their combustion, exhaust gas analysis. Types, selection, and analysis of jet engines. Analysis of fuel cell types, their performance and limitations. Operation of electric motors, capacitors, battery packs, and their charging. Prerequisite: concurrent enrollment in or completion of ME 400, with a minimum grade of C or consent of instructor. Credit Hours: 3

ME406 - Thermal Systems Design Applications of the principles of engineering analysis to the design of thermal systems. Coordination of such systems as heat exchangers, air conditioners, cogeneration

cooling towers, and furnaces. Emphasis is placed on application of basic principles of heat transfer and fluid mechanics. Prerequisite: ME 302. Credit Hours: 3

ME408 - Energy Conversion Systems The study of non-renewable energy resources, their use, and environmental effects. Thermodynamic principles of vapor power cycles. The operating principles and current technology of renewable energy systems of wind, solar, and water. Transportation technologies and efficiencies are included. Economic considerations of all energy systems. Prerequisite: ME 300. Credit Hours: 3

ME410 - Applied Chemical Thermodynamics and Kinetics Designed for students interested in chemical and environmental processes and materials science. Topics covered include application of the second and third laws of thermodynamics, solution theory, phase equilibria, sources and uses of thermodynamic data, classical reaction rate theory, kinetic mechanisms, and the determination of rate-determining steps in chemical reactions. Prerequisite: CHEM 200, 201, ME 300 or consent of instructor. Credit Hours: 3

ME415 - Engineering Acoustics Principles of engineering acoustics and their applications to passive and active noise control techniques. Laboratory experience demonstrates techniques for control and reduction of noise. Prerequisite: ME 336. Credit Hours: 3

ME416 - Air Pollution Control An overview of problems in air pollution likely to influence the Mechanical Engineer. Engineering control theory, procedure, and equipment related to control of particulate, gaseous, and toxic air emissions. Restricted to 4th Year standing and College of Engineering, Computing, Technology, and Mathematics or consent of instructor. Credit Hours: 3

ME421 - Pneumatic Hydraulic Engineering Design principles of fluid power engineering. The behavior of fluids in a system. Analysis and design of hydraulic and pneumatics machinery and systems using fluid as a medium for transmission of power and control of motion. Analysis of steady state and dynamic behavior. Critical operations and analysis. Credit Hours: 3

ME422 - Applied Fluid Mechanics for Mechanical Engineers Applications of fluid mechanics in internal and external flows. The mathematical basis for inviscid and viscous flows calculations is developed with application to pipe and duct flows; external flow about bodies; drag determination; turbomachinery; and reaction propulsion systems. Semester design project of a fluid mechanical system. Prerequisite: ME 300 and MATH 305; ENGR 370A or 370B concurrently. Credit Hours: 3

ME423 - Compressible Flows Foundation of high speed fluid mechanics and thermodynamics. One-dimensional flow, isentropic flow, shock waves and nozzle and diffuser flows. Flow in ducts with friction and heat transfer. Prandtl-Meyer flow. Compressibility effects in reaction propulsion systems. Semester design project. Prerequisite: ME 300; ENGR 370A or 370B concurrently. Credit Hours: 3

ME431 - Advanced Manufacturing and Sustainability The manufacturing sector accounts for a significant portion of global energy consumption and greenhouse gas emissions, and there is growing interest in the potential for advanced manufacturing technologies such as additive manufacturing and smart manufacturing to reduce the sector's environmental impacts. For sustainable manufacturing, decision makers should focus on a triple bottom line that addresses the three pillars of sustainability: economic considerations, social responsibility, and environmental impact. The Advanced Manufacturing and Sustainability course provides an overview of sustainability, sustainable manufacturing, and advanced manufacturing processes such as additive manufacturing and smart manufacturing. Manufacturing cost analysis, energy consumption and environmental impact, life cycle assessment (LCA), product and process design for sustainability, and sustainable manufacturing systems are also covered in detail. Prerequisite: ENGR 350A. Credit Hours: 3

ME435 - Design of Mass Transfer Processes Design principles of mass transfer processes. The rate mechanism of molecular, convective, and interphase mass diffusion. The design of selected industrial mass transport process operations such as absorption, humidification, water-cooling, drying, and distillation. Prerequisite: ME 302. Credit Hours: 3

ME440 - Design of HVAC and Building Energy Systems Building energy design and simulation; HVAC systems, heating and cooling load analysis; Air conditioning processes; Principles of human thermal

comfort. Prerequisite: ME 302. Restricted to graduate standing or consent of the instructor. Credit Hours: 3

ME446 - Energy Management Fundamentals and various levels of analysis for energy management of commercial buildings and industrial processes and buildings. Use of energy management systems and economic evaluations are required in course projects. Prerequisite: ME 302. Credit Hours: 3

ME449 - Mechanics of Advanced Materials Mechanical behavior of composite materials, cellular materials, functionally graded materials. Constitutive equations for the linear and nonlinear ranges, failure theories, fracture mechanics. Application to the design of composite and sandwich structures, pressure vessels, shafts, armor under static loading, impact and blast loading. Prerequisite: ENGR 261; ENGR 350A or 350B concurrently. Credit Hours: 3

ME450 - Introduction to Battery Engineering Fundamentals of battery operation. Overview of battery chemistries. Battery applications. Design considerations. Emerging Technologies. Restricted to 4th Year standing. Credit Hours: 3

ME451 - Advanced Dynamics Three-dimensional kinematics and dynamics of particles and rigid bodies; Coordinates and reference frames; Rotations of rigid bodies; Euler angles; Newtonian mechanics; Work and energy; Generalized coordinates and degrees of freedom; Analytical mechanics with a focus on Lagrange's equations; Hamilton's principle for continuous elastic systems. Prerequisites: MATH 305 and ME 309 with a grade of C or better or graduate standing. Credit Hours: 3

ME459 - Carbon Management - Engineering Capture and Conversion Carbon management is expected to affect every sector and industry. Knowledge of the state of art technologies for carbon capture, utilization and storage, and assessment methodologies for estimating the impact of the implementation of technologies on greenhouse gas emissions are building blocks to understanding, developing, and implementing carbon management strategies. The course will encompass: a) process descriptions including current efficacies, quantitative process analysis, and materials properties involved in carbon dioxide separation and capture including direct air capture; b) fundamental processes involved in carbon dioxide conversions using thermo-electro-biochemical and biological routes; qualitative and quantitative discussions on rate processes involved and net carbon reductions by the processes, and c) greenhouse gas emissions assessments using systems approaches and integrative approaches such as life cycle analysis and other numerical techniques. Prerequisite: ME 400 with a grade of B or better or consent of instructor. Credit Hours: 3

ME463 - Introduction to Ceramics Structure and physical properties, mechanical properties, processing, and design of ceramics. Prerequisite: ME 312 or equivalent. Credit Hours: 3

ME464 - Electronic Properties and Applications of Materials Electronic properties of materials, and the applications of materials as electronic components. The effects of chemistry, crystal structure, stoichiometry, processing, and microstructure on the electronic properties are discussed, along with the functions, performance requirements, and testing methods of materials for conductors, semiconductors, insulators, dielectrics, ferroelectric, piezoelectric, electro-optical, superconductors, and magnetic materials. Prerequisite: ME 312 or consent of the instructor. Credit Hours: 3

ME465 - Introduction to Nanotechnology Survey of the rapidly developing fields of nanometer science and engineering. Impact on society; principles of self-assembly; production and properties of nano-materials; cell mechanism as a model for assemblers; nano-tools; and nano-systems are explored. Prerequisite: CHEM 210. Credit Hours: 3

ME470 - Mechanical System Vibrations Linear vibration of mechanical systems; System modeling; Free and forced response of single degree of freedom systems; Lagrange's equations; Multi-degree of freedom systems; Modal analysis for response calculations; Vibration of continuous systems. Prerequisite: ENGR 261, ENGR 351, MATH 305. Credit Hours: 3

ME472 - Materials Selection for Design Interaction of material design process with material selection criteria. Comparison of materials properties, processes, and fabrication. Project work includes design models, materials selection rationale, oral presentation of projects, construction of mock-up models, and theoretical design problems in the area of the student's specialization, including materials selection

considerations for biomaterials/biomedical applications. Prerequisites: ME 312, ENGR 261; ME 222 or ENGR 222 or ENGR 296. Credit Hours: 3

ME475 - Machine Design I Design of machines using bearings, belts, clutches, chains, and brakes. Develops application of the theory of fatigue, power transmission, and lubrication to the analysis and design of machine elements. Prerequisite: ENGR 351; ENGR 350A or 350B concurrently. Credit Hours: 3

ME477 - Fundamentals of Computer-Aided Design and Manufacturing Introduction to the concepts of computer-aided design and manufacturing (CAD/CAM). Subjects include computer graphics, geometric modeling, engineering analysis with FEM, design optimization, computer numerical controls, project planning, and computer integrated manufacturing. (CIM). Students are required to use computer packages for projects. Prerequisite: ME 475 or consent of instructor. Lab fee: $25. Credit Hours: 3

ME478 - Finite Element Analysis in CAD Course to cover a multitude of topics in CAD/CAE with emphasis on finite element modeling and analysis. Overview of CAD/CAM/CAE; FEA software; FEA problems including trusses, beams, frames, thermal analysis, and fluid mechanics; design optimization; rapid prototyping. Students are required to use FEA software for homework assignments and a design project. Prerequisite: ME 302. Co-requisite: ME 475. Lab fee: $25. Credit Hours: 3

ME480 - Computational Fluid Dynamics Application of computational fluid dynamics techniques to the solution of problems in engineering heat transfer and fluid flow. Discretization techniques; stability analysis. Introduction to grid generation. Prerequisite: ENGR 351, ENGR 370A (or 370B concurrently); ME 302 or consent of instructor. Credit Hours: 3

ME481 - Design and Implementation of Vision System (Same as BME 481) This course provides an introduction to a vision system and instrumentation with engineering applications including optical microscopy. A vision system is an essential tool in most of the applications, and optical microscopy is a powerful scientific tool to study microscale worlds. Topics covered in basic geometrical optics, optoelectronic devices, basic electronics for illumination system, optical microscopy, actuators in the microscope, fundamentals of fluorescence microscopy, and advanced imaging techniques. Prerequisites: ENGR 296 or ME 222 or consent of instructor. Credit Hours: 3

ME486 - Nondestructive Evaluation of Engineering Materials (Same as CE 486) Overview of common nondestructive evaluation (NDE) techniques, such as visual inspection, eddy current, X-ray, and ultrasonics, to measure physical characteristics of and to detect defects in engineering materials. Laboratory experiments include contact ultrasonic, magnetic particle, liquid penetrant, and infrared thermography methods of testing. Prerequisite: ME 312 with a grade of C or better. Credit Hours: 3

ME493 - Materials in Energy Applications Materials are central to every energy technology. The course will provide information on high performance materials for alternative energy technologies and developing a fundamental understanding of their structure-property-performance relationships. It will include materials for fuel cells, lithium-ion batteries, supercapacitors, photovoltaics, solar energy conversion, thermoelectrics, and hydrogen production and storage, catalysts for fuel conversion. Prerequisite: ME 312. Credit Hours: 3

ME500 - Advanced Engineering Thermodynamics This course creates computer programs to solve complex problems in thermodynamics relating to vapor power cycles, gas power cycles, refrigeration cycles, and psychrometric evaluations. The course also covers advanced thermodynamic relations involving equations of state and chemical equilibrium. Prerequisite: ME 400 or equivalent or consent of instructor. Credit Hours: 3

ME501 - Transport Phenomena Mechanism of heat, mass and momentum transport on both molecular and continuum basis. Estimation of transport properties. Generalized transport equations in one- or three-dimensional systems. Analogy of mass, heat and momentum transfer. Macroscopic balances, simultaneous mass and heat transfer. Prerequisite: ME 302. Credit Hours: 3

ME502 - Conduction Heat Transfer Engineering considerations involving the construction of mathematical and numerical models of conduction heat transfer and the interpretation of results of analyses. Prerequisite: ME 302. Credit Hours: 3

ME503 - Convective Heat Transfer Laminar and turbulent forced convection heat transfer over surfaces and inside tubes, including non-circular cross sections. Developing flows. Laminar free convection. Emphasis throughout is on the analytical approach. Prerequisite: ME 302. Credit Hours: 3

ME504 - Diffraction Methods in Engineering X-ray and neutron physics. Geometry of crystals. Scattering of X-rays and neutrons by atoms, crystals, and noncrystalline matter. Kinematical theory of diffraction. Powder method, Laue method. Formation and analysis of diffraction patterns. Analysis of crystal defects. Mechanical property measurement. Residual Strain measurement. Stress-Strain analysis. Thermal property measurement. Prerequisite: ME 312 with a grade of C+ or better or instructor permission. Credit Hours: 3

ME505 - Vehicle Dynamics To provide an introductory coverage of dynamics of vehicle systems. The topics include mainly automotive systems but others such as aircraft and train systems may be discussed. Students will become familiar with issues related to tire behavior, vehicle suspension design, steering, vehicle and load transfer. Prerequisite: ENGR 261. Credit Hours: 3

ME507 - Combustion Phenomena Basic combustion phenomena-chemical rate processes-flame temperature, burning velocity, ignition energy, quenching distance and inflammability limits-laminar and turbulent flame propagation-aerodynamics of flame-gaseous detonations-two phase combustion phenomena-fluidized bed combustion. Prerequisite: ME 300. Credit Hours: 3

ME508 - Nano/Microscale Energy and Heat Transfer Review of limitations of macroscopic energy transport models; Energy transport and conversion mechanisms at the micro/nano/molecular scale; Energy transfer in nanostructured energy devices; Related topics on the transport of electrons, phonons and molecules; Molecular Dynamics simulation. Restricted to graduate standing or consent of the instructor. Credit Hours: 3

ME509 - Thermal Radiation Heat Transfer Review of radiation fundamentals. Prediction of radiative properties using classical electromagnetic theory. Properties of real materials. Governing equations between blackbody and graybody surfaces. Exchange of radiation between nondiffuse, nongray surfaces. Radiation in the presence of other energy transfer modes. Approximate and computer solution techniques. Prerequisite: ME 302. Credit Hours: 3

ME525 - Small Particle Phenomena Small particle formation, behavior, properties, emission, collection, analysis and sampling. Includes atomization, combustion, transport of suspension and sols, filtration, light scattering and movement patterns of mono and polydisperse particles and use of a device to measure size, size distribution and one other physical property of an aerosol. Restricted to graduate standing. Credit Hours: 3

ME527 - Advanced Flight Dynamics Introduction to the performance, stability, and control of aircraft. Fundamentals of configuration aerodynamics. Methods for analyzing the dynamics of physical systems. Characterization of modes of motion and desirable flying qualities. Case studies in aircraft stability and control. A term project is required for the class. Restricted to graduate standing. Credit Hours: 3

ME528 - Advanced Orbital Mechanics Natural behavior of planets and moons in the solar system as well as spacecraft motion: orbit dynamics, two-body problem, perturbations, and stability; trajectory generation and control, on-orbit maneuvers, and transfers. A term project is required for the class. Restricted to graduate standing. Credit Hours: 3

ME531 - Reaction Engineering and Rate Processes Chemical kinetics of homogeneous and heterogeneous reactions, kinetic theories, mechanism and mathematical modeling. Reactor design. Design of multiple reactions; temperature and pressure effects. Nonisothermal and nonadiabatic processes. Non-ideal reactors. Prerequisite: ME 435. Credit Hours: 3

ME535 - Computer Aided Analysis of Mechanical Systems I Computer aided kinematic and dynamic analysis of planar mechanism: topics will include formulation of kinematic and dynamic equations of motion for planar systems. Automatic generations of kinematic constraint such as resolute joint, translation joint, etc. Numerical techniques for solution of nonlinear, differential, and algebraic equations, application of these techniques to planar mechanism and robotic systems. Prerequisite: ME 309. Credit Hours: 3

ME537 - Nonlinear Vibrations Dynamic response and stability of nonlinear systems. Examples and sources of nonlinearity. Various techniques for studying dynamic behavior or nonlinear systems. Prerequisite: ME 470 or consent of instructor. Credit Hours: 3

ME538 - Applied Optimal Design and Control of Dynamic Systems Unconstrained and Constrained Mechanical-System Optimization Problems; Variational Calculus; Continuous Optimal Control; The Maximum Principle and Hamilton-Jacobi Theory; Dynamic-Systems Optimum-Control Examples; Design Sensitivity Analysis; Numerical Methods for Dynamic-System Design and Control Problems; Application of the above techniques to Large Scale Dynamic Systems. Prerequisite: ME 470 or equivalent. Credit Hours: 3

ME539 - Catalysis in Energy Processes This course spans the full range from fundamentals of kinetics and heterogeneous catalysis via modern experimental and theoretical results of model studies to their equivalent large-scale energy processes. Several processes are discussed including hydrogen production, fuel cells, liquid fuel synthesis. Prerequisite: ME 410 or consent of instructor. Credit Hours: 3

ME540 - Tissue Engineering (Same as BME 540) Fundamentals of tissue engineering will be discussed. Developing biomaterials for artificial scaffolds and cell populations within the scaffolds will be discussed. Stem cells for cell-based therapy will be highlighted. Design of various organ-on-chips will be covered. Other topics include recent advances in 3D bioprinting for organ engineering/regenerative medicine. Advances in in-vitro tumor models will be discussed. Ethical considerations will be emphasized. Credit Hours: 3

ME545 - Intelligent Control Techniques to design and develop intelligent controllers for complex engineering systems. Specific techniques covered are fuzzy logic, expert systems, genetic algorithms, simulated annealing and any combinations of these. Prerequisite: ME 336 or consent of instructor. Credit Hours: 3

ME547 - Advanced Spacecraft Dynamics and Control Space missions and how pointing requirements affect attitude control systems. Rotational kinematics and attitude determination methods. Modeling and analysis of the attitude dynamics of space vehicles. Rigid body dynamics, effects of energy dissipation. Gravity gradient, spin, and dual spin stabilization. Rotational maneuvers. Impacts of attitude stabilization techniques on mission performance. A term project is required for the class. Restricted to graduate standing. Credit Hours: 3

ME549 - Wave Propagation, Impact and Explosions This course will deal with the dynamic response of materials and structures to dynamic events with particular emphasis on crashes, impacts and explosions. Prerequisite: ENGR 261 or consent of instructor. Credit Hours: 3

ME550 - Contact Mechanics Course covers fundamentals of mechanics of elastic and inelastic solids in contact. Although the primary focus is on elastic contact, topics involving plastic flow, thermo-elastic effects and contact of rough surfaces are included in the content. Restricted to graduate standing. Credit Hours: 3

ME551 - Advanced Vibration Analytical techniques for the vibration of discrete, continuous, and hybrid discrete-continuous systems; Vibration of conservative and nonconservative systems with focus on their representation in terms of linear operators; Properties of vibrating systems; Discretization methods for the analysis of continuous and nonlinear systems; Vibration and stability of gyroscopic systems. Prerequisite: ME 470 with a grade of C or better or graduate standing. Credit Hours: 3

ME555 - Materials Processing Course to cover a multitude of topics in the processing of metals, ceramics and, to a lesser extent, polymers. Examples are: materials benificiation, extraction, solidification, sintering and thin film deposition; topics for which the scientific basis for the processes is well established. Prerequisite: ME 312 and 410 or consent of instructor. Credit Hours: 3

ME562 - Environmental Degradation of Materials Course designed for majors in engineering and the physical sciences. Topics covered include general corrosion, oxidation, hydrogen embrittlement, stress corrosion cracking and fine particle erosion. Approach will draw on principles of chemistry and materials science. Prerequisite: CHEM 200 and CHEM 210, ME 312, or consent of instructor. Credit Hours: 3

ME564 - Ceramic Materials for Electronics Ceramic materials contribute essential passive functions as components for a wide range of electronic applications related to sensors and energy converters. Ceramic material's electronic properties, electronic and ionic conduction in ceramic oxides; processing, properties and applications of ceramic materials for electronics, solid-oxide fuel cells, properties, fabrication and performance will be covered in this course. Prerequisite: ME 312, 463 or consent of instructor. Credit Hours: 3

ME565 - Finite Element Analysis (Same as CE 551) Finite element analysis as a stress analysis or structural analysis tool. Derivation of element stiffness matrices by various means. Application to trusses, plane stress/strain and 3-D problems. Dynamic and material nonlinearity problems. Restricted to graduate standing in engineering or consent of instructor. Credit Hours: 3

ME566 - Advanced Mechanics of Materials (Same as CE 557) Advanced topics in mechanics of materials including: elasticity equations; torsion of non-circular sections; generalized bending including curved beams and elastic foundations; shear centers; failure criteria including yielding, fracture and fatigue; axisymmetric problems including both thick and thin walled bodies; contact stresses; and stress concentrations. Restricted to graduate standing in engineering or consent of instructor. Credit Hours: 3

ME567 - Tribology Analysis and design of tribological components particularly bearings. A number of modern developments in the field and advanced topics will be presented. Restricted to graduate standing or consent of instructor. Credit Hours: 3

ME568 - Alternative Energy and Fuel Resources The course covers the alternatives for energy resources and the impact of the human growth on the energy usage and its environmental consequences. The course describes the fossil fuel era, renewable energy resources, and hydrogen fuel era. The fundamentals of each of these fuel types, their conversion to usable energy and the potential of each of these fuels for the future is discussed. Prerequisite: ME 300 and 400, or instructor's consent. Credit Hours: 3

ME569 - Non-Destructive Evaluation Course to cover a multitude of topics in non-destructive evaluation (NDE) techniques with emphasis on recent advancements in the field. Introduction to the field of NDE. Overview of common NDE techniques, such as visual inspection, eddy current, X-ray and ultrasonics. Recent development and research areas in NDE. Credit Hours: 3

ME577 - Bioprocess Engineering (Same as BME 577) This course introduces the Mechanical and/or the Biomedical Engineer to the applications of bioprocesses to biotechnology, bacterial cell cultivation, animal cell cultivation, plant cell cultivation and medical applications bioprocessing. Attention will be given to a short survey of the working cells and rectors for cell growth, but will be an overview in nature. Restricted to graduate student standing. Credit Hours: 3

ME580 - Seminar Presentations of topics in the broad areas of mechanical engineering such as thermal, mechanics, materials and acoustics. Restricted to enrollment in program leading to Master of Science of Mechanical Engineering. Credit Hours: 1

ME581 - Microrobotics This course provides an introduction to Microrobotics which is a newly emerging robotics field. Since the micro/nano-scale technologies have been improved dramatically, the microrobot has been highlighted for applications in healthcare, biotechnology, etc. Topics covered: the forces and its effects on microrobots at the micron scale, the fabrication methods, control/sensing methods for microrobots, microrobots actuation methods, and locomotions in low Re number regime. In addition, the course will summarize and describe the near-future challenges in Microroborics. Restricted to graduate standing. Credit Hours: 3

ME582 - Experimental Research Tools Topics important to engineering graduate students engaging in research. These topics include: laboratory safety, statistical data analysis, experimental design, library research and chemical hygiene. Restricted to graduate enrollment in Engineering. Credit Hours: 1

ME583 - Technical Research Reporting Analysis of technical and scientific writing: journal article, thesis, research paper. Guidelines and principles for writing engineering research literature and proposals. Term project involving thesis or research paper proposal to meet department requirements. Prerequisite: ME 582. Special approval needed from the instructor. Credit Hours: 1

ME585 - Cellular and Molecular Biomechanics Mechanics of living cells at the micron/ nanoscale level. Molecular forces, bond dynamics, force-induced protein conformational changes. Structural basis of living cells, contractile forces, mechanics of biomembranes, the nucleus, the cytoskeletal filaments-actin, microtubule, intermediate filaments. Active and passive rheology, microrheological properties of the cytoskeleton. Active cellular processes such as cell adhesion, cell spreading, control of cell shape, and cell migration. Discussion on the experimental techniques including single-molecule approaches to understanding these key cellular processes. Discussion of theoretical models that predict these cellular processes and their limitations. Introduction to mechanobiology. A term project is required for the class. Restricted to graduate standing. Credit Hours: 3

ME586 - Additive Manufacturing Overview of common additive manufacturing (AM) systems, such as stereolithography (STL), fuse deposition modeling (FDM), powder bed fusion, laminated object manufacturing (LOM), etc. Application of AM in aerospace, automobile, medical, and bioengineering. Material selection and processes for AM. Lab fee: $25. Credit Hours: 3

ME592 - Special Investigations in Engineering Advanced topics in thermal and environmental engineering. Topics are selected by mutual agreement of the student and instructor. Four hours maximum course credit. Special approval needed from the instructor and department chair. Credit Hours: 1-4

ME593 - Special Topics in Mechanical Engineering Studies of special topics in various areas in mechanical engineering. Such topics as coal refining, energy conversion, thermal systems, mechanics, robotics, CAD/CAM, TOM and engineering materials. Special approval needed from the instructor. Credit Hours: 3

ME595 - Research Paper Research paper on a topic approved by a faculty advisor and committee in Mechanical Engineering. This course is restricted to graduate students in the non-thesis option. Restricted to graduate standing in Mechanical Engineering. Special approval needed from the instructor or department. Credit Hours: 3

ME599 - Thesis Six hours maximum course credit. Credit Hours: 1-6

ME600 - Doctoral Dissertation Dissertation research. Hours and credit to be arranged by director of graduate studies. Graded S/U only. Restricted to admission to Ph.D. in Mechanical Engineering program. Credit Hours: 1-16

ME601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Mechanical Engineering Faculty

Chowdhury, Farhan, Professor, Ph.D., University of Illinois at Urbana-Champaign, 2011; 2015. Biomedical Engineering, stem cell biology, regenerative medicine, biomedical and molecular mechanism of tumorigenic cancer cells.

Chu, Tsuchin P., Professor and Director of the Engineering Science Ph.D. Program, Ph.D., University of South Carolina, 1982; 1990. Non-destructive evaluation, biomedical engineering, FEA, carbon composites, CAD/CAM, machine vision, optical methods in experimental mechanics, image processing and analysis.

Dong, Bin, Assistant Professor, Ph.D., Virginia Polytechnic Institute and State University, 2019; 2023. Vibration of mechanical systems, vibration analysis based on symmetry principles.

Eslamiat, Hossein, Assistant Professor, Mechanical Engineering, Ph.D., Syracuse University, 2020; 2020. Nonlinear Dynamics, Control and Estimation for Underactuated Systems.

Esmaeeli, Asghar, Professor, Ph.D., The University of Michigan, 1995; 2005 Large scale computations of multiphase flows, phase change phenomena, and electrohydrodynamics.

Filip, Peter, Professor, Ph.D., Technical University Ostrava, D.Sc., Academy of Sciences, Prague, Czech Republic, 1989. 1989; 1999. Materials science and engineering nanotechnology, friction science and applications, biomaterials, shape memory, alloys and advanced composite materials.

Jung, Sangjin, Assistant Professor, Ph.D., Hayang University, 2012; 2021. Additive manufacturing, product design.

Koc, Rasit, Professor, Ph.D., Missouri University Science and Technology, 1989; 1994. Advanced Materials and composites processing and characterization.

Mathias, James A., Professor, Ph.D., Ohio State University, 2001; 2003. Nanotechnology, microchannels, heat transfer, thermodynamics, energy utilization.

Nilufar, Sabrina, Assistant Professor, Ph.D., University of Illinois, Champaign, 2014. Advanced materials, covetics and reinforced composite materials processing and characterization. Phase transformation, corrosion resistance, and thermal and electrical properties for aerospace, military armors, cardiovascular stents application, and biomedical implants for orthopedic application.

Nsofor, Emmanuel C., Professor, Ph.D., Mississippi State University, 1993; 1999. Heat transfer, advanced energy systems, renewable energy sources, computational fluid dynamics (CFD).

Swift, Geoffrey, Assistant Professor, Ph.D., California Institute of Technology, 2004; 2020. Advanced batteries and battery materials; mechanics of materials; ceramic materials.

Emeriti Faculty

Abrate, Serge, Professor, Emeritus, Ph.D., Purdue University, 1983; 1995.

Agrawal, Om, Professor, Emeritus, Ph.D., University of Illinois-Chicago, 1984; 1985.

Don, Jarlen, Professor, Emeritus, Ph.D., Ohio State University, 1982; 1985.

Farhang, Kambiz, Professor, Emeritus, Ph.D., Purdue University, 1989; 1990.

Harpalani, Satya, Professor, Emeritus, Ph.D., University of California, Berkeley, 1985; 2001.

Hippo, Edwin J., Professor, Emeritus, Ph.D., Pennsylvania State University, 1977; 1984.

Jefferson, Thomas B., Professor, Emeritus, Ph.D., Purdue University, 1955; 1969.

Kent, Albert C., Professor, Emeritus, Ph.D., Kansas State University, 1968; 1966.

O'Brien, William S., Associate Professor, Emeritus, Ph.D., West Virginia University, 1972; 1973.

Orthwein, William C., Professor, Emeritus, Ph.D., University of Michigan, 1958; 1965.

Swisher, George M., Professor, Emeritus, Ph.D., Ohio State University, 1969; 1999.

Swisher, James H., Professor, Emeritus, Ph.D., Carnegie Mellon, 1963; 1983.

Tempelmeyer, Kenneth E., Professor, Emeritus, Ph.D., University of Tennessee, 1969; 1979.

Wittmer, Dale E., Professor, Emeritus, Ph.D., University of Illinois, 1980; 1986.

Wright, Maurice, Professor, Emeritus, Ph.D., University of Wales, United Kingdom, 1962; 1984.

Medical Dosimetry

Mission

The mission of the Medical Dosimetry Program offered by Southern Illinois University Carbondale is to provide a quality program integrating education, research and service in order to meet the needs of the profession and improve health care of the people and communities we serve.

Master of Science (M.S.) in Medical Dosimetry

M.S. Medical Dosimetry - Track 1

Program Goals

1. Prepare the student to practice as a competent entry level professional Medical Dosimetrist by offering a comprehensive curriculum and quality didactic/clinical instruction.
2. Provide didactic and clinical experiences that lead to research in educational, professional, or health care issues relating to medical dosimetry.
3. Provide avenues to students for professional development and growth within the profession.
4. Provide avenues for students to develop and apply skills in effective communication necessary for successful medical dosimetry practice.
5. Provide avenues for students to develop and apply skills in critical thinking and problem-solving necessary for successful medical dosimetry practice.
6. Provide a clinical and didactic environment which leads to the development of clinical skills and competence appropriate to an entry level Medical Dosimetrist.

Program Description

The Medical Dosimetrist is a member of the Allied Health and Radiation Oncology Team.

Course material and practicum covers radiation physics, radiation protection, dose calculations, tumor localization, external beam treatment planning, brachytherapy, quality assurance, medical imaging/anatomy, clinical radiation oncology, and radiobiology. Clinical practicum includes external beam treatment planning, brachytherapy treatment, preparation and planning, chart reviews and dose calculations, record and verify system data entry, simulation (conventional and CT-simulation), treatment aid fabrication, treatment machine quality assurance, stereotactic treatment planning, gamma knife, IMRT planning and treatment. Special project assignments, conference attendance, written reports, chapter reviews, and labs are also part of the curriculum.

Accreditation

The M.S. in Medical Dosimetry Program is accredited through the Joint Review Committee on Education in Radiologic Technology (JRCERT). The program at SIUC was the third program to be accredited in the United States.

The program meets the formal education eligibility criteria for the national certification exam following graduation, as required by the Medical Dosimetrist Certification Board.

General Description of a Medical Dosimetrist

The Certified Medical Dosimetrist (CMD) is a member of the radiation oncology (cancer treatment) team who has knowledge of the overall characteristics and clinical relevance of radiation oncology treatment machines and equipment, is cognizant of procedures commonly used in brachytherapy (treatment with radioactive sources at a close distance) and has the education and expertise necessary to generate radiation dose distributions and dose calculations in collaboration with the Medical Physicist and Radiation Oncologist.

Major Duties

- Design a treatment plan by means of computer and/or manual computation that will deliver a prescribed radiation dose and field placement technique in accordance with the Radiation Oncologist's prescription to a defined tumor volume.
- Consider dose-limiting structures in the design of treatment plans and document dose in accordance with the Radiation Oncologist's prescription.
- Coordinate treatment simulations and tumor localization on dedicated devices, including Computerized Tomography (CT), Magnetic Resonance Imaging (MRI), and Positron Emission Tomography (PET) when indicated, for radiation oncology treatment planning.

- Supervise, perform, or assist in the planning of the fabrication of compensation filters, custom shields, wedges, and other beam modifying devices.
- Supervise, perform, or assist in the planning of the production of moulds, casts, and other immobilization devices.
- Supervise therapy staff in the implementation of the treatment plan including: the correct use of immobilization devices, compensators, wedges, field arrangement, and other treatment variables.
- Perform calculations for the accurate delivery of the Radiation Oncologist's prescribed dose, document all pertinent information in the patient record, and verify the mathematical accuracy of all calculations using a system established by the Medical Physicist.
- Provide physics and technical support to the Medical Physicist, in radiation protection, qualitative machine calibrations, and quality assurance of the radiation oncology equipment.
- Supervise, perform, or assist in the application of specific methods of dosimetry including ion chamber, TLD, or film measurement as directed by the Medical Physicist.
- Assist in intracavitary and interstitial brachytherapy procedures and in the subsequent manual and/or computer calculation of the dose distributions of these treatments.
- Teach applied aspects of medical dosimetry to students and residents, as assigned.
- Participate in clinical research for the development and implementation of new techniques.
- Participate in continuing education in the area of current treatment planning techniques, and advances in medical dosimetry.

Source: medicaldosimetry.org

Eligibility for the Master of Science Program in Medical Dosimetry Track 1

Preferred candidates are individuals who have a baccalaureate degree and have been trained as a radiation therapist.

Consideration is given to applicants with a bachelor's degree in the physical or biological sciences without radiation therapy experience.

Number of Students

Due to clinical hour requirements and the number of clinical sites, approximately 25-30 students per year will be allowed at this time.

Application

Applications should be received by January 1st of the year one plans to attend the program. Class selection will occur in February/March.

For more information about admission policies, transfer credit, tuition and fees, refund policies, academic calendars, academic policies, graduation requirements, and student services, please see the Admission Policies, Requirements, and Procedures tab.

Class Location

The program offers education at various clinic sites and didactic education is delivered via distance learning. Live video conferencing equipment is used to allow students to interact with the instructors in real time.

Expenses

- Tuition: Current In-State Graduate Level Tuition and applicable Distance Education Fees.
- Textbooks and Lab Coat: Approximately $500 - $600.
- Living Expenses: Students must find housing on their own. This can vary greatly.
- A Computer, Scanner, and High Speed Internet will be required. Computer and bandwidth specifications will be shared once accepted into the program.

Curriculum

The total curriculum consists of 30 credit hours. Program length is 52 weeks and the students attend classes/clinical for 40 hours per week.

Didactic component is approximately 300 - 350 hours. Clinical component is approximately 1,650 - 1,700 hours. The student will have approximately 2,000 hours of education per year and have 80 hours of vacation.

Fall Semester (Total: 12 credit hours)

- RAD 510: Introduction to Medical Dosimetry (2 CH)
- RAD 515: Medical Dosimetry Clinical I (4 CH)
- RAD 520: The Physics of Medical Dosimetry I (3 CH)
- RAD 525: Seminars in Medical Dosimetry I (3 CH)

Spring Semester (Total: 12 credit hours)

- RAD 530: The Essentials of Medical Dosimetry (2 CH)
- RAD 535: Medical Dosimetry Clinical II (4 CH)
- RAD 540: The Physics of Medical Dosimetry II (3 CH)
- RAD 545: Seminar in Medical Dosimetry II (3 CH)

Summer Semester (Total: 6 credit hours)

- RAD 550: Medical Dosimetry Clinical III (2 CH)
- RAD 555: Medical Dosimetry Practice (2 CH)
- RAD 560: Seminar in Medical Dosimetry III (2 CH)

Throughout the M.S. in Medical Dosimetry program, a student must earn a "C" or better in all coursework to continue in the program. In RAD 555, a comprehensive exam is administered in which the student must earn a "B" or better to continue in the program. If a student is removed from the program for academic/performance reasons, they must re-apply for admission to the program.

M.S. Medical Dosimetry - Track 2

Program Goals

1. Provide didactic experiences that lead to research in educational, professional, or health care issues relating to medical dosimetry.
2. Provide avenues to students for professional development and growth within the profession.
3. Provide avenues for students to develop and apply skills in effective communication, analytical and critical thinking and problem-solving necessary for successful medical dosimetry practice.
4. Provide a didactic environment which leads to the development of managerial/educational skills appropriate to a Medical Dosimetrist.

Program Description

The Medical Dosimetrist is a member of the Allied Health and Radiation Oncology Team.

Course material covers radiation physics, radiation protection, dose calculations, tumor localization, external beam treatment planning, brachytherapy, quality assurance, medical imaging/anatomy, clinical radiation oncology, and radiobiology. Special project assignments, journal article reports, and chapter reviews as well as management and education courses are also part of the curriculum.

General Description of a Medical Dosimetrist

The Certified Medical Dosimetrist (CMD) is a member of the radiation oncology (cancer treatment) team who has knowledge of the overall characteristics and clinical relevance of radiation oncology

treatment machines and equipment, is cognizant of procedures commonly used in brachytherapy (treatment with radioactive sources at a close distance) and has the education and expertise necessary to generate radiation dose distributions and dose calculations in collaboration with the Medical Physicist and Radiation Oncologist.

Major Duties

- Design a treatment plan by means of computer and/or manual computation that will deliver a prescribed radiation dose and field placement technique in accordance with the Radiation Oncologist's prescription to a defined tumor volume.
- Consider dose-limiting structures in the design of treatment plans and document dose in accordance with the Radiation Oncologist's prescription.
- Coordinate treatment simulations and tumor localization on dedicated devices, including Computerized Tomography (CT), Magnetic Resonance Imaging (MRI), and Positron Emission Tomography (PET) when indicated, for radiation oncology treatment planning.
- Supervise, perform, or assist in the planning of the fabrication of compensation filters, custom shields, wedges, and other beam modifying devices.
- Supervise, perform, or assist in the planning of the production of moulds, casts, and other immobilization devices.
- Supervise therapy staff in the implementation of the treatment plan including: the correct use of immobilization devices, compensators, wedges, field arrangement, and other treatment variables.
- Perform calculations for the accurate delivery of the Radiation Oncologist's prescribed dose, document all pertinent information in the patient record, and verify the mathematical accuracy of all calculations using a system established by the Medical Physicist.
- Provide physics and technical support to the Medical Physicist, in radiation protection, qualitative machine calibrations, and quality assurance of the radiation oncology equipment.
- Supervise, perform, or assist in the application of specific methods of dosimetry including ion chamber, TLD, or film measurement as directed by the Medical Physicist.
- Assist in intracavitary and interstitial brachytherapy procedures and in the subsequent manual and/or computer calculation of the dose distributions of these treatments.
- Teach applied aspects of medical dosimetry to students and residents, as assigned.
- Participate in clinical research for the development and implementation of new techniques.
- Participate in continuing education in the area of current treatment planning techniques, and advances in medical dosimetry.

Source: medicaldosimetry.org

Eligibility for the Master of Science Program in Medical Dosimetry Track 2

Applicants must be a Certified Medical Dosimetrist and be current with the Medical Dosimetry Certification Board (MDCB). These individuals must also have a baccalaureate degree from an accredited university. The baccalaureate degree and academic performance must meet the entrance requirements set forth by the Graduate School at SIUC.

Individuals that have been approved by the MDCB to take their exam may apply to the program but CMD verification must be documented before any classes may be taken.

Number of Students

There is no limit to the number of students accepted for the M.S. in Medical Dosimetry Track 2 program.

Application

Continuous enrollment is allowed for the M.S. in Medical Dosimetry Track 2 program. This means you may start the program in any semester.

For more information about admission policies, transfer credit, tuition and fees, refund policies, academic calendars, academic policies, graduation requirements, and student services, please see the Admission Policies, Requirements, and Procedures tab.

Class Location

The M.S. in Medical Dosimetry Track 2 program is offered via distance learning.

Expenses

- Tuition: Current In-State Graduate Level Tuition and applicable Distance Education Fees.
- Living Expenses: Students must find housing on their own. This can vary greatly.
- A Computer, Scanner, and High Speed Internet will be required. Computer and bandwidth specifications will be shared once enrolled.

Curriculum

The total curriculum consists of 30 credit hours. Students may enroll only part time for this program.

Suggested Course Sequence for M.S. in Medical Dosimetry Track 2 Students:

Track 2 students may complete courses within the Masters in Health Administration (MHA) or the Masters in Health Informatics (MHI) to receive a concurrent degree with the Medical Dosimetry degree. Please see the MHA and MHI programs for updated concurrent degree requirements.

Fall Semester

- MHA 511: Fundamentals of Health Care Systems - Odd Years (3 CH)
- RAD 516: Cultural Foundations and Theories of Education - Odd Years (3 CH)
- RAD 520: The Physics of Medical Dosimetry I - Even Years (3 CH)
- RAD 525: Seminars in Medical Dosimetry I - Even Years (3 CH)

Spring Semester

- MHA 531: Human Resources in Health Care - Odd Years (3 CH)
- MHA 536: Strategic Leadership in Healthcare (3 CH)
- RAD 540: The Physics of Medical Dosimetry II - Even Years (3 CH)
- RAD 545: Seminar in Medical Dosimetry II - Even Years (3 CH)

Summer Semester

- MHA 551: Legal & Ethical Fundamentals in Healthcare – Even Years (3 CH)
- RAD 556: Individual Research in Healthcare - Odd Years (3 CH)

Throughout the M.S. in Medical Dosimetry program, a student must earn a "C" or better in all coursework to continue in the program. In RAD 555, a comprehensive exam is administered in which the student must earn a "B" or better to continue in the program. If a student is removed from the program for academic/ performance reasons, they must re-apply for admission to the program.

Program Director Contact Information:

Medical Dosimetry Program Director
School of Health Sciences, MC 6615
College of Health and Human Sciences
Southern Illinois University Carbondale
Carbondale, Illinois 62901
Office: 618-453-7211
Fax: 618-453-7020

Medical Dosimetry Courses

RAD510 - Introduction to Medical Dosimetry This course introduces the concepts associated with medical dosimetry. Topics include common mathematical approaches, radiation protection, cross-sectional anatomy, common cancers and treatment techniques, QA, and radiation physics. This course is twenty weeks in length. Restricted to admission to the Medical Dosimetry Program. Credit Hours: 2

RAD515 - Medical Dosimetry Clinical I This is the first course of a three course sequence. During the three course sequence, students will complete eight clinical rotations including Brachytherapy, Simulation, Gamma Knife, Treatment Aids, IMRT, External Beam, Physics, Special Measurements and QA. The length of these rotations varies from one to eleven weeks. During this course students will perform two to four of these rotations depending on the rotation schedule. While in the clinical setting students will observe and work directly with a medical dosimetrist. Emphasis is given on learning and understanding the role and responsibilities of a medical dosimetrist in the clinical setting. This course is twenty weeks in length. Restricted to admission to the Medical Dosimetry Program. Credit Hours: 4

RAD516 - Cultural Foundations and Theories of Education Seminar provides an examination of the historical, social, economic and psychological foundations of allied health education with emphasis given to the nature and role of education and training in preparing for the field of medical education. The objectives of this seminar will allow the student to explore the nature and theories of education, the behavioral aspects of education including the assumptions and practices which underlie education. Special approval needed from the instructor. Credit Hours: 3

RAD520 - The Physics of Medical Dosimetry I This course covers the following topics: Radiologic Physics, production of x-rays, radiation treatment and simulation machines, interactions of ionizing radiation, radiation measurements, dose calculations, computerized treatment planning, dose calculation algorithms, electron beam characteristics, and brachytherapy physics and procedures. This course is twenty weeks in length. Restricted to admission to the Medical Dosimetry Program. Credit Hours: 3

RAD521 - Advance Practice of Radiologic/Imaging Sciences I This course will include a review of the following topics: Radiation physics, radiation biology, anatomy, pharmacology, human diseases/ pathology, advanced imaging methods, advanced imaging modalities, and patient care. Credit Hours: 3

RAD525 - Seminars in Medical Dosimetry I (Same as RAD 526) This course consists of various seminars/literature reviews associated with radiation oncology. Topics include treatment techniques for various cancers, technological advances in cancer treatment, cancer treatment trends, and the role of a medical dosimetrist. This course is twenty weeks in length. Restricted to admission to the Medical Dosimetry Program. Credit Hours: 3

RAD526 - Seminar in Radiologic/Imaging Sciences I (Same as RAD 525) This course consists of various seminar/literature reviews associated with the radiologic/imaging sciences. Topics include imaging techniques, technological advances in the radiologic/imaging sciences, patient care trends, and the role of an imaging professional. This course is twenty weeks in length. Credit Hours: 3

RAD530 - The Essentials of Medical Dosimetry This course expands on the essential concepts associated with radiation physics, dose calculations, radiation measurements, external beam and brachytherapy treatment planning, treatment aids, heterogeneities, electron and proton therapies, and IGRT. This course is twenty weeks in length. Prerequisite: A grade of C or better in RAD 510, RAD 515, RAD 520, and RAD 525. Credit Hours: 2

RAD535 - Medical Dosimetry Clinical II This is the second of a three course sequence. During the three course sequence, students will complete eight clinical rotations including Brachytherapy, Simulation, Gamma Knife, Treatment Aids, IMRT, External Beam, Physics, Special Measurements and QA. The length of these rotations varies from one to eleven weeks. During this course students will perform two to four of these rotations depending on the rotation schedule. While in the clinical setting students will observe and work directly with a medical dosimetrist. Emphasis is given on learning and understanding the role and responsibilities of a medical dosimetrist in the clinical setting. This course is twenty weeks in length. Prerequisite: A grade of C or better in RAD 515. Credit Hours: 4

RAD540 - The Physics of Medical Dosimetry II This course covers the following topics: Imaging for radiation oncology, IMRT, stereotactic radiosurgery, special procedures, particle therapy, hyperthermia, and radiation safety. This course is twenty weeks in length. Credit Hours: 3

RAD541 - Advance Practice of Radiologic/Imaging Sciences II This course will continue to cover the same topics that were reviewed in RAD 521 but to a greater level of understanding. Topics include: Radiation physics, radiation biology, anatomy, pharmacology, human disease/pathology, advanced imaging methods, advanced imaging modalities, and patient care. Credit Hours: 3

RAD545 - Seminar in Medical Dosimetry II (Same as RAD 546) This course consists of various seminars associated with radiation oncology. Topics include treatment techniques for various cancers, technological advances in cancer treatment, cancer treatment trends, and the role of a medical dosimetrist. This course is twenty weeks in length. Credit Hours: 3

RAD546 - Seminar in Radiologic/Imaging Sciences II (Same as RAD 545) This course consists of various seminar/literature reviews associated with the radiologic/imaging sciences. Topics include imaging techniques, technological advances in the radiologic/imaging sciences, patient care trends, and the role of an imaging professional. This course is twenty weeks in length. Credit Hours: 3

RAD550 - Medical Dosimetry Clinical III This is the third course of a three course sequence. During the three course sequence, students will complete eight clinical rotations including Brachytherapy, Simulation, Gamma Knife, Treatment Aids, IMRT, External Beam, Physics, Special Measurements and QA. The length of these rotations varies from one to ten weeks. During this course students will perform one to two of these rotations depending on the rotation schedule. While in the clinical setting students will observe and work directly with a medical dosimetrist. Emphasis is given on learning and understanding the role and responsibilities of a medical dosimetrist in the clinical setting. his course is ten weeks in length. Prerequisite: A grade of "C" or better in RAD 535. Credit Hours: 2

RAD555 - Medical Dosimetry Practice This course brings all medical dosimetry concepts and calculations together for a final program exam. Additional topics include radiation biology, knowledge-based treatment planning, professional development, billing/coding, HIPAA, DICOM, infection control, and test taking strategies. This course is ten weeks in length. Prerequisites: RAD 530 and RAD 540 with grades of C or better. Credit Hours: 2

RAD556 - Individual Research in Healthcare This course requires students to complete a research project in the field of healthcare based upon student interest and instructor approval. Each project will have a written paper as a final product and this paper will be submitted for publication, as approved by the instructor, in one of the professional journals within the field of healthcare. Restricted to School of Health Sciences graduate majors. Credit Hours: 3

RAD560 - Seminar in Medical Dosimetry III This course consists of various seminars/literature reviews associated with radiation oncology. Topics include treatment techniques for various cancers, technological advances in cancer treatment, cancer treatment trends, and the role of a medical dosimetrist. This course is ten weeks in length. Prerequisite: A grade of C or better in RAD 545. Credit Hours: 2

RAD565 - Independent Study Directed independent study in selected areas of medical dosimetry studies. Special approval needed from the Program Director. Credit Hours: 1-6

RAD593 - Advanced Research Students complete a research project including a special project related to the student's chosen field which meets program guidelines. Restricted to School graduate majors and School advisor. Credit Hours: 6. Credit Hours: 6

RAD601 - Continuing Enrollment This course is required to satisfy the Graduate School's requirement of continuous enrollment and is intended for those students who are enrolled in the program but cannot take a core academic course during a given semester. Prerequisite: Consent of Program Director. Credit Hours: 1

Medical Dosimetry Faculty

Collins, Kevin Scott, Professor, Health Care Management, Workforce Education and Development, Ph.D., RT(R)(T), CMD, Southern Illinois University Carbondale, 2011; 1999. Radiation oncology.

Collins, Sandra K., Professor, Health Care Management, Ph.D., Southern Illinois University Carbondale, 2010; 2002. Health care management.

McKinnies, Richard, Professor, Radiologic Sciences, Ph.D., (R)(T), CMD, Southern Illinois University Carbondale, 2020; 2006. Radiation oncology.

Multidisciplinary Biomedical and Biological Sciences

The Multidisciplinary Biomedical and Biological Sciences (MBBS) Graduate Program offers Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees in a variety of disciplines at Southern Illinois University. This umbrella graduate program is designed to provide flexibility for students to choose research advisors and elective courses. Advanced training (via lecture, discussion and laboratory research) is led by faculty located on 3 campuses (Carbondale, Edwardsville and Springfield) in 9 areas of study or Concentrations. Select students can enter the MBBS program through the Interdisciplinary Rotation mechanism, which provides laboratory rotation experience in multiple areas of research before a Concentration is chosen. Thesis M.S. and Ph.D. degrees, which require laboratory research, are available in the following Concentrations:

- Anatomy & Neurobiology
- Biochemistry & Molecular Biology
- Cell Biology, Immunology & Cancer Biology
- Medicinal Chemistry (Ph.D. only)
- Microbiology
- Molecular & Integrative Physiology
- Pharmacology & Neuroscience

Non-thesis M.S. degrees are also available in Biomedical Science, Pharmacology & Neuroscience and Public Health Lab Science. The non-thesis M.S. degrees in Biomedical Science and Pharmacology & Neuroscience are designed for students to improve their academic credentials in preparation for health professional school applications or to enhance their knowledge for a professional, teaching or research career. The Biomedical Science M.S. is taught in person with a broad-based curriculum. The Pharmacology & Neuroscience M.S. is designed for completion online with a more focused curriculum. Students participating in SIU's MEDPREP program can also obtain a non-thesis M.S. degree in Biomedical Science. The non-thesis M.S. in Public Health Lab Science is designed to prepare students for a career in public health laboratory science and requires substantial training in relevant laboratory settings.

The MBBS Program also offers a post-baccalaureate certificate in Anatomy that provides students an opportunity to become proficient in anatomy teaching to be more competitive in the job market for this field.

Interdisciplinary Rotation Students

The Interdisciplinary Rotation mechanism is designed for students to explore multiple areas of research before choosing a Concentration to pursue a thesis M.S. or Ph.D. degree. In the application, students will identify their interest in Interdisciplinary Rotations and then select either the Carbondale or Springfield campus. Students admitted as Interdisciplinary will select three rotations with participating faculty from any of the Concentrations on their respective campus. The curriculum in the first semester of study will include MBBS 500 (Introduction to Scientific Communication), MBBS 502 (Research Experience through Laboratory Rotations), MBBS 504 (Fundamentals for Graduate Research) and 1-3 elective courses. Students should declare their chosen Concentrations before the second semester of study.

Admission and Application

The minimum requirement for admission to the MBBS Program is an undergraduate degree in one of the biological, chemical or physical sciences. However, each Concentration may have additional requirements for prerequisite courses. The minimum GPA requirement varies depending on the degree and the Concentration. Concentrations allow students to directly enter the Ph.D. program with a bachelor or master's degree. Many Concentrations also have an accelerated entry program where students in a M.S. program can transfer to the Ph.D. degree; however, the requirements for accelerated entry vary by Concentration.

Each applicant must submit an online application at gradschool.siu.edu/apply that contains the following:

1. A non-refundable $65 application fee, which must be paid by credit card.
2. Choose the degree of interest (M.S. or Ph.D.).
3. For thesis M.S. and Ph.D., students may select Interdisciplinary Rotations and rank up to 3 Concentrations.
4. Unofficial transcripts for all undergraduate and graduate coursework.
5. A resume or curriculum vitae.
6. At least 2 letters of recommendation.
7. A personal statement (1-2 pages) describing the applicant's motivation for graduate work, any research experience, and goals and ambitions for the future. Thesis M.S. and Ph.D. applicants must also identify 2-3 faculty members with whom their research interests align, with specific reasons for this selection.

While not required, applicants are strongly encouraged to submit Graduate Record Examination (GRE) general test scores. International students whose native language is not English will be required to take an English proficiency exam using TOEFL, IELTS, or Duolingo unless exemptions apply.

Financial Assistance

The MBBS Graduate Program offers financial assistance to graduate students through assistantships that include a stipend and a tuition waiver. Research assistantships are the most common, but some Concentrations offer Teaching assistantships. SIU also awards Fellowships on a competitive basis. Financial assistance depends on availability, the student's qualifications and their academic status. Continued financial support is contingent upon the student's satisfactory progress toward the degree and good academic standing.

The non-thesis M.S. degrees in Biomedical Science and Pharmacology & Neuroscience do not provide financial support to students. Students in these programs must pay standard tuition rates for graduate programs.

Performance Requirements to Maintain Good Academic Standing

A cumulative GPA of 3.0 (A = 4.0) in all graduate coursework is required to remain in the MBBS graduate program. However, some Concentrations may have additional requirements. In accordance with the Graduate School policy, if the cumulative GPA falls below 3.0, the student is placed on academic probation. If the cumulative GPA remains below 3.0 for two consecutive semesters (excluding summer), the student will be suspended from the program and the SIU Graduate School.

Master's Degree Requirements

Students must complete at least 30 credit hours of graduate courses to obtain a M.S. degree, where at least 21 credit hours are graded (A-F scale). All thesis M.S. students in the MBBS program must take the following courses: MBBS 500 (Introduction to Scientific Communication), MBBS 501 (Advanced Scientific Communication), MBBS 504 (Fundamentals for Graduate Research) and MBBS 540 (Responsible Conduct of Research). Additional required courses are specified by each Concentration. The curriculum for the non-thesis M.S. degrees vary by Concentration.

While most non-thesis M.S. degrees are coursework only, the non-thesis M.S. degree in Pharmacology & Neuroscience requires a capstone project. Students pursuing a thesis M.S. degree should take at least 3 credit hours from MBBS 599A-H (Thesis Research) and should create a written or oral research

proposal that is approved by their research advisor and the majority of their thesis committee. Once thesis research is complete, the student will present their work as a public seminar and should pass the oral thesis defense examination in a closed session with their committee. The majority of the thesis committee must approve the written thesis as well as the oral defense for completion of the degree. Some Concentrations may have additional requirements for thesis M.S. degree completion.

Doctoral Degree Requirements

The Ph.D. degree in the MBBS program is awarded for high achievement in one of our Concentrations as measured by the student's ability to pass the preliminary exam and to create an original research project for their dissertation. Twenty-four credit hours of graduate coursework is needed to complete the residency requirement which must include the following courses: MBBS 500 (Introduction to Scientific Communication) and MBBS 501 (Advanced Scientific Communication), as well as the two Research Tool courses. Additional required courses are specified by each Concentration.

Research Tools

All Ph.D. students must acquire competence in two Research Tools. Students may fulfill this requirement by taking MBBS 504 (Fundamentals for Graduate Research) and MBBS 540 (Responsible Conduct of Research). Students in the Medicinal Chemistry Concentration may substitute CHEM 531 (Introduction to Analytical Separations) or CHEM 561 (Molecular Orbital Theory) for MBBS 504. Students may also complete the Research Tool requirement by taking a different course that is approved by the Director of their Concentration.

Residency

The residency requirement for Ph.D. students is satisfied by the completion of 24 credit hours of SIU graduate coursework as a doctoral student within a period not to exceed four calendar years. For students enrolled in the Medicinal Chemistry Concentration or the Pharmacology & Neuroscience Co-Op Ph.D. program, graduate credit at SIUE will count toward residency. No more than six hours from MBBS 600A-H (Dissertation Research) may be applied toward the fulfillment of the residency requirement.

Preliminary Exam and Research Proposal

After completion of the required courses, Ph.D. students must pass a preliminary exam, whose format will vary depending on the Concentration. In addition, students should create a written research proposal that is presented as a seminar and is approved by their research advisor and the majority of their dissertation committee.

Admission to Candidacy

Once Ph.D. students have fulfilled the residency requirement, passed the preliminary exam, and met the Research Tool requirement, the Director of the student's Concentration will recommend their admission to candidacy for approval by the Dean of the Graduate School.

Dissertation Defense

After admission to candidacy, Ph.D. students must complete 24 credit hours from MBBS 600A-H (Dissertation Research) and meet with their committee at least once a year. Once dissertation research is complete, the student will present their work as a public seminar and should pass the oral defense examination in a closed session with their committee. The majority of the dissertation committee must approve the written dissertation, as well as the oral defense for completion of the degree. Some Concentrations may have additional requirements for Ph.D. degree completion.

Anatomy and Neurobiology Concentration

The Anatomy & Neurobiology Concentration offers opportunities to study a wide array of topics within its fields and to earn the M.S. or Ph.D. degree. A degree from the Anatomy & Neurobiology Concentration

prepares students for careers in education and academic or health industry research or for further education in a health professional program. The Anatomy & Neurobiology Concentration faculty cover a broad variety of research areas so that the program offers opportunities for advanced training in human anatomy, histology, cell biology, neuroscience and neuroanatomy, and neurophysiology of human and animal behavior. Thus, students are advised to develop a plan of coursework which will allow them to acquire a broad knowledge of the field prior to focusing on a more precise research area. Each semester, students are expected to be engaged in a training assignment which supplements formal coursework and will consist of research or teaching or both. A committee will be developed for each student to guide them with development of a coursework program of study and to advise them on their research plan and its execution. All graduate training plans are subject to approval by the Anatomy & Neurobiology faculty.

Admission Criteria

Applicants to the Anatomy & Neurobiology Concentration must have earned a B.S. or B.A. degree with a major or minor in a life, chemical, or physical science from an accredited institution of higher learning. They must have taken basic biology and chemistry courses and it is recommended that they have taken cellular biology, physiology, and biochemistry courses. Strong applicants with deficiencies in an area may be admitted, but there may be requirements for additional coursework during graduate study and/or the research areas available to them may be limited. It is preferred, but not required, that the applicants to the Ph.D. degree have a M.S. degree in one of these areas. Applicants may be admitted to the doctoral program with a B.S. degree only; however, only very strong applicants (see below) will be considered.

For admission to the M.S. program, the Anatomy & Neurobiology Concentration requires a cumulative undergraduate grade point average (GPA) of 2.7 or better (using a grading scale where A=4.0) on the entire last undergraduate GPA earned at the time of application. For students with an undergraduate degree only, direct admission into the Anatomy & Neurobiology Ph.D. program requires a cumulative GPA of 3.0 and evidence of the potential for excellent performance. Additional course work may be required by the advisory committee to rectify any noted deficits. A cumulative GPA of 3.0 in any graduate level work is required for admission to either the M.S. and Ph.D program. Students may also enter the Ph.D. degree from the M.S. program without completing a thesis in a process called Accelerated Entry which requires a cumulative GPA of 3.0 in graduate coursework.

Financial Assistance

Fellowships or research assistantships may be available through the Anatomy & Neurobiology Concentration for qualified thesis M.S. and Ph.D. applicants. Student performance is evaluated annually by the student's advisor and the Graduate Program Committee and is documented in an annual report. The evaluation assesses any assigned duties which are relevant to the graduate assistantship as well as coursework and research performance. The Graduate School requires that students maintain an overall "B" average (3.0) in graduate coursework to remain in good academic standing. Research assistantships or fellowship are renewed only when performance evaluations are satisfactory. If it is determined that satisfactory progress towards the degree has NOT been made, as documented in the annual progress report, financial support may be terminated.

Degrees and Requirements

M.S. MBBS Anatomy & Neurobiology Concentration

All M.S. students in the Anatomy & Neurobiology Concentration will choose a faculty member as their Research Advisor and together they will develop a Thesis Committee to advise the student throughout their degree. The committee must consist of at least three graduate faculty members, two of whom must be from the Anatomy & Neurobiology Concentration. A committee approval form must be completed at this time and filed with the departmental administrative assistant. Members of the Thesis Committee will provide expertise in or complementary to the student’s research area and offer guidance in the development of a course work plan and the student’s research. Each thesis M.S. student is required to complete core coursework, that is supplemented with relevant electives. The student should meet with the committee yearly, or more often if needed, to discuss student progress. Failure to make adequate progress may result in dismissal from the program.

The Anatomy & Neurobiology Concentration thesis MS degree requires the completion of a total of 30 credit hours at the 500-level. Of these total credit hours, at least 21 hours must be graded (*A*, *B*, or *C*). At least 15 of the total 30 credit hours must be 500-level courses taken at SIU. Of these 15, a minimum of 3 credit hours of MBBS 599A (Thesis Research - Anatomy & Neurobiology) is required. More than three credit hours of MBBS 599A may be taken; however, only six hours may be applied toward the 500-level course requirement. All thesis MS students should take at least 1 credit hour of MBBS 500 (Introduction to Scientific Communication) and MBBS 501 (Advanced Scientific Communication), as well as MBBS 504 (Fundamentals for Graduate Research) and MBBS 540 (Responsible Conduct of Research). Note: Coursework hours listed are minimum requirements. Additional courses may be added at the discretion of the student's Thesis Committee.

Preliminary Exam

Upon completion of coursework, there will be a preliminary exam to consist of a written research proposal that is presented to and defended before the Thesis Committee.

Thesis M.S. MBBS Anatomy & Neurobiology Concentration

The thesis should be a written document describing original research concerning a specific neurological or anatomical problem or concerning an issue related to the Research Advisor's expertise. The work should be completed under the research advisor's supervision and have the Thesis Committee's approval. The thesis should include: a literature review, a statement of the hypothesis, a description of the set of experiments which test the hypothesis by appropriate methods, appropriate analyses of the results, and a discussion which interprets the work and relays its significance. Once completed, the student will present their work as a public seminar which will be followed by a closed oral examination by the Thesis Committee. The examination will cover the thesis and other relevant issues related to the discipline of the work.

Non-Thesis M.S. MBBS Anatomy & Neurobiology Concentration

A non-thesis M.S. degree may be conferred under extenuating circumstances as decided and recommended by the student's Thesis Committee. Details of requirements will be determined by the committee based upon the student's situation.

Ph.D. MBBS Anatomy & Neurobiology Concentration

As established by the Graduate School, the base requirements for the Ph.D. degree in the Anatomy & Neurobiology Concentration are 24 credit hours of SIU graduate coursework to meet the residency requirement, completion of Research Tool courses, and 24 hours of MBBS 600A (Dissertation Research - Anatomy & Neurobiology). Of the total credit hours completed, at least 10 of these must be graded (*A*, *B*, *C*) hours. Each student is required to complete at least 1 credit hour of MBBS 500 (Introduction to Scientific Communication) and MBBS 501 (Advanced Scientific Communication), and the Research Tool requirement [MBBS 504 (Fundamentals for Graduate Research) and MBBS 540 (Responsible Conduct of Research)]. The remaining credit hours can be selected from relevant electives. For completion of the Ph.D. degree, any additional requirements are determined by the student's Dissertation Committee. The student should meet with the committee yearly, or more often if needed, to discuss student progress. Failure to make adequate progress may result in dismissal from the program.

Dissertation Committee

All Ph.D. students in the Anatomy & Neurobiology Concentration will choose a faculty member as a Research Advisor and together they will develop a Dissertation Committee which will advise them throughout their degree. Members of the Dissertation Committee will provide expertise in or complementary to the student's research area and offer guidance in the development of a course work plan and their research. The Dissertation Committee will consist of at least 5 members of the SIU graduate faculty, one of whom is from outside the student's Concentration.

Preliminary Exam

After completion of all coursework, the preliminary examination for doctoral students is to be a written document in the format of an NIH F31 training grant, related to the student's research and approved by their Dissertation Committee. Development of an application for submission to a specific granting

agency is strongly encouraged and MAY be required by the student's Research Advisor. Approval of the document by the Dissertation Committee is to be followed by a presentation of the proposal and then an oral examination of the student in a closed session by the Dissertation Committee.

Dissertation

The dissertation should be a written document describing original research concerning a specific neurological or anatomical problem or concerning an issue related to the advising Research Advisor's expertise. The work should be completed under the Research Advisor's supervision and have the Dissertation Committee's approval. The dissertation should include: a literature review, a statement of the hypothesis, a description of the set of experiments which test the hypothesis by appropriate methods, appropriate analyses of the results, and a discussion which interprets the work and relays its significance. Once completed, the student will present a final public seminar which will be followed by a closed oral examination of the student by the Dissertation Committee. The examination will cover the dissertation and other issues related to the discipline of the work.

Biochemistry and Molecular Biology Concentration

The Biochemistry and Molecular Biology Concentration offers both M.S. and Ph.D. degrees. The faculty that participate in this Concentration are in the Division of Biochemistry and Molecular Biology in the Department of Biomedical Sciences (School of Medicine) on the Carbondale campus. The program is designed to offer advanced training (via lecture, discussion and laboratory) in biochemistry, molecular biology, cell biology, and structural biology.

Admission Criteria

Prospective graduate students should have an undergraduate degree with a grade point average of 2.70 or better on the the last undergraduate GPA earned in any of the biological, chemical or physical sciences. The applicants are recommended to have completed courses in biology, chemistry, physics and mathematics. Strong candidates with deficiencies in any area may be admitted, but such deficiencies may restrict the research areas available to the student and may lead to requirements for additional courses during graduate study. An advisory system in the program (see below) will help students in planning their course of study. Prospective students for the thesis M.S. degree and the Ph.D. degree in the Biochemistry and Molecular Biology Concentration are encouraged to contact program faculty in areas of their research interest. Students may be admitted to the Ph.D. program with a bachelor's or master's degree. Students pursuing a thesis M.S. degree in the Biochemistry and Molecular Biology Concentration can be admitted to the Ph.D. program via accelerated entry or the master's equivalency option by the recommendation of the faculty and approval of the Graduate School.

Financial Assistance

Fellowships and assistantships are available through the Biochemistry and Molecular Biology Concentration for qualified applicants.

Advisement and General Requirements

For thesis M.S. and Ph.D. students in the Biochemistry and Molecular Biology Concentration, the Director of Graduate Studies for the Concentration will assist each incoming student with the initial planning of a program of study and will advise the student until a Research Advisor is chosen.

Research Director and Graduate Committee Selection

Each student in the Ph.D. or thesis M.S. in the Biochemistry and Molecular Biology Concentration should select a Research Advisor as soon as possible during the first year. The graduate committee for thesis M.S. students shall consist of the Research Advisor (committee chair), and two additional graduate faculty members, including at least one from the Biochemistry and Molecular Biology Concentration. The graduate committee for Ph.D. students shall consist of at least five graduate faculty members to include the Research Advisor (committee chair), three faculty members from the Program with at least one from the Biochemistry and Molecular Biology Concentration and one member from outside the Concentration.

Graduate Committee Functions

For the thesis M.S. and Ph.D. degrees in the Biochemistry and Molecular Biology Concentration, the graduate committee will:

1. plan and approve the student's program of study.
2. review the student's progress in courses and suggest and approve changes in the program of study.
3. evaluate the student's progress in research and make appropriate recommendations.
4. meet and determine, on a yearly basis, whether a student is making satisfactory progress and may continue toward a degree. If continuation is denied, the committee must notify the Director of Graduate Studies for the Biochemistry and Molecular Biology Concentration, in writing, of the reasons for this denial.
5. administer written and oral preliminary examinations to the Ph.D. student.
6. read and evaluate the student's thesis or dissertation.
7. conduct the required oral examinations for M.S. and Ph.D. defenses.

Formal Course Requirements

The formal core course requirement for both the thesis M.S. and Ph.D. degrees can be met by taking a minimum of one credit hour of MBBS 500 (Introduction to Scientific Communication), one credit hour of MBBS 501 (Advanced Scientific Communication), MBBS 504 (Fundamentals for Graduate Research), MBBS 540 (Responsible Conduct of Research), MBBS 554A (Biochemistry I) and MBMB 554B (Biochemistry II) or their equivalent. All course requirements are minimum requirements. Additional courses may be required by the student's graduate committee to meet any deficiencies or to provide proficiency in a specialized area. The Director of Graduate Studies for the Biochemistry and Molecular Biology Concentration, with the advice of the student's graduate committee, may designate other courses within or outside of the Concentration to fulfill formal course requirements. Any course (or its equivalent) that meets the requirements of the MBBS graduate program whether taken at SIU or at any other institution before admission to the MBBS Program does not need to be repeated. Course equivalency will be determined by the Director of Graduate Studies for the Biochemistry and Molecular Biology Concentration in consultation with the appropriate committee or member of the faculty.

Thesis M.S. students must also take a minimum of three and maximum of six credit hours of MBBS 599B (Thesis Research-Biochemistry and Molecular Biology), prepare a thesis on the research project and pass a final oral examination, which serves as the comprehensive examination.

A non-thesis M.S. degree may be conferred under extenuating circumstances as decided and recommended by the student's Thesis Committee. Details of requirements will be determined by the committee based upon the student's situation.

Preliminary Examination and Dissertation for the Ph.D. degree in the Biochemistry and Molecular Biology Concentration

Each student in the doctoral program must pass a preliminary examination, complete the Research Tool courses and meet the Graduate School residency requirement before being advanced to candidacy. The students can take the preliminary examination after completing the formal course requirements.

The student's graduate committee will prepare and administer a written preliminary examination covering various areas of molecular biology and biochemistry. The prospectus should address the proposed graduate research project, and be written in the NIH (National Institutes of Health) approved format. The prospectus shall be available to the committee members at least 14 days prior to the date of the initial examination which will include a presentation of the proposed research.

A written preliminary examination score of at least 80 percent is required before a student can proceed to the oral portion of the preliminary examination. Upon satisfactory completion of the written examination, the candidate will meet with the committee as a whole and discuss the prospectus in detail. The committee will then conduct an oral preliminary examination. At this time, the committee may ask in-depth questions about the research project and other areas of molecular biology and biochemistry. At least four of the five committee members must judge the oral performance acceptable for a student to pass the preliminary examination overall. In the event that either the written or oral preliminary examination is failed, a student may request only one re-examination.

Successful completion of both written and oral examinations is required before a student can be advanced to candidacy for the Ph.D. degree. After admission to candidacy, the student must earn at least 24 credit hours of MBBS 600B (Dissertation Research – Biochemistry and Molecular Biology), prepare and defend a dissertation, and present a public seminar based on the student's research.

Biomedical Science Concentration

The Biomedical Science Concentration provides broad interdisciplinary graduate training in the biomedical sciences leading to a non-thesis M.S. degree. The Concentration utilizes the faculty, facilities, and courses from the Physiology, Anatomy, Biochemistry, Microbiology, Pharmacology, and MMICB (Medical Microbiology, Immunology and Cell Biology) Academic Units. The Concentration is designed for those students who desire a broad-based curriculum in the Biomedical Sciences in preparation for health professions school matriculation or a health professions or research career.

Admission

Applicants must meet the minimal requirements of the Graduate School before being considered for admission to the Biomedical Science Concentration. In addition to Graduate School admission requirements, applicants must hold a bachelor's degree. Completion of professional school prerequisite coursework is strongly recommended:

- Two semesters with laboratory in the biological sciences;
- Two semesters with laboratory of major or pre-medical general chemistry;
- Two semesters with laboratory of major or pre-medical organic chemistry, or a one year organic chemistry/ biochemistry sequence with 2 credits of laboratory;
- Two semesters with laboratory of major or pre-medical physics.

Advisement

Students are advised by the Biomedical Science Concentration director and faculty in the Physiology, Anatomy, Microbiology, Biochemistry, Pharmacology, and MMICB (Medical Microbiology, Immunology and Cell Biology) Academic Units. Advisement arrangements are made immediately after admission. A program of course work must be approved by the advisor and filed with the director no later than the fourth week of the first semester of registration in the program. Any deviation from the course work program during the student's tenure must be approved by the advisor and filed with the director.

Graduation Requirements

Graduation requirements include a total of 30 credit hours of 500-level courses with the following provisions:

- A minimum of 21 graded hours (A, B, C) in biological sciences content areas, including biology, microbiology, physiology, anatomy, molecular biology, biochemistry, pharmacology, neuroscience and biomedical science, or statistics.
- A 15 credit hour core curriculum consisting of:
- MBBS 505 (Biomedical Science Program Seminar): 1 semester, 1 credit hour total.
- MBBS 506 (Scientific Approach and Application) 1 semester, 2 credit hours total.
- MBBS 554A & 554B (Biochemistry I & II) or equivalent (6 credit hours total).
- 3 credit hours of Human, Mammalian, or Cellular Physiology.
- 3 credit hours of Human Anatomy.
- Electives totaling a minimum of 15 credit hours.
- Completion of a program-administered mock national professional school entrance examination.

Biomedical Science Concentration for MEDPREP

Admission Requirements

Each student must apply and be accepted to the MEDPREP program in the SIU School of Medicine first.

Advisement

Students are advised by MEDPREP faculty in the SIU School of Medicine. Advisement arrangements are made immediately after admission.

Graduation Requirements

Graduation requirements include a total of 47 credit hours of 500-level courses with the following provisions:

- A minimum of 18 hours of formal coursework in MEDPREP
- MBBS 554A and MBBS 554B (Biochemistry I & II or equivalent): 6 credit hours total.
- 3 credit hours of Human or Mammalian physiology.
- 3 credit hours of Human Anatomy.
- Completion of a program-administered mock national professional school entrance examination.

Cell Biology, Immunology and Cancer Biology Concentration

Graduate courses of study are offered that lead to the M.S. and Ph.D. degree in Cell Biology, Immunology and Cancer Biology. The Concentration is designed to offer advanced training (via lecture, discussion and laboratory) focused in the area of cell biology, immunology, cancer biology, and molecular biology. Both thesis M.S. and Ph.D. programs require laboratory research and the completion of a thesis or dissertation, respectively. A non-thesis M.S. degree is available under special circumstances.

Admission Criteria

Prospective graduate students should have an undergraduate degree in any of the biological, chemical or physical sciences. The applicants are recommended to have completed courses in biology, organic chemistry, physics and mathematics. Strong candidates with deficiencies in any area may be admitted, but such deficiencies may lead to requirements for additional courses during graduate study. Students may be admitted to the doctoral program with a bachelor's or master's degree. M.S. students can be admitted to the doctoral program via accelerated entry or the master's equivalency option by the recommendation of the faculty and approval of the Graduate School. An advisory system (see below) will help students in planning their course of study.

The Cell Biology, Immunology and Cancer Biology Concentration requires a cumulative grade point average (GPA) of 2.7 or better (A = 4.0) on the entire last undergraduate GPA earned at the time of application for admission into the thesis M.S. degree, and a GPA of 3.0 in graduate level work for admission into the Ph.D. degree. An excellent record in undergraduate coursework and a strong recommendation of the Cell Biology, Immunology and Cancer Biology admissions committee is required for direct admission to the doctoral program after a bachelor's degree. Applicants are encouraged but are not required to submit Graduate Record Examination (GRE) general test scores. International students whose native or first language is not English must take one of the Graduate School-approved English proficiency tests no more than 24 months prior to the term for which they seek admission.

Financial Assistance

Fellowships and assistantships are available through the program for qualified applicants. The Graduate School governs limits on support. Renewal of research assistantships or fellowship support is contingent upon satisfactory performance evaluations as documented in an annual progress report and outlined in the Cell Biology, Immunology and Cancer Biology Concentration operating paper.

Degree types offered

- Master of Science (M.S.) - Non-thesis (coursework only, under special circumstances)
- Master of Science (M.S.) - Thesis
- Doctor of Philosophy (Ph.D.) - Dissertation

Advisement and General Requirements

The Director of Graduate Studies for the Cell Biology, Immunology and Cancer Biology Concentration will assist incoming students with initial planning of a program of study and will advise the student until a Research Advisor is chosen. M.S. and Ph.D. students should select a Research Advisor as soon as possible during the first year. The graduate committee for thesis M.S. students shall consist of the Research Advisor (chair), and two (2) additional graduate faculty members from the Cell Biology, Immunology and Cancer Biology Concentration. The graduate committee for Ph.D. students shall consist of at least five (5) graduate faculty members to include the Research Advisor (chair), and at least one member whose primary faculty appointment lies outside the Cell Biology, Immunology and Cancer Biology Concentration. The Program Director, if not otherwise appointed, is an ex-officio (non-voting) member of every graduate committee. There is no committee requirement for the non-thesis MS.

Graduate Committee Functions

The graduate committee for thesis M.S. and Ph.D. students will:

1. Plan and approve the student’s program of study.
2. Review the student’s progress in courses and suggest and approve changes in the program of study.
3. Evaluate the student’s progress in research and make appropriate recommendations.
4. Meet and determine, on a yearly basis, whether a student is making satisfactory progress and may continue toward a degree. If continuation is denied, the committee must notify the Director of Graduate Studies for the Cell Biology, Immunology and Cancer Biology Concentration, in writing, of the reasons for this denial.
5. Administer written and oral preliminary examinations to the doctoral student.
6. Read and evaluate the student’s M.S. thesis or Ph.D. dissertation.
7. Conduct the required oral examinations for M.S. and Ph.D. students.

Formal Course Requirements

All M.S. and Ph.D. students in the Cell Biology, Immunology and Cancer Biology Concentration are required to complete core coursework that is supplemented with appropriate electives. Student should complete a minimum of one credit hour of MBBS 500 (Introduction to Scientific Communication) and one credit hour of MBBS 501 (Advanced Scientific Communication) for each semester in residence. Other core courses are MBBS 504 (Fundamentals for Graduate Research), MBBS 540 (Responsible Conduct of Research), and MBBS 530 (Advanced Cellular Biology). Additional courses are selected with the approval of the student’s graduate committee, Research Advisor or the Director of Graduate Studies for the Cell Biology, Immunology and Cancer Biology Concentration. Equivalent coursework completed at other institutions or in other collegiate units may be substituted for certain course requirements for graduate course work if approved by the Cell Biology, Immunology and Cancer Biology Concentration and the Graduate School.

Thesis M.S. MBBS Cell Biology, Immunology and Cancer Biology Concentration

All M.S. degrees require a total of 30 credit hours at the 500-level and at least 21 of these 30 hours must be graded hours. The thesis M.S. degree also requires at least 8 credit hours in research [MBBS 515C (Master's Degree Research-Cell Biology & Immunology), MBBS 515D (Master’s degree research-Cancer Biology), MBBS 598C (Research-Cell Biology & Immunology), or MBBS 598D (Research-Cancer Biology)]. Students must also take a minimum of three and maximum of six credit hours of MBBS 599C (Thesis Research-Cell Biology & Immunology) or MBBS 599D (Thesis Research-Cancer Biology), prepare a thesis on the research project and pass a final oral examination, which serves as the comprehensive examination.

Non-Thesis M.S. MBBS Cell Biology, Immunology and Cancer Biology Concentration

A non-thesis M.S. degree may be conferred under extenuating circumstances as decided and recommended by the student's Thesis Committee. Details of requirements will be determined by the committee based upon the student's situation.

In accordance with the Graduate School, maximum coursework for full-time graduate students is 16 credit hours per semester. Nine (9) credit hours is considered a normal course load and is the minimum required for students supported by assistantships. Nine (9) credit hours is the minimum for fall/spring semesters while three (3) credit hours is the minimum for summer semesters.

Preliminary Examination and Dissertation for the Ph.D. MBBS Cell Biology, Immunology and Cancer Biology Concentration

Doctoral students must pass a preliminary examination, complete the Research Tools courses [Fundamentals for Graduate Research (MBBS 504) and Responsible Conduct of Research (MBBS 540)], and meet the Graduate School residency requirement before being advanced to candidacy. The students can take the preliminary examination after completing the formal course requirements. The student's graduate committee will prepare and administer a written preliminary examination covering various areas of Cell Biology, Immunology and Cancer Biology, with particular emphasis in the area of study declared by the student. This declaration is communicated through a prospectus of a dissertation composed of: (1) a proposal for the dissertation research, (2) biographical information on the candidate, and (3) a list of the courses taken during the candidate's graduate program. The proposal should address the proposed graduate research project, and be written in the NIH (National Institutes of Health) or NSF (National Science Foundation) approved format. The prospectus shall be available to the committee members at least 14 days prior to the date of the examination. A written examination score of at least 80 percent is required before a student can proceed to the oral portion of the preliminary examination. Upon satisfactory completion of the written examination, the candidate will meet with the committee as a whole and discuss the prospectus in detail. The committee will then conduct an oral preliminary examination. At this time, the committee may ask in-depth questions about the research project and other areas of cell biology, immunology and cancer biology. At least four (4) of the five (5) committee members must judge the oral performance acceptable for a student to pass the preliminary examination overall. If either the written or oral preliminary examination is failed, a student may request only one re-examination. Successful completion of both written and oral examinations is required before a student can be advanced to candidacy for the Ph.D. degree. After admission to candidacy, the student must earn at least 24 dissertation credit hours [MBBS 600C (Dissertation Research-Cell Biology & Immunology) or MBBS 600D (Dissertation Research-Cancer Biology)], prepare and defend a dissertation, and present a public seminar based on the student's research.

Medicinal Chemistry Concentration

Graduate courses may be taken leading to a Ph.D. degree in Multidisciplinary Biomedical and Biological Sciences with a concentration in Medicinal Chemistry. The Medicinal Chemistry Concentration offers advanced training in synthetic organic chemistry and/or computational chemistry in order to design new molecules toward drug development. The concentration also includes approaches to improve existing drugs or clinical candidates by optimizing their properties and structure. Medicinal chemistry enables future scientists to take a broad look at a therapeutic area and undertake a hands-on training in healthcare. Once awarded a Ph.D., and depending upon their research project, they can work in pharmaceutical or biotechnology sectors, as well as software companies and academia. Students entering the graduate training program are advised to plan the coursework so as to acquire a broad knowledge of the field before emphasizing on either synthetic chemistry or computational chemistry. Their advisor will help students plan their work.

Admission Criteria

The minimum requirement for admission to the Ph.D. degree in the Medicinal Chemistry Concentration is an undergraduate degree in chemistry or a related subject with a cumulative grade point average

(GPA) of 3.0 or better (A = 4.0) on the entire last undergraduate GPA earned at the time of application. Applicants with an M.S. degree in Pharmaceutical Sciences or a related field should have a cumulative GPA of 3.0 in all graduate coursework.

Students entering the Ph.D. in the Medicinal Chemistry Concentration may be admitted directly from a master's program without completing a thesis in a process called Accelerated Entry. Accelerated entry into the Ph.D. track requires completion of at least 1 semester of M.S. course work at SIU and a cumulative GPA of at least 3.0 in graduate coursework.

Degree Types Offered

- Doctor of Philosophy (Ph.D.)
- Non-thesis M.S. (limited to special circumstances)

Ph.D. MBBS Medicinal Chemistry Concentration

The Ph.D. degree in the Medicinal Chemistry Concentration is a research-intensive graduate program wherein students take core courses in the Concentration and Research Tools, along with completing a comprehensive and original research project. The project is the focus of the dissertation, which should be, original research that will make significant contribution to the body of scientific knowledge. Students seeking a Ph.D. degree will develop critical thinking skills and mastery in oral and written communication. All deadlines and formats should follow the guidelines provided by the Graduate School.

Graduation Requirements

1. Completion of core coursework including PHPS 420 (Principles of Pharmacology), PHPS 500 (Current Targets for Drug Discovery), PHPS 501 (Principles of Rational Drug Discovery), CHEM 541 (Advanced Organic Chemistry), and CHEM 551 (Advanced Biochemistry) with a grade B or better in each course while maintaining a cumulative GPA of 3.0 (A = 4.0) in all graduate coursework. These courses are offered on the SIUE campus.
2. Completion of four credit hours of MBBS 500 (Introduction to Scientific Communication) and one credit hour of MBBS 501 (Advanced Scientific Communication) during each remaining semester in residence, with courses taken through both the SIUC and SIUE campuses.
3. Completion of MBBS 540 (Responsible Conduct of Research) and either CHEM 561 (Advanced Physical Chemistry) or CHEM 531 (Advanced Analytical Chemistry) as Research Tool courses, offered jointly by the SIUC and SIUE campuses.
4. Completion of a comprehensive written preliminary examination with a grade B or better. Students who do not pass the preliminary examination will be allowed to repeat it one time, no sooner than three months after the initial examination.
5. The residency requirement for the Ph.D. in the Medicinal Chemistry Concentration must be fulfilled after admission to the doctoral program and before formal admission to doctoral candidacy. The residency requirement is satisfied by completion of 24 hours of graduate credit on campus as a Ph.D. student in Medicinal Chemistry within a period not to exceed 4 calendar years. A Ph.D. in Medicinal Chemistry student will not be permitted to count more than 6 credit hours of MBBS 600E (Dissertation Research - Medicinal Chemistry) towards the 24 credit hour residency requirement. To meet the residency requirement, students may enroll in any other course(s) in addition to the core courses and Research Tool courses that meets with the approval of their advisor and dissertation committee, e.g. any formal departmental or non-departmental courses and/or MBBS 590E or MBBS 595E (Readings - Medicinal Chemistry) MBBS 598E (Research - Medicinal Chemistry).
6. Admission to candidacy. The student is admitted to Ph.D. in Medicinal Chemistry candidacy after having completed the residency requirement, the Research Tool requirement and passing the comprehensive written preliminary examination. Admission to candidacy is granted by the Dean of the Graduate School upon recommendation of the student’s dissertation committee or the Graduate Program Committee. The Ph.D. in Medicinal Chemistry degree may not be conferred fewer than six months nor more than five years after admission to candidacy, except upon approval of the Dean of the Graduate School.
7. After admission to candidacy, the student must complete at least 12 credit hours of MBBS 600E and PHPS 600 from the SIUC and SIUE campuses. The student should prepare the dissertation document to meet the requirements of the dissertation committee and the Graduate School.

8. A dissertation proposal is required before the student begins significant research. The dissertation proposal should be written in the style of a NIH F31 grant with some modifications. An oral proposal will be presented as a public seminar. Immediately following this seminar, the proposal will be defended before the student's dissertation committee. Students must pass both the oral and written portions of the dissertation proposal as determined and documented by their dissertation committee.
9. The student must meet formally with the dissertation committee at least once between defense of the proposal and the dissertation defense. The purpose of this interim meeting is to review progress and to modify the planned experiments, if deemed necessary. While not required, annual meetings with the dissertation committee are recommended.
10. The dissertation defense and seminar will occur no earlier than one year after the dissertation proposal defense and after at least one primary research paper with the student as first author has been submitted for publication to a peer-reviewed journal. The dissertation is expected to be a competent, original research project that will make significant contribution to the body of scientific knowledge. It should include a statement of the problem, an adequate review of literature, a careful analysis of results by whatever methods are appropriate, and an interpretation of the findings.
11. A preliminary draft of the dissertation should be reviewed and approved by the research advisor and a corrected copy should be submitted to other committee members.
12. Results of the dissertation research must be defended in a seminar which must be announced publicly in advance. Any member of the University community may attend the dissertation seminar and may participate in the questioning and discussion, subject to reasonable time limitations imposed by the committee chair. Immediately following the dissertation seminar, a final oral examination will be conducted by the student's dissertation committee. Only members of the committee may participate in the oral examination that occurs after the seminar and may vote or make recommendations concerning acceptance of the dissertation and final examination. A student will be recommended for the degree if members of the dissertation committee judge both the dissertation seminar and the performance at the final oral examination to be satisfactory. If approved, a dissertation approval form will be completed, signed by the committee and the Chair of the Department of Pharmacology and submitted to the Graduate School. In the case of failure of the oral examination, it may be repeated once, no sooner than three months after the first examination. Failure of the second examination will result in dismissal from the Medicinal Chemistry Graduate Program. If the written dissertation is unsatisfactory, the student will be allowed to revise the document and send to either the research advisor only or the whole dissertation committee for review and approval.
13. The student is responsible for electronically submitting the dissertation to the Graduate School, the Graduate Program Director, and their research advisor.
14. Students who have defended their dissertation but who missed the Graduate School deadline for final paper/thesis/dissertation submission to graduate in the same semester may register in MBBS 601 (Continuing Enrollment) until completion of the revised dissertation document. Students must be registered during the semester in which they graduate. Registering in MBBS 601 can negatively impact visa status; thus international students should discuss this issue with the Graduate Program Director.

Ph.D. Dissertation Committee

The dissertation committee for a student in the Ph.D. in the Medicinal Chemistry Concentration must have a minimum of six members: the student's research advisor (chair), two faculty members from SIUE's Department of Pharmaceutical Sciences, two faculty members from the Pharmacology and Neuroscience Concentration, and one faculty member from outside these departments/Concentrations. Members of these committees should be able to contribute significantly in the area of the student's research program.

Non-Thesis M.S. MBBS Medicinal Chemistry Concentration

A non-thesis M.S. degree may be conferred under extenuating circumstances as decided and recommended by the student's Dissertation Committee. Required courses include: PHPS 420 (Principles of Pharmacology), PHPS 500 (Current Targets for Drug Discovery), PHPS 501 (Principles of Rational Drug Discovery), CHEM 551 (Advanced Biochemistry), CHEM 541 (Advanced Organic Chemistry), CHEM 549 (Advanced Topics in Organic Chemistry), CHEM 559 (Advanced Topics in Biological Chemistry), CHEM 531 (Advanced Analytical Chemistry) and/or CHEM 561 (Advanced Physical

Chemistry), which are taught on the SIUE campus. Other details for the requirements will be determined by the committee based upon the student's situation.

Microbiology Concentration

The Microbiology Concentration offers both M.S. and Ph.D. degrees. The faculty that participate in this Concentration are in the Microbiology Program of the School of Biological Sciences within the College of Agricultural, Life, and Physical Sciences on the Carbondale campus. The Concentration is designed to offer advanced training (via lecture, discussion and laboratory) in bacteriology, immunology, pathogenesis, microbial physiology, molecular biology, biotechnology, environmental microbiology, and symbioses.

Admission Criteria

Prospective graduate students should have an undergraduate degree in any of the biological, chemical or physical sciences, with a grade point average (GPA) of 2.70 or better (A=4.00) on the entire last undergraduate GPA earned at the time of application. The applicants are recommended to have completed courses in biology, chemistry, physics and mathematics. Strong candidates with deficiencies in any area may be admitted, but such deficiencies may restrict the research areas available to the student and may lead to requirements for additional courses during graduate study. An advisory system in the program (see below) will help students in planning their course of study. Prospective students for the thesis M.S. degree and the Ph.D. degree in the Microbiology Concentration are encouraged to contact program faculty in areas of their research interest.

Students may be admitted to the Ph.D. track with a bachelor's or master's degree. Students in the thesis M.S. in the Microbiology Concentration can be admitted to the Ph.D. track via Accelerated Entry or the master's equivalency option by the recommendation of the faculty and approval of the Graduate School.

Financial Assistance

Fellowships and assistantships are available through the Microbiology Concentration for qualified applicants.

Advisement and General Requirements

For thesis M.S. and Ph.D. students in the Microbiology Concentration, a curriculum committee (composed of Microbiology faculty) will advise incoming students on an initial program of study. The Director of Graduate Studies for the Microbiology Concentration will advise the student until a Research Advisor is chosen.

Research Advisor and Graduate Committee Selection

Each student in the Ph.D. or thesis M.S. degrees in the Microbiology Concentration should select a Research Advisor as soon as possible during the first year. The graduate committee for thesis M.S. students shall consist of the Research Advisor (chair), one faculty member from the Microbiology Concentration, and one additional graduate faculty member (within or outside of the program). The graduate committee for Ph.D. students shall consist of at least five graduate faculty members to include the Research Advisor (committee chair), two faculty members from the Microbiology Concentration, and two other graduate faculty members (within our outside of the program).

Graduate Committee Functions

For the Microbiology Concentration, the graduate committee will:

1. Plan and approve the student's program of study.
2. Review the student's progress in courses and suggest and approve changes in the program of study.
3. Evaluate the student's progress in research and make appropriate recommendations.

4. Meet and determine, on a yearly basis, whether a student is making satisfactory progress and may continue toward a degree. If continuation is denied, the committee must notify the Director of Graduate Studies for the Microbiology Concentration, in writing, of the reasons for this denial.
5. Administer preliminary examinations to those students on the Ph.D. track.
6. Read and evaluate the student's thesis or dissertation.
7. Conduct the required thesis or dissertation defenses.

Formal Course Requirements

The formal core course requirement for both the thesis M.S. and Ph.D. degrees can be met by taking a minimum of one credit hour of MBBS 500 (Introduction to Scientific Communication), one credit hour of MBBS 501 (Advanced Scientific Communication) for each semester in residence, MBBS 504 (Fundamentals for Graduate Research), and MBBS 540 (Responsible Conduct of Research). Thesis M.S. students are also required to take four graded non-research MBBS courses with at least one course at the 500-level, a minimum of three and a maximum of six credit hours of MBBS 599F (Thesis Research - Microbiology), prepare a thesis on the research project, and pass a final oral defense. Additional course requirements for the Ph.D. track can be met by taking five graded non-research MBBS courses with at least two at the 500-level. All course requirements are minimum requirements. Additional courses may be required by the student's graduate committee to meet any deficiencies or to provide proficiency in a specialized area. The Director of Graduate Studies, with the advice of the student's graduate committee, may designate other courses within or outside of the Concentration to fulfill formal course requirements. Any course (or its equivalent) that meets the requirements of the MBBS graduate program whether taken at SIU or at any other institution before admission to the MBBS Program does not need to be repeated. Course equivalency will be determined by the Director of Graduate Studies for the Microbiology Concentration in consultation with the appropriate committee or member of the faculty.

Preliminary Examination and Dissertation for the Ph.D. MBBS Microbiology Concentration

Each student in the Ph.D. program must pass a preliminary examination, complete the Research Tool courses and meet the Graduate School residency requirement before being advanced to candidacy. The students should take the preliminary examination before the end of their third year and after completing the formal course requirements.

The preliminary examination is composed of a written research proposal and oral defense of the proposal. The prospectus should address the proposed graduate research project and be written in a NIH (National Institutes of Health) or NSF (National Science Foundation) approved format. The prospectus shall be available to the committee members at least 14 days prior to the date of the examination.

The proposal must be approved by 4 out of 5 of the committee members before a student can proceed to the oral portion of the preliminary examination. Following committee approval of the proposal, the candidate will meet with the committee for the oral preliminary examination. At this time, the committee may ask in-depth questions about the research project and other areas pertaining to the student's coursework. At least four of the five committee members must judge the oral performance acceptable for a student to pass the preliminary examination overall. If the oral portion of the preliminary examination is failed, a student may request only one re-examination.

Successful completion of the preliminary examination is required before a student can be advanced to candidacy for the Ph.D. After admission to candidacy, the student must earn at least 24 credit hours of MBBS 600F (Dissertation Research – Microbiology), prepare and defend a dissertation, and present a public seminar based on the student's research.

Molecular and Integrative Physiology Concentration

Graduate courses may be taken leading to a M.S. or Ph.D. degree in Multidisciplinary Biomedical and Biological Sciences with a Concentration in Molecular and Integrative Physiology. The graduate courses can also lead to a Certificate in Anatomy.

The Molecular and Integrative Physiology Concentration offers advanced training in mammalian physiology, vascular physiology, cell physiology, molecular biology, molecular endocrinology, neuroendocrinology, behavioral neuroscience, molecular neuroscience, molecular physiology in sensory

organs, reproductive biology, reproductive endocrinology, developmental biology and human anatomy. Students entering the graduate training program are advised to plan their coursework so as to acquire a broad knowledge of the field before emphasizing one of these sub-disciplines. The advisory system in the Molecular and Integrative Physiology Concentration is set up to help students plan their work.

Each term students must be engaged in a training assignment which supplements formal coursework and will consist of research or teaching or both. For the Molecular and Integrative Physiology Concentration, students are required to have participated in both types of activities. International students must pass a Test of Spoken English in order to have teaching assistantship support in the Division of Molecular and Integrative Physiology.

Thesis M.S. MBBS Molecular and Integrative Physiology Concentration

Admission Criteria

Interdisciplinary Rotations Entry Option

Students accepted into Interdisciplinary Rotations of the MBBS program may select the Molecular and Integrative Physiology Concentration after completion of at least three laboratory rotations in the MBBS 502 (Research Experience through Laboratory Rotations) course. Students should declare the Molecular and Integrative Physiology Concentration by the second semester of study.

Direct Entry Option

Prerequisites for graduate training in the Molecular and Integrative Physiology Concentration include an undergraduate degree in one of the biological, physical or behavioral sciences, preferably with one year each of physics, mathematics and chemistry. The Graduate School requires a cumulative grade point average (GPA) of 2.70 or better (*A* = 4.0) on the entire last undergraduate GPA earned at the time of application. A minimum GPA of 3.00 (*A* = 4.0) in all undergraduate and graduate work is needed for serious consideration.

Curriculum

A total of 30 credit hours at the 500-level is required for the master's degree. Of the total credit hours completed, at least 21 of these must be graded (*A*, *B*, *C*) hours. At least 15 of the total 30 credit hours must be 500-level courses taken at SIUC. Courses required for the MBBS thesis M.S. degree are: MBBS 500 (Introduction to Scientific Communication), MBBS 501 (Advanced Scientific Communication), MBBS 504 (Fundamentals for Graduate Research), MBBS 540 (Responsible Conduct of Research) and MBBS 599G (Thesis Research - Physiology minimum of 3 credit hours). More than three credit hours of MBBS 599G may be taken; however, only six may be counted toward the 500-level requirement. MBBS 511A and MBBS 511B (Advanced Mammalian Physiology) courses are required for the Molecular and Integrative Physiology Concentration and must be completed with a grade of B or better. If a student completed PHSL 410A and PHSL 410B with a grade of B or better as a SIUC undergraduate, two semesters of MBBS 590G (Readings – Physiology) may be taken in lieu of the MBBS 511A and MBBS 511B requirement. Each student is required to complete at least one semester of physiology teaching.

Committees

The Director of Graduate Studies for the Molecular and Integrative Physiology Concentration will act as an advisor to new direct-entry M.S. students until a Research Advisor is selected. The choice of a Research Advisor is a very important step and should be carefully considered. During the first semester, Interdisciplinary Rotation students and most direct entry students will rotate through three research laboratories to get acquainted with faculty members and research programs before selecting a Research Advisor who will direct the thesis research and help plan coursework. Students entering through the accelerated M.S. degree option will be encouraged to select an advisor at the time of entry into the program.

The functions of the Research Advisor are:

1. To provide guidance in the student’s research and the use of facilities.

2. To provide mentorship in conducting, evaluating and publishing scientific research.
3. To serve as chair of the Thesis Committee and consultant for selecting other members of the Thesis Committee.

The Thesis Committee should include the chair and at least three additional members from the graduate faculty, including one from outside the Molecular and Integrative Physiology Concentration. Members of the Thesis Committee should provide expertise in or complementary to the student's research area. The student should meet with the committee yearly or as needed to discuss research and academic progress.

All graduate training programs in the Molecular and Integrative Physiology Concentration are subject to approval of the Graduate Program Committee of the Division of Molecular and Integrative Physiology. The Graduate Program Committee will evaluate students at least annually. Continuation of assistantship support will be conditioned on satisfactory performance in the areas of academics, research and teaching. The student will provide documentation for each of these areas to the Graduate Program Committee. Academic performance will be based on good standing with the Graduate School (cumulative GPA=3.0). Satisfactory research performance will be based on accomplishments outlined in the student's documentation and an annual memo from the research mentor or Thesis Committee indicating progress in the area of research. Evaluation of teaching effectiveness will be carried out by the Graduate Program Committee from sources possibly, but not limited to, course coordinator, student evaluations and direct observation of classes by the Graduate Program Committee.

Thesis

The thesis should represent a competent piece of original research on a specific physiological problem or area under the research advisor's supervision. It should include an adequate review of the literature, a statement of the hypothesis, a set of experiments testing the hypothesis by whatever methods are appropriate, an analysis of the results, and an interpretation of the work and its significance. Upon completion of the thesis research, a final seminar is presented which is open to the public. A comprehensive oral examination will be conducted by the Thesis Committee and will cover the subject of the thesis and other matters related to the discipline.

Ph.D. MBBS Molecular and Integrative Physiology Concentration

Admission Criteria

Interdisciplinary Rotations Entry Option

Students accepted into Interdisciplinary Rotations of the MBBS program may select the Molecular and Integrative Physiology Concentration after completing at least three laboratory rotations in the MBBS 502 (Research Experience through Laboratory Rotations) course. Students should declare the Molecular and Integrative Physiology Concentration by the second semester of study.

Direct Entry Option

Prerequisites for graduate training in Molecular and Integrative Physiology include an undergraduate degree in one of the biological, physical, or behavioral sciences, preferably with one year each of physics, mathematics and chemistry. The Graduate School requires at least a 3.00 cumulative GPA (*A*=4.0) for the last two years of undergraduate coursework. The Molecular and Integrative Physiology Concentration may accept a student with only a bachelor's degree directly into the Ph.D. program, provided that the student has:

1. A cumulative undergraduate grade point average of 3.25 (*A* = 4.0).
2. Sufficient undergraduate course work in biology, chemistry, physics and mathematics.

The Graduate Program Committee will examine credential submitted in the application form.

Accelerated Entry Option

The Molecular and Integrative Physiology Concentration offers an accelerated entry option to a graduate student in the master's program who demonstrates the intellect, research aptitude and commitment to

pursue a doctoral degree. At the end of at least one year of studies at the master's level, the student may request that their Thesis Committee review their qualifications and performance in order to establish eligibility for entry into the doctoral program under this option. The student must have a cumulative GPA of at least 3.25 (*A* = 4.0) in graduate coursework. The Thesis Committee must establish that the student is prepared and able to conduct research at the doctoral level, as evidenced by publications, presentations, depth of understanding, quality of seminars or quality of research proposal. The Thesis Committee will recommend that the student should either continue in the Master's program or advance into the doctoral program.

After the student's eligibility has been established, the Research Advisor and/or the Thesis Committee will prepare a written review of the student's qualifications and submit it to the Graduate Program Committee for approval of accelerated entry into the Ph.D. An Acceleration Form for admission to the doctoral program must be submitted by the student. The Director of Graduate Studies for the Molecular and Integrative Physiology Concentration will notify the Graduate School that admission via accelerated entry is requested.

Curriculum

The requirements for the Ph.D. in the Molecular and Integrative Physiology Concentration are those established by the Graduate School, the MBBS graduate program, Molecular and Integrative Physiology Concentration policy and the student's Dissertation Committee. The Graduate School requires 24 credit hours to be completed at SIUC as a residency requirement prior to candidacy and 24 credit hours of dissertation research.

Courses required for the Ph.D. degree in the Molecular and Integrative Physiology Concentration are: MBBS 500 (Introduction to Scientific Communication), MBBS 501 (Advanced Scientific Communication), and the Research Tool courses [MBBS 504 (Fundamentals for Graduate Research) and MBBS 540 (Responsible Conduct of Research)]. MBBS 511A and MBBS 511B (Advanced Mammalian Physiology) are required for the Molecular and Integrative Physiology Concentration and must be completed with a grade of B or better. If a student completed PHSL 410A and PHSL 410B with a grade of B or better as a SIUC undergraduate, two semesters of MBBS 590G (Readings – Physiology) may be taken in lieu of the MBBS 511A and MBBS 511B requirement. Each student is required to complete at least one semester of physiology teaching.

Doctoral students must complete 24 credit hours of dissertation research (MBBS 600G - Dissertation Research – Physiology). No more than six hours of deferred dissertation credit may be applied towards fulfilling the 24 credit hours residency requirement. Any dissertation hours registered for above the six permitted prior to candidacy will not be counted toward completing the doctoral degree.

Committees

The Director of Graduate Studies for the Molecular and Integrative Physiology Concentration will advise new direct-entry graduate students until a Research Advisor is selected. The choice of a Research Advisor is a very important step and should be carefully considered. During the first semester, Interdisciplinary Rotation students and most direct entry students will rotate through three research laboratories to get acquainted with faculty members and research programs before selecting an advisor to direct the dissertation research and help plan coursework.

The functions of the Research Advisor are:

1. To guide the student's research and the use of facilities.
2. To provide mentorship in conducting, evaluating and publishing scientific research.
3. To serve as chair of the Dissertation Committee and consultant for selecting other members of the Dissertation Committee.

The Dissertation Committee should include the chair and at least four additional members from the graduate faculty, including one from outside the Molecular and Integrative Physiology Concentration. Members of the Dissertation Committee should provide expertise in or complementary to the research area. The student should meet with the committee yearly or as needed to discuss research and academic progress.

All graduate training programs in the Molecular and Integrative Physiology Concentration are subject to approval of the Graduate Program Committee of the Division of Molecular and Integrative Physiology.

The Graduate Program Committee will evaluate students at least annually. Continuation of assistantship support will be conditioned on satisfactory performance in the areas of academics, research and teaching. The student will provide documentation for each of these areas to the Graduate Program Committee. Academic performance will be based on good standing with the Graduate School (cumulative GPA=3.0) and the passage of the preliminary exam by the end of the third year. Satisfactory research performance will be based on the filing of an approved research proposal by the end of the third year, accomplishments outlined in the student's documentation and an annual memo from the research mentor or Dissertation Committee indicating progress in the area of research. Evaluation of teaching effectiveness will be carried out by the Graduate Program Committee from sources possibly, but not limited to, course coordinator, student evaluations and direct observation of classes by the Graduate Program Committee.

Preliminary Examination

Preliminary examinations for doctoral students consist of a written examination covering the student's research area and coursework, a research proposal in the area of the dissertation research project and an oral defense of the proposal. In most cases, the written preliminary examination is taken after completion of the second year of study. After passing the written examination with at least 80 percent score, the student will have one month to write the research proposal. The student's Dissertation Committee will evaluate the research proposal and if it is found acceptable, an oral examination, consisting of defense of the proposal and topics related to the discipline, will be scheduled with the Dissertation Committee. Details of the preliminary examinations are available from the Graduate Program Committee.

Admission to Candidacy

A student may be admitted to candidacy after the student has fulfilled the residency requirement, met the Research Tool requirement and passed the preliminary exam. Admission to candidacy is granted by the Dean of the Graduate School upon recommendation of the student's Dissertation Committee and the Graduate Program Committee of the Molecular and Integrative Physiology Concentration. The doctoral degree may not be conferred less than six months after admission to candidacy. The candidate must fulfill all requirements for the Ph.D. degree within a five-year period after admission to candidacy.

Dissertation

The dissertation should represent a competent piece of original research carried out on a specific physiological problem or area under the advisor's supervision. It should include an adequate review of the literature, a statement of the hypothesis, a set of experiments testing the hypothesis by whatever methods are appropriate, an analysis of the results, and an interpretation of the work and its significance. The research should be of sufficient quality and quantity to merit publications in peer-reviewed journals. At least one primary research manuscript with the student as first author must be accepted for publication. Upon completion of the dissertation research, a final public seminar is presented followed by an oral examination in a closed session. The examination will be conducted by the Dissertation Committee and will cover the subject of the dissertation and topics related to the discipline.

Certificate in Anatomy

The Anatomy Certificate is a graduate (post-baccalaureate) certificate program that provides students an opportunity to become proficient in anatomy teaching. This will allow them to compete more effectively for jobs in this field. The student must be currently enrolled in a graduate degree program at SIUC or an individual holding a bachelor's degree and admitted to the Graduate School (non-declared), preferably in an existing anatomically based graduate, masters or Ph.D. program (e.g. MBBS, Biological Sciences, Anthropology or Zoology). However, others will be evaluated on a case-by-case basis. Additional prerequisites, such as embryology, basic vertebrate anatomy, etc. are preferred but other courses may qualify. Students lacking such prerequisites may be encouraged to obtain them prior to admission into the Anatomy Certificate program. The Director of the Anatomy Certificate Program will review all applications. In addition to coursework in anatomy, students in the Anatomy Certificate program will obtain experience teaching gross anatomy to undergraduate and/or graduate students at the PHSL 301 or PHSL 401A/B

level. A minimum of 17 graduate credit hours are required for fulfillment of the certificate requirements. They are:

- Advanced Clinical Anatomy with Lab, (MBBS 521A, MBBS 521B, 10 credit hours)
- Advanced Mammalian Histology, (MBBS 509, 4 credit hours)
- Either Advanced Neuroanatomy with Lab (MBBS 514, 4 credit hours) or Advanced Human Embryology (MBBS 503, 3 credit hours).

Where appropriate, these courses may also count for credit toward the master's or Ph.D. degree. The Director of the Anatomy Certificate Program and the student's Thesis or Dissertation Committee will make recommendations for other coursework and oversee the student's progress.

Pharmacology and Neuroscience Concentration

Graduate courses of study leading to the M.S. and Ph.D. degrees in Pharmacology and Neuroscience are offered by Southern Illinois University School of Medicine, Department of Pharmacology. Course offerings in the graduate program have been designed so that graduate students may acquire a broad basic knowledge in Pharmacology and Neuroscience. Graduate students in the thesis M.S. and Ph.D. in Pharmacology and Neuroscience programs may choose from a diversity of specializations when selecting a research advisor and a research topic. These range from sensory processing, motor function, circadian biology, neurodevelopmental disorders, pain, epilepsy, cancer, muscle physiology, memory, and drug addiction, among others. Graduate students in the non-thesis M.S. in Pharmacology and Neuroscience program are not required to perform laboratory research or write a thesis. Instead, these students will complete a capstone project for completion of their degree with the assistance of a faculty advisor, whom they select.

As part a collaboration with the Department of Pharmaceutical Sciences at SIU Edwardsville (SIUE), a cooperative (Co-Op) Ph.D. in Pharmacology and Neuroscience that follows the Pharmacology and Neuroscience curriculum is an alternative training option. Research advisors for Co-Op Ph.D. students should be chosen from the SIUE Department of Pharmaceutical Sciences.

Admission Criteria

The minimum requirement for admission to the Pharmacology and Neuroscience Concentration is an undergraduate degree in one of the biological sciences. Students with undergraduate training in related areas, such as chemistry, physics, mathematics, computer science, psychology or engineering are also eligible for admission in the Pharmacology and Neuroscience Concentration. One year each of physics, mathematics, and chemistry is recommended, but not required.

Unrestricted admission into the M.S. in the Pharmacology and Neuroscience Concentration requires an undergraduate grade point average (GPA) of 2.7 or better (A = 4.0) on the entire last undergraduate GPA earned at the time of application.

Unrestricted admission into the Ph.D. in Pharmacology and Neuroscience Concentration requires an overall undergraduate or graduate GPA of 3.00 (A = 4.0).

Students entering the Ph.D. in Pharmacology and Neuroscience Concentration may be admitted directly from a master's program without completing a thesis in a process called Accelerated Entry. Accelerated entry (from a master's program) into the Ph.D. track requires: (1) the student must have attained a GPA of 3.0 (A = 4.0) in graduate course work and (2) a Research Advisor who has agreed to mentor the student during their dissertation. The advisor should submit a letter of recommendation attesting to the student's ability and potential to perform doctoral research. Approval of this request must be given by the Graduate Program Committee and the Department Chair. The Chair of the Department will then request that the Graduate School waive the master's degree or master's equivalency before entry into the doctoral program.

Degree Types Offered

- Master of Science (M.S.) - Thesis
- Master of Science (M.S.) - Non-thesis (principally online or limited in person under special circumstances)

- Doctor of Philosophy (Ph.D.) - Dissertation

Curriculum and Procedures

All M.S. and Ph.D. Pharmacology and Neuroscience students are required to complete core coursework that is supplemented with appropriate electives. The core courses are: MBBS 500 (Introduction to Scientific Communication), MBBS 501 (Advanced Scientific Communication), MBBS 550A and MBBS 550B (Principles of Pharmacology I & II), and MBBS 577 (Neuroscience). Equivalent coursework completed at other institutions or in other collegiate units may be substituted for certain course requirements for graduate course work in Pharmacology and Neuroscience if approved by the Pharmacology and Neuroscience Graduate Program Committee and the Graduate School.

In accordance with the Graduate School, maximum coursework for full-time graduate students is 16 credit hours per semester. Nine (9) credit hours is considered a normal course load and is the minimum required for students supported by assistantships. Eight (8) credit hours is the minimum for fall/spring semesters while 3 credit hours is the minimum for summer semesters. Students in the Co-Op Pharmacology and Neuroscience Ph.D. concentration with SIUE must be registered on both campuses for each semester. If not taking a course taught on the SIUE campus during fall, spring or summer, students should register for 0 credit hours of UNIV 500. If not taking a course taught on the SIUC campus during the fall or spring, student should register for 0 credit hours of MBBS 601 Section 777.

An advisory system in Pharmacology and Neuroscience Concentration will help students in planning their coursework. Upon their admission to the M.S. or Ph.D. Pharmacology and Neuroscience Concentration, the Graduate Program Director will advise students until the student chooses a faculty advisor. The courses chosen by students, their advisors and their thesis/dissertation committees are subject to approval by the Pharmacology and Neuroscience Graduate Program Committee. Students should choose a Research Advisor and assemble a thesis/dissertation committee after completion of core coursework, required Research Tools (for Ph.D. only), and passage of the preliminary examination. Thesis/dissertation committees and advisor selection shall be chosen according to guidelines defined in the Concentration operating paper.

Financial Assistance

The Pharmacology and Neuroscience Concentration may offer financial assistance that includes tuition waivers, research assistantships, and fellowships for M.S. and Ph.D. students; application for this support is made directly to the Department of Pharmacology. The Graduate School governs limits on support. Pharmacology and Neuroscience M.S. and Ph.D. students should be aware that renewal of their research assistantship or fellowship support is contingent upon satisfactory performance evaluations as documented in an annual progress report and outlined in the Concentration operating paper.

Non-Thesis M.S. MBBS Pharmacology and Neuroscience Concentration

Curriculum

The non-thesis M.S. degree in the Pharmacology and Neuroscience Concentration is designed for the majority of coursework described below to be completed online, with the exception MBBS 551 (Methods in Pharmacology), although students have the option of in-person attendance for any course. A faculty advisor assigned to the student by the Pharmacology and Neuroscience Graduate Program Committee will help plan course work until the student chooses a faculty advisor with whom to work on the capstone project. Students are not required to perform laboratory research or write a thesis for the non-thesis M.S. degree in Pharmacology and Neuroscience. All deadlines and formats should follow the guidelines provided by the Graduate School and the Pharmacology and Neuroscience Concentration operating document.

Graduation Requirements

1. A total of 34 credit hours at the 500-level is required for the non-thesis M.S. degree in the Pharmacology and Neuroscience Concentration.
2. At least 21 of these 34 hours must be graded hours and should include MBBS 577 (Neuroscience), MBBS 550A (Principles of Pharmacology I), MBBS 550B (Principles of Pharmacology II), MBBS 540

(Responsible Conduct of Research), MBBS 512 (Regulatory Issues in Drug Development) and two semesters of MBBS 500 (Introduction to Scientific Communication).
3. A minimum of 6 of the 34 credit hours should be comprised of MBBS 590H (Readings - Pharmacology and Neuroscience) or MBBS 595H (Readings - Pharmacology and Neuroscience). More than 6 credit hours of MBBS 590H and/or MBBS 595H may be taken.
4. A cumulative GPA of 3.0 (A = 4.0) in all graduate coursework is required to remain in the non-thesis M.S. Pharmacology and Neuroscience Concentration.
5. After completion of core coursework, students must pass a preliminary exam (described below).
6. Students must complete a capstone project under the direction of a faculty advisor, whom the student chooses. Credit for the capstone project occurs through MBBS 590H and MBBS 595H courses.

Committees

Students pursuing the non-thesis M.S. degree in the Pharmacology and Neuroscience Concentration shall be advised by a single faculty member and are not required to form a committee.

Preliminary Exam

Students seeking a non-thesis M.S. degree in the Pharmacology and Neuroscience Concentration must pass a preliminary examination with a grade of B or better to fulfill graduation requirements. It will be prepared, conducted and evaluated by the faculty in the Department of Pharmacology with leadership by the Graduate Program Director. Students will take this exam upon completion of the core course work. Students who do not pass the preliminary examination will be allowed to repeat it one time, no sooner than one month after the initial examination.

Capstone Project

Students must complete a capstone project under the direction of a faculty mentor chosen by the student. The capstone project is limited in scope and is developed collaboratively with the student and faculty advisor. The capstone project may take the form of a literature review, data analysis, or limited research project.

Thesis M.S. MBBS Pharmacology and Neuroscience Concentration

Curriculum

The thesis M.S. degree in the Pharmacology and Neuroscience Concentration is a research-focused M.S. degree wherein students take required courses in the concentration along with completing a focused research project. Rather than completing a comprehensive research project that may stand alone as a meaningful contribution, the research project for the thesis M.S. degree should be focused and may not be sufficient for submission as a completed primary research manuscript. Students seeking a thesis M.S. degree will also develop proficiency in oral and written communication within areas of neuroscience and pharmacology. All deadlines and formats should follow the guidelines provided by the Graduate School and the Pharmacology and Neuroscience Concentration operating document.

Graduation Requirements

1. A minimum of two-years of full-time study (one year in residence).
2. A total of 30 credit hours at the 500 level, of which a maximum of six credit hours of MBBS 599H (Thesis Research-Pharmacology and Neuroscience) can be counted.
3. Completion of core coursework that includes: MBBS 577 (Neuroscience), MBBS 550A (Principles of Pharmacology I), and MBBS 550B (Principles of Pharmacology II), as well as four semesters of MBBS 500 (Introduction to Scientific Communication).
4. Completion of MBBS 540 (Responsible Conduct of Research) and completion of MBBS 544 (Applied Statistics for the Basic Sciences). Students may be exempt from taking MBBS 544 if they have received a B or better in an upper level (400 level or above) statistics course during their undergraduate coursework.

5. Each student is required to have at least three credit hours of MBBS 599H (Thesis Research-Pharmacology and Neuroscience) before their thesis defense.
6. A cumulative GPA of 3.0 (A = 4.0) in all graduate coursework is required to remain in the thesis M.S. in Pharmacology and Neuroscience Concentration.
7. After completion of core coursework, students must pass a preliminary exam (described below).
8. A thesis must be completed in the student's research area of interest and receive approval from the student's Thesis Committee. The thesis is expected to be a competent, original research project carried out in a selected area under the research advisor's supervision. Results of the thesis research must be defended in an open seminar that must be announced publicly in advance, with a closed oral examination with the Thesis Committee following the completion of the seminar. Submission of the thesis and the oral defense should be completed following the guidelines of the Graduate School and parameters outlined in the operating paper for the Pharmacology and Neuroscience Concentration. The student will be recommended for the thesis M.S. degree if members of the student's Thesis Committee judge both the thesis and the performance at the oral examination to be satisfactory.
9. The student is responsible for electronically submitting the thesis to the Graduate School, the Graduate Program Director, and their research advisor.
10. Students who have missed the Graduate school deadline for approved thesis submission to graduate in the same semester may register in MBBS 601 (Continuing Enrollment) until completion of the revised thesis document. Students must be registered during the semester in which they graduate.

M.S. Thesis Committee

The Thesis Committee for a student in the Pharmacology and Neuroscience Concentration must have a minimum of three members: the student's Research Advisor (chair) and two additional faculty, at least one of which must be a member of the Pharmacology and Neuroscience Concentration. Before significant research has begun, a thesis plan is required. The thesis plan will be presented and discussed in an informal meeting with thesis committee members. The thesis plan must be approved by the student's Thesis Committee.

Preliminary Exam

Students seeking a thesis M.S. degree in the Pharmacology and Neuroscience Concentration must pass a preliminary examination with a grade of B or better to fulfill graduation requirements. It will be prepared, conducted and evaluated by the faculty in the Department of Pharmacology with leadership by the Graduate Program Director. Students will take this exam upon completion of the core course work. Students who do not pass the preliminary examination will be allowed to repeat it one time, no sooner than three months after the initial examination.

Ph.D. MBBS Pharmacology and Neuroscience Concentration

Curriculum

The Ph.D. degree in the Pharmacology and Neuroscience Concentration is a research-intensive graduate program wherein students take core courses in the concentration and Research Tools along with completing a comprehensive and original research project. The project is the focus of the dissertation, which should be competent, original research that will make significant contribution to the body of scientific knowledge. Students seeking a Ph.D. degree will also develop mastery in oral and written communication within areas of neuroscience and pharmacology. All deadlines and formats should follow the guidelines provided by the Graduate School and the Pharmacology and Neuroscience Concentration operating document.

Graduation Requirements

1. Completion of coursework including: MBBS 577 (Neuroscience), MBBS 550A (Principles of Pharmacology I), and MBBS 550B (Principles of Pharmacology II), as well as four semesters of MBBS 500 (Introduction to Scientific Communication) with a grade of B or better in each course while maintaining a cumulative GPA of 3.0 (A = 4.0) in all graduate coursework.

2. Completion of one credit hour of MBBS 501 (Advanced Scientific Communication) for each remaining semester after the MBBS 500 requirement is complete.
3. Completion of MBBS 540 (Responsible Conduct of Research) and MBBS 504 (Fundamentals for Graduate Research) as Research Tools.
4. Completion of MBBS 544 (Applied Statistics for the Basic Sciences). Students may be exempt from taking MBBS 544 if they have received a B or better in an upper level (400 level or above) statistics course during their undergraduate coursework.
5. After completion of core coursework, students must pass a preliminary exam (described below).
6. The student is admitted to Ph.D. in Pharmacology and Neuroscience candidacy after having completed the residency requirement, the Research Tool requirement, and passing the preliminary examination. Admission to candidacy is granted by the Dean of the Graduate School upon recommendation of the Graduate Program Director. The Ph.D. in Pharmacology and Neuroscience degree may not be conferred fewer than six months nor more than five years after admission to candidacy, except upon approval of the Dean of the Graduate School.
7. Students must formulate a Ph.D. Dissertation Committee (described below) which should be approved by the Graduate Program Director.
8. Students must complete at least 24 credit hours of MBBS 600H (Dissertation Research - Pharmacology and Neuroscience) to complete the dissertation research project and prepare the dissertation document to meet the requirements of their committee and the Graduate School. Students in the Co-Op Ph.D. in Neuroscience and Pharmacology Concentration must have at least 12 credit hours of MBBS 600H and PHPS 600 from each campus.
9. A written dissertation research proposal and an open oral seminar outlining the proposal in a format described by the Pharmacology and Neuroscience Concentration operating paper will be evaluated by the student's Dissertation Committee. The proposal will subsequently be negotiated in a closed meeting with the student's Dissertation Committee. Students must pass both the oral and written portions of the dissertation proposal examination as determined and documented by their Dissertation Committee.
10. The dissertation defense and seminar will occur no earlier than one year after the dissertation proposal defense and after at least one primary research paper with the student as first author has been submitted for publication to a peer-reviewed journal. The research project should include a statement of the problem, an adequate review of literature, a careful analysis of results using appropriate methodology, and an interpretation of the findings. Per procedures described in the Pharmacology and Neuroscience Concentration operating manual, once the dissertation research project is complete, the written dissertation will be provided to the Dissertation Committee. Results of the dissertation research must be presented in an open seminar which must be announced publicly in advance. Immediately following the dissertation seminar, a closed final oral examination will be conducted by the student's Dissertation Committee. A student will be recommended for the Ph.D. degree if members of the Dissertation Committee judge both the written dissertation and the performance at the final oral examination to be satisfactory. If approved, a dissertation approval form will be completed, signed by the committee and the Chair of the Department of Pharmacology, and submitted to the Graduate School. In the case of failure of the oral examination, it may be repeated once, no sooner than three months after the first examination. Failure of the second examination will result in dismissal from the Pharmacology and Neuroscience Graduate Program.
11. The student is responsible for electronically submitting the dissertation to the Graduate School, the Graduate Program Director, and their research advisor.
12. Students who have missed the Graduate School deadline for final paper/thesis/dissertation submission to graduate in the same semester may register in MBBS 601 (Continuing Enrollment) until completion of the revised dissertation document. Students must be registered during the semester in which they graduate.

Requirement for Admission to Candidacy

After admission to the doctoral program, fulfillment of the residency requirement shall occur before admission to candidacy. The residency requirement is satisfied by completion of 24 hours of graduate credit (core coursework, research tools, and passing the preliminary exam) on campus as a Ph.D. student in the Pharmacology and Neuroscience Concentration within a period not to exceed 4 calendar years. No more than 6 credit hours of MBBS 600H (Dissertation Research-Pharmacology and Neuroscience) will be counted towards the 24 credit hour residency requirement. To meet the residency requirement, students may enroll in any other course(s) including the core courses, Research Tool courses, and/or any formal

departmental (MBBS 533) or non-departmental courses and/or readings and research courses (MBBS 590H, MBBS 595H, MBBS 598H).

Ph.D. Dissertation Committee

The Dissertation Committee for a student in the Ph.D. in the Pharmacology and Neuroscience Concentration must have a minimum of five members: the student's Research Advisor (chair), two or three faculty members from the Department of Pharmacology, and at least one faculty member whose primary appointment originates outside the Concentration. The Dissertation Committee for students in the Co-Op Ph.D. program with SIUE must have two faculty members from SIUE's Department of Pharmaceutical Sciences, two faculty members from the Pharmacology and Neuroscience Concentration, and one faculty member from outside these departments/Concentrations. Members of these committees should be able to contribute significantly in the area of the student's research program. If the Research Advisor does not have a primary academic appointment in the Department of Pharmacology (except for the Co-Op Ph.D. program), then a co-mentor from the Department of Pharmacology is required and that co-mentor serves as the committee chair. The Chair of the Department of Pharmacology and the Graduate Program Director are ex-officio members for all thesis/dissertation committees of which they are not formal members.

Preliminary Exam

Students seeking a Ph.D. degree in the Pharmacology and Neuroscience Concentration must pass a preliminary examination with a grade of B or better to fulfill graduation requirements. It will be prepared, conducted and evaluated by the faculty in the Department of Pharmacology with leadership by the Graduate Program Director. Students will take this exam upon completion of the core course work. Students who do not pass the preliminary examination will be allowed to repeat it one time, no sooner than three months after the initial examination.

Public Health Laboratory Science Concentration

A non-thesis M.S. degree with a focus in the Public Health Laboratory Science (PHLS) Concentration offers advanced training with coursework and practical laboratory experience designed to prepare students for a career in public health laboratory science and requires substantial training in a public health laboratory setting that is directly relevant to career preparation in that area. This program is geared towards individuals who have an interest and talent for rigorous analytical work, and a desire to promote the use of laboratory-derived information to improve public health. Over 2 years, students are provided with advanced training needed to obtain both analytical and leadership roles within state and federal public health laboratories. Graduates are thus able to contribute to the provision of critical information needed to inform policy and program evaluation, and to continuing population science assessment, policy development and assurance. This program draws faculty primarily from the Department of Medical Microbiology, Immunology, and Cell Biology (MMICB) at the School of Medicine on the Springfield campus. Supervisors and staff from the Illinois Department of Public Health (IDPH) Division of Laboratories provide training to students in the public health laboratory setting.

Admission Criteria

Prospective graduate students should have an undergraduate degree in any of the biological, chemical or physical sciences. The applicants are recommended to have completed courses in biology, organic chemistry, physics and mathematics. Strong candidates with deficiencies in any area may be admitted, but such deficiencies may restrict the research areas available to the student and may lead to requirements for additional courses during graduate study. Prospective students are encouraged to contact the Director of the PHLS Concentration for advisement.

The PHLS Concentration requires a cumulative grade point average (GPA) of 2.7 or better (*A* = 4.0) on the entire last undergraduate GPA earned at the time of application. Applicants are encouraged but not required to submit Graduate Record Examination (GRE) general test scores. International students whose native or first language is not English must take one of the Graduate School-approved English proficiency tests no more than 24 months prior to the term for which they seek admission.

Financial Assistance

Fellowships and assistantships are available through the program for qualified applicants.

Advisement and General Requirements

The PHLS Concentration Director will assist students in the planning a program of study.

Public Health Laboratory Science Concentration Committee

The PHLS Concentration Committee is composed of the Concentration Director and a single member chosen from the MMICB Department. The PHLS Concentration Committee will:

1. Provide programmatic oversight of the structure, curricular design, content and
2. Review applications from students for admission and make admissions recommendations to the MBBS Program Director.
3. Advise PHLS Concentration students in planning a course of study.
4. Monitor student progress toward the program.

Formal Course Requirements

The formal course requirements for the PHLS Concentration can be met by taking: MBBS 403 (Medical Microbiology) or MBBS 405 (Clinical Microbiology), CHEM 431 (Environmental Chemistry), MBBS 460 (Bacterial and Viral Genetics), MBBS 510 (Functions of Public Health System), MBBS 518 (Applied Immunology), MBBS 530 (Advanced Cellular Biology), MBBS 540 (Responsible Conduct of Research), MBBS 541A and MBBS 541B (Public Health Laboratory Training), and MBBS 554A (Biochemistry I). PHLS students must also take a minimum of one credit hour of MBBS 500 (Introduction to Scientific Communication) or one credit hour of MBBS 501 (Advanced Scientific Communication) during each semester in residence. Additional courses may be required by the student's committee to meet any deficiencies or to provide proficiency in a specialized area. The PHLS Concentration Committee will make recommendations to whether courses taken at SIU or other universities are equivalent to the program requirements and need not be repeated.

Multidisciplinary Biomedical and Biological Sciences Courses

MBBS403 - Medical Microbiology Lecture (Same as MICR 403) A survey of the more common bacterial, mycotic and viral infections of humans with particular emphasis on the distinctive properties, pathogenic mechanisms, epidemiology, immunology, diagnosis and control of disease-causing microorganisms. Three hours lecture. Spring semester. Prerequisite: MICR 301, or consent of instructor. Credit Hours: 3

MBBS405 - Clinical Microbiology (Same as MICR 405) This course will be offered in Springfield only. A comprehensive course for health science professionals covering the biology, virulence mechanisms, and identification of infectious agents important in human disease and host-defense mechanisms. Clinical applications emphasized. Three hours lecture. Prerequisite: MICR 301, or consent of instructor. Credit Hours: 3

MBBS406 - Mycology (Same as MICR 406) Introduction to Mycology. This course will provide an overview of fungal diversity and taxonomy, fungal cell and molecular biology. Additionally, it will cover the ecological, economic, and historical impact of fungi on the environment, science, and society. Prerequisite: MICR 301 or consent of instructor. Credit Hours: 3

MBBS421 - Biotechnology (Same as MICR 421) Topics covered will include the genetic basis of the revolution in biotechnology, medical applications including genetic screening and therapeutic agents, industrial biotechnology and fermentation, and agricultural applications. Three hours lecture. Fall semester. Prerequisite: MICR 302, or consent of instructor. Credit Hours: 3

MBBS423 - Geomicrobiology (Same as MICR 423 and GEOL 423) The course will focus on the role that microorganisms play in fundamental geological processes. Topics will include an outline of the present understanding of microbial involvement of weathering of rocks, formation and transformation of soils and sediments, and genesis and degradation of minerals. Elemental cycles will also be covered with emphasis on the interrelationships between the various geochemical cycles and the microbial trophic groups involved. Prerequisite: MICR 301 and CHEM 210 and 211. Recommended: GEOL 220, 221 or 222. Credit Hours: 3

MBBS425 - Biochemistry and Physiology of Microorganisms Lecture (Same as MICR 425) Chemical composition, cellular structure, and metabolism of microorganisms. Fall semester. Prerequisite: CHEM 340 or CHEM 339. Credit Hours: 3

MBBS453 - Immunology Lecture (Same as MICR 453) Principles of molecular and cellular immunology. Particular emphasis is given to molecular mechanisms involved in activation and maintenance of the immune response at the basic science level. The role of the immune system in medical diagnostic procedures and in human health is also discussed. Spring semester. Prerequisite: MICR 403, or consent of instructor. Credit Hours: 3

MBBS460 - Bacterial and Viral Genetics (Same as MICR 460) The genetic mechanisms and regulatory events that control gene transfer, lambda phage infection, recombination, and metabolic pathways including a brief introduction to bioinformatics, genome analysis and global regulatory functions. Three hours lecture. Fall semester. Prerequisite: MICR 301 and 302, or consent of instructor. Credit Hours: 3

MBBS470 - Prokaryotic Diversity Lecture (Same as MICR 470) A consideration of the major groups of prokaryotes with special emphasis on their comparative physiology and ecology. Three hours lecture. Spring semester. Prerequisite: MICR 301, or consent of instructor. Credit Hours: 3

MBBS500 - Introduction to Scientific Communication Training in the interpretation of research and current literature in the biomedical and biological sciences. Format will include seminar presentations and/or Journal Club sessions. Credit Hours: 1-16

MBBS501 - Advanced Scientific Communication Presentation and discussion of research and current literature in the biomedical and biological sciences. Format will include seminar presentations and/or Journal Club sessions. Credit Hours: 1-16

MBBS502 - Research Experience through Laboratory Rotations The main objectives of this course are to acquaint students with the techniques and the equipment used in modern research laboratories and to provide instruction in the principles and practice of scientific experimentation. Students rotate through at least three research laboratories. Course is restricted to thesis M.S. and Ph.D. students in the Multidisciplinary Biomedical & Biological Sciences (MBBS) Graduate Program. Credit Hours: 3

MBBS503 - Advanced Human Embryology Embryology is the branch of anatomy that looks at the developmental events that occur prior to birth. This course is designed to provide a basic foundation in human embryology to graduate students who are interested in the biomedical sciences. In this course, we will explore human development from fertilization to birth. Our major focus will be on the morphological changes that take place during development, but we will also explore many of the underlying molecular mechanisms and relevant congenital anomalies. Students will review and discuss current literature relevant to each unit and complete final projects as approved by the course instructor. Approval of the instructor required for enrollment. Students who have passed PHSL 403 are not eligible for enrollment. Credit Hours: 3

MBBS504 - Fundamentals for Graduate Research This course is designed to provide foundational knowledge in topics and concepts that are common to disciplines in biomedical and biological research. Basic skills training in experimental design and research methods will be acquired through lectures, workshops, assignments and through reading and reviewing scientific literature. Credit Hours: 3

MBBS505 - Biomedical Science Program Seminar Seminar on social, professional, and scientific issues of interest to students planning a career in the biomedical sciences. Course focuses on development of professional writing, and approaches to professional school application. Credit Hours: 1

MBBS506 - Scientific Approach and Application Course covers advanced topics in biological and biomedical science. Understanding of biomedical science research and biological problem solving are emphasized. Course also focuses on preparatory strategies for professional school admissions examinations. Credit Hours: 2

MBBS509 - Advanced Mammalian Histology This course is intended to provide students with an understanding of mammalian tissues with a strong emphasis on human anatomy. The course utilizes self-directed and problem-based learning strategies employing on-line resources including virtual microscopy. By completing this course, successful students should 1) be familiar with the organization, structure, and appearance of mammalian tissues; 2) be able to recognize and identify tissues from all major mammalian organs, 3) be able to describe the relationship between tissue conformation and organ function, 4) be able to discuss methods for histological techniques, 5) be able to discuss troubleshooting for histological techniques and 6) be able to demonstrate critical thinking skills to understand how the altered structure and function of cells, tissues and organs may lead to pathology. Credit Hours: 4

MBBS510 - Functions of Public Health System This course is an introduction to the concepts and practices of public health at the community, state, and national levels. The course addresses the philosophy, purpose, history, organization, functions, activities and impact of public health practice. The course also addresses a number of important health issues and problems facing the public health system. Special emphasis will be placed on the role of public health laboratory in public health practice. Discussion questions and case studies are integrated into the course, serving to stimulate student participation in gaining in-depth knowledge about real world public health issues and practice. Prerequisite: Bachelor's degree in Microbiology or other Biology, Chemistry, Physical Science. Credit Hours: 3

MBBS511A - Advanced Mammalian Physiology Physical and chemical organization and function in mammals, with emphasis on the human. Topics include cell, molecular, excitable membrane, cardiovascular, respiratory, renal, neural, gastrointestinal, endocrine and reproductive physiology. Four lectures per week. Students will develop critical reasoning and understanding in subject areas through the reading and evaluation of current research literature. MBBS 511A and MBBS 511B can be taken in any sequence. Restricted to consent of department. Special approval needed from the instructor. Credit Hours: 4

MBBS511B - Advanced Mammalian Physiology Physical and chemical organization and function in mammals, with emphasis on the human. Topics include cell, molecular, excitable membrane, cardiovascular, respiratory, renal, neural, gastrointestinal, endocrine and reproductive physiology. Four lectures per week. Students will develop critical reasoning and understanding in subject areas through the reading and evaluation of current research literature. MBBS 511A and MBBS 511B can be taken in any sequence. Restricted to consent of department. Special approval needed from the instructor. Credit Hours: 4

MBBS512 - Regulatory Issues in Drug Development This course provides content covering the drug development process and FDA regulatory requirements for over-the-counter and prescription drugs and biologics. It provides an overview of the drug development phases, the pharmaceutical industry, and the regulatory concepts that shape federal oversight and industry decisions. No prerequisites are required. Credit Hours: 2

MBBS514 - Advanced Neuroanatomy with Lab Advanced Human Neuroanatomy with Lab (4 hours) examines the detailed structure of the human nervous system, linking structure to function at both the clinical and neurobiological level. The overall objective of the course will be a three-dimensional understanding of nervous system structure and organization, based upon anatomical connections, functions, and diseases. Graduate students will engage in literature reviews relevant to course material and submit final projects as approved by course instructors. Enrollment requires consent of the instructor. Students who have passed PHSL 402 are not eligible for enrollment. Lab fee: $25. Credit Hours: 4

MBBS515A - Master's Degree Research - Anatomy & Neurobiology Individualized laboratory research and training. Graded credit for Master's Degree only. Credit Hours: 1-6

MBBS515B - Master's Degree Research - Biochemistry & Molecular Biology Individualized laboratory research and training. Graded credit for Master's Degree only. Credit Hours: 1-6

MBBS515C - Master's Degree Research - Cell Biology & Immunology Individualized laboratory research and training. Graded credit for Master's Degree only. Credit Hours: 1-6

MBBS515D - Master's Degree Research - Cancer Biology Individualized laboratory research and training. Graded credit for Master's Degree only. Credit Hours: 1-6

MBBS515F - Master's Degree Research - Microbiology Individualized laboratory research and training. Graded credit for Master's Degree only. Credit Hours: 1-6

MBBS515G - Master's Degree Research - Physiology Individualized laboratory research and training. Graded credit for Master's Degree only. Enrollment requires approval of the instructor. Credit Hours: 1-6

MBBS515H - Master's Degree Research - Pharmacology & Neuroscience Individualized laboratory research and training. Graded credit for Master's Degree only. Credit Hours: 1-6

MBBS518 - Applied Immunology A survey of the components of the immune system and how they interact with each other to produce responses that are important in the control or mediation of human disease. Three hours lecture. Restricted to consent of instructor. Credit Hours: 3

MBBS520 - Advanced Microbial Physiology and Control Mechanisms The physiology, biochemistry and genetics of microbial regulatory mechanisms. Topics include transport phenomena, catabolite and nitrogen repression, the stringent response, and autoregulatory phenomena. Two lectures per week. Prerequisite: MBBS 425; or CHEM 451A and B, or consent of instructor. Credit Hours: 2

MBBS521A - Advanced Clinical Anatomy with Laboratory A-B sequence. Advanced Clinical Anatomy provides students with a thorough understanding of human anatomy and its application to medicine. The course will encompass osteology, musculature, the circulatory system, viscera, the nervous system, and the medical implications of anatomy. This will be achieved through various approaches including demonstrations with prepared specimens, student dissections, anatomical models, case studies, online materials, medical imaging, lectures, guided study sessions, and independent learning. Enrollment by consent of instructor. Lab fee: $20. Credit Hours: 5

MBBS521B - Advanced Clinical Anatomy with Laboratory A-B sequence. Advanced Clinical Anatomy provides students with a thorough understanding of human anatomy and its application to medicine. The course will encompass osteology, musculature, the circulatory system, viscera, the nervous system, and the medical implications of anatomy. This will be achieved through various approaches including demonstrations with prepared specimens, student dissections, anatomical models, case studies, online materials, medical imaging, lectures, guided study sessions, and independent learning. Enrollment by consent of instructor. Lab fee: $20. Credit Hours: 5

MBBS525 - Gene Regulation and Molecular Neuroscience This course will examine the molecular and cellular aspects of physiology in the context of human pituitary and neurological genetic disorders using the primary literature as the source of topics for oral presentations and discussions. Topics include experiments and model systems used to examine the regulation of gene expression, signaling pathways, protein activities, and cellular functions that underlie these disorders. Special approval needed from the instructor. Credit Hours: 3

MBBS530 - Advanced Cellular Biology (This course will be offered in Springfield only). An advanced course based on current literature concerning the cellular biology of eukaryotes. Both students and faculty will make presentations followed by discussion. Topics will include: the cellular and subcellular structure and function of the lower eukaryotes, the biochemistry and biophysics of eukaryotic membrane systems and the higher subcellular functions of mammalian cells. Prerequisite: 400 level course in genetics and in biochemistry or consent of instructor. Credit Hours: 3

MBBS531 - Molecular and Cellular Biology Lecture course in molecular and cellular biological techniques used in the study of organisms; structures and processes involved in genome organization; packaging and replication of DNA; transcription and RNA processing; recombination and transposition of DNA; gene regulation with emphasis on developmental processes; signal transduction; structure and function of cellular components; cell-cell interaction; etc. Prerequisites: MBBS 554A and MBBS 554B or consent of instructor. Credit Hours: 3

MBBS533 - Advanced Pharmacology & Neuroscience The goal of this course is to understand the process involved in scientific discovery and research by reading, analyzing, criticizing and discussing scientific articles covering the field of Pharmacology and Neuroscience and the related field of cellular and molecular biology. Prerequisites: MBBS 550A Principles of Pharmacology and MBBS 577 Neuroscience. Credit Hours: 3

MBBS535 - Advanced Biochemistry Lecture course in control mechanisms of biochemical processes, enzyme kinetics, regulation and allostery, coupled systems and energy transduction, membranes, transport, etc. Prerequisite: BCHM 451A or consent of instructor. Credit Hours: 3

MBBS540 - Responsible Conduct of Research This course will provide information on topics relevant to the ethical conduct of research, including conflict of interest, publication policies, animal and human subjects, peer review, and mentoring. No prerequisite. Credit Hours: 1

MBBS541A - Public Health Laboratory Training This course has a laboratory component of approximately 4-6 hours/week/credit hour of training in a functioning public health laboratory. The content of the course provides in-depth experience in the scientific basis and use of analytical methods in microbiology, immunology and molecular biology that are unique to public health laboratories at the state and national level. Prerequisite: MBBS 545. Credit Hours: 3-9

MBBS541B - Public Health Laboratory Training This course has a laboratory component of approximately 4-6 hours/week/credit hour of training in a functioning public health laboratory. The content of the course provides in-depth experience in the scientific basis and use of analytical methods in environmental chemistry and biochemistry that are unique to public health laboratories at the state and national level. Prerequisite: MBBS 541A. Credit Hours: 3-9

MBBS544 - Applied Statistics for the Basic Sciences This course reviews introductory statistics and focuses on advanced statistics, linear and nonlinear modeling, applicable to basic bimedical sciences. The course will also provide students with experience in the use of statistical package computer programs for data analysis. No prerequisite required. Credit Hours: 3

MBBS545 - Basis of Public Health Laboratory Practice The scientific basis of current laboratory practice of public health science in the areas of microbiology, immunology, molecular biology, environmental chemistry, biochemistry and instrumentation (to accompany 541A,B). Prerequisite: MBBS 510, Bachelor's degree in Biology, Chemistry, Physical Science. Credit Hours: 3

MBBS550A - Principles of Pharmacology I A study of chemistry, pharmacodynamic actions, mechanisms of action, absorption, distribution, metabolism, elimination, adverse effects, interactions and toxic effects of drugs currently used in therapeutics. Three to five hours lecture, one to four hours discussion per week. Must be taken in sequence. Prerequisite: MBBS 577 or instructor permission. Credit Hours: 4

MBBS550B - Principles of Pharmacology A study of chemistry, pharmacodynamic actions, mechanisms of action, absorption, distribution, metabolism, elimination, adverse effects, interactions and toxic effects of drugs currently used in therapeutics. Three to five hours lecture, one to four hours discussion per week. Must be taken in sequence. No prerequisite required. Credit Hours: 4

MBBS551 - Methods in Pharmacology The main objective is to acquaint the student with various sophisticated laboratory equipment, basic techniques/principles of pharmacological experiments. One hour lecture and three hours laboratory twice weekly. This course is prerequisite to all advanced pharmacology courses. (Springfield Only.) Credit Hours: 4

MBBS552 - Cellular Immunology A lecture-discussion course covering contemporary aspects of cellular immunology. The cellular nature of immune responses as well as current information on the regulation of such responses will be considered. Topics will include cellular components of an immune response; receptors, recognition and signals; cellular cooperation; immuno-regulation; and tolerance and autoreactivity. Prerequisites: MBBS 453 or MBBS 518 or consent of instructor. Credit Hours: 3

MBBS554A - Biochemistry I First course of a two semester, comprehensive biochemistry course sequence. Introduction to structure and function of biomolecules including nucleic acids, proteins, sugars, polysaccharides, lipids and membranes, biochemical techniques, expression of genetic information,

signal transduction and transport through membranes. Three lectures and one seminar per week. Seminar will consist of primary literature discussion and student presentation on areas covered in lecture. Principal lecturer for each of the area topics will lead discussion and assign the primary literature. Prerequisites: CHEM 340 or CHEM 442 or equivalents with a C- or better, or instructor permission. Students who have previously passed BCHM/CHEM 451A are not eligible to register for this course. Credit Hours: 3

MBBS554B - Biochemistry II Second course of a two semester, comprehensive biochemistry course sequence. Basic kinetics, enzyme kinetics, enzyme inhibitors, regulation of enzymes, oxidation-reduction, high energy bonds, carbohydrate metabolism, aerobic/anaerobic metabolism, lipid metabolism, nitrogen metabolism, hormonal control of metabolism. Three lectures and one seminar per week. Seminar will consist of primary literature discussion and student presentation on areas covered in lecture. Principal lecturer will lead discussion and assign the primary literature. Prerequisites: CHEM 340 or CHEM 442 or equivalents with a C- or better, or instructor permission. Students who have previously passed BCHM/CHEM 451B are not eligible to register for this course. Credit Hours: 3

MBBS555 - History of Medicine This course explores the theories and practice of medicine from antiquity to present day by examining changing cultural norms and scientific understanding of the human body throughout history. The focus is on understanding the development of Western medicine, but medical practice in ancient and non-Western cultures will also be explored. Credit Hours: 1-3

MBBS556 - Phylogenetics (Same as ANTH 556, PLB 556, ZOOL 556) An advanced introduction to modern methods of phylogenetic inference, emphasizing both theoretical background concepts and numerical approaches to data analysis. Topics include properties of morphological and molecular characters, models of character evolution, tree estimation procedures, and tree-based testing of evolutionary hypotheses. Special approval needed from the instructor. Credit Hours: 3

MBBS560 - Molecular Oncology A lecture-discussion course in molecular and cellular biology of tumor pathogenesis. The lecture covers various aspect of current tumor biology. The in-depth discussion on recent articles will provide students with opportunity to become familiar with front-line research in molecular oncology. Prerequisite: MBBS 554A or consent of instructor. Credit Hours: 3

MBBS570A - Advanced Topics - Anatomy & Neurobiology Discussion based course of selected topics in Anatomy & Neurobiology of current scientific interest to faculty and students. Credit Hours: 1-6

MBBS570B - Advanced Topics - Biochemistry & Molecular Biology Discussion based course of selected topics in Biochemistry & Molecular Biology of current scientific interest to faculty and students. Credit Hours: 1-6

MBBS570C - Advanced Topics - Cell Biology & Immunology Discussion based course of selected topics in Cell Biology & Immunology of current scientific interest to faculty and students. Credit Hours: 1-6

MBBS570D - Advanced Topics - Cancer Biology Discussion based course of selected topics in Cancer Biology of current scientific interest to faculty and students. Credit Hours: 1-6

MBBS570E - Advanced Topics - Medicinal Chemistry Discussion based course of selected topics in Medicinal Chemistry of current scientific interest to faculty and students. Credit Hours: 1-6

MBBS570F - Advanced Topics - Microbiology Discussion based course of selected topics in Microbiology of current scientific interest to faculty and students. Credit Hours: 1-6

MBBS570G - Advanced Topics - Physiology Discussion based course of selected topics in Physiology of current scientific interest to faculty and students. Enrollment requires approval of the instructor. Credit Hours: 1-6

MBBS570H - Advanced Topics - Pharmacology & Neuroscience Discussion based course of selected topics in Pharmacology & Neuroscience of current scientific interest to faculty and students. Credit Hours: 1-6

MBBS577 - Neuroscience This course provides basic neuroscience knowledge covering the fundamental principles of neural cell biology, neurophysiology, neurochemistry, neuroanatomy and

behavior. This knowledge is essential to understand the mode of action of the drugs acting on excitable cells including muscle, autonomic system and central nervous system. No prerequisite. Credit Hours: 4

MBBS590A - Readings - Anatomy & Neurobiology Supervised readings for qualified graduate students. Special arrangements to be made with the instructor with whom the student wishes to work. Letter grade. Credit Hours: 1-6

MBBS590B - Readings - Biochemistry & Molecular Biology Supervised readings for qualified graduate students. Special arrangements to be made with the instructor with whom the student wishes to work. Letter grade. Credit Hours: 1-6

MBBS590C - Readings - Cell Biology & Immunology Supervised readings for qualified graduate students. Special arrangements to be made with the instructor with whom the student wishes to work. Letter grade. Credit Hours: 1-6

MBBS590D - Readings - Cancer Biology Supervised readings for qualified graduate students. Special arrangements to be made with the instructor with whom the student wishes to work. Letter grade. Credit Hours: 1-6

MBBS590E - Readings - Medicinal Chemistry Supervised readings for qualified graduate students. Special arrangements to be made with the instructor with whom the student wishes to work. Letter grade. Credit Hours: 1-6

MBBS590F - Readings - Microbiology Supervised readings for qualified graduate students. Special arrangements to be made with the instructor with whom the student wishes to work. Letter grade. Credit Hours: 1-6

MBBS590G - Readings - Physiology Supervised readings for qualified graduate students. Special arrangements to be made with the instructor with whom the student wishes to work. Enrollment requires approval of the instructor. Letter grade. Credit Hours: 1-6

MBBS590H - Readings - Pharmacology & Neuroscience Supervised readings for qualified graduate students. Special arrangements to be made with the instructor with whom the student wishes to work. Letter grade. Credit Hours: 1-6

MBBS595A - Readings - Anatomy & Neurobiology Supervised readings for qualified graduate students. Special arrangements to be made with the instructor with whom the student wishes to work. S/U grading. Credit Hours: 1-12

MBBS595B - Readings - Biochemistry & Molecular Biology Supervised readings for qualified graduate students. Special arrangements to be made with the instructor with whom the student wishes to work. S/U grading. Credit Hours: 1-12

MBBS595C - Readings - Cell Biology & Immunology Supervised readings for qualified graduate students. Special arrangements to be made with the instructor with whom the student wishes to work. S/U grading. Credit Hours: 1-12

MBBS595D - Readings - Cancer Biology Supervised readings for qualified graduate students. Special arrangements to be made with the instructor with whom the student wishes to work. S/U grading. Credit Hours: 1-12

MBBS595E - Readings - Medicinal Chemistry Supervised readings for qualified graduate students. Special arrangements to be made with the instructor with whom the student wishes to work. S/U grading. Credit Hours: 1-12

MBBS595F - Readings - Microbiology Supervised readings for qualified graduate students. Special arrangements to be made with the instructor with whom the student wishes to work. S/U grading. Credit Hours: 1-12

MBBS595G - Readings - Physiology Supervised readings for qualified graduate students. Special arrangements to be made with the instructor with whom the student wishes to work. Enrollment requires approval of the instructor. S/U grading. Credit Hours: 1-12

MBBS595H - Readings - Pharmacology & Neuroscience Supervised readings for qualified graduate students. Special arrangements to be made with the instructor with whom the student wishes to work. S/U grading. Credit Hours: 1-12

MBBS598A - Research - Anatomy & Neurobiology Credit for conducting research. Special arrangements to be made with the instructor with whom the student wishes to work. Credit Hours: 1-24

MBBS598B - Research - Biochemistry & Molecular Biology Credit for conducting research. Special arrangements to be made with the instructor with whom the student wishes to work. Credit Hours: 1-24

MBBS598C - Research - Cell Biology & Immunology Credit for conducting research. Special arrangements to be made with the instructor with whom the student wishes to work. Credit Hours: 1-24

MBBS598D - Research - Cancer Biology Credit for conducting research. Special arrangements to be made with the instructor with whom the student wishes to work. Credit Hours: 1-24

MBBS598E - Research - Medicinal Chemistry Credit for conducting research. Special arrangements to be made with the instructor with whom the student wishes to work. Credit Hours: 1-24

MBBS598F - Research - Microbiology Credit for conducting research. Special arrangements to be made with the instructor with whom the student wishes to work. Credit Hours: 1-24

MBBS598G - Research - Physiology Credit for conducting research. Special arrangements to be made with the instructor with whom the student wishes to work. Enrollment requires approval of the instructor. Credit Hours: 1-24

MBBS598H - Research - Pharmacology & Neuroscience Credit for conducting research. Special arrangements to be made with the instructor with whom the student wishes to work. Credit Hours: 1-24

MBBS599A - Thesis Research - Anatomy & Neurobiology Research for Master's degree thesis. Credit Hours: 1-6

MBBS599B - Thesis Research - Biochemistry & Molecular Biology Research for Master's degree thesis. Credit Hours: 1-6

MBBS599C - Thesis Research - Cell Biology & Immunology Research for Master's degree thesis. Credit Hours: 1-6

MBBS599D - Thesis Research - Cancer Biology Research for Master's degree thesis. Credit Hours: 1-6

MBBS599F - Thesis Research - Microbiology Research for Master's degree thesis. Credit Hours: 1-6

MBBS599G - Thesis Research - Physiology Research for Master's degree thesis. Credit Hours: 1-6

MBBS599H - Thesis Research - Pharmacology & Neuroscience Research for Master's degree thesis. Credit Hours: 1-6

MBBS600A - Dissertation Research - Anatomy & Neurobiology Research for Ph.D. degree dissertation. Credit Hours: 1-32

MBBS600B - Dissertation Research - Biochemistry & Molecular Biology Research for Ph.D. degree dissertation. Credit Hours: 1-32

MBBS600C - Dissertation Research - Cell Biology & Immunology Research for Ph.D. degree dissertation. Credit Hours: 1-32

MBBS600D - Dissertation Research - Cancer Biology Research for Ph.D. degree dissertation. Credit Hours: 1-32

MBBS600E - Dissertation Research - Medicinal Chemistry Research for Ph.D. degree dissertation. Credit Hours: 1-32

MBBS600F - Dissertation Research - Microbiology Research for Ph.D. degree dissertation. Credit Hours: 1-32

MBBS600G - Dissertation Research - Physiology Research for Ph.D. degree dissertation. Credit Hours: 1-32

MBBS600H - Dissertation Research - Pharmacology & Neuroscience Research for Ph.D. degree dissertation. Credit Hours: 1-32

MBBS601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Multidisciplinary Biomedical and Biological Sciences Faculty

Adlimoghaddam, Aida, Assistant Professor, Ph.D., CRQM, (Springfield), University of Manitoba, Canada, 2015; 2023. Mitochondrial function, brain metabolic activity, inflammation, and cognitive changes in normal aging, Alzheimer's disease, and related diseases; pharmaceutical and dietary interventions, repurposing of FDA-approved drugs; early diagnosis and treatment in Alzheimer's disease.

Arai, Amy C., Professor, Ph.D., (Springfield), Chiba University, 1987; 1999. Molecular and pharmacological modulation of AMPA-type glutamate receptors and its impact on synaptic physiology.

Arbogast, Lydia A., Professor and Director Molecular and Integrative Physiology concentration, Ph.D., (Carbondale), Indiana University, 1988; 1996. Molecular aspects of reproductive neuroendocrinology.

Bany, Brent M., Associate Professor, Ph.D., (Carbondale), Western University (Canada), 1997; 2003. Uterine biology with a focus on the establishment and progression through early pregnancy in rodents and humans.

Bartke, Andrzej, Distinguished Professor, Emeritus, Ph.D., (Springfield), University of Kansas, 1965; 1984. Genetic and hormonal control of aging in mammals.

Bender, Kelly, Associate Professor and Director of Microbiology concentration, Ph.D., (Carbondale), Southern Illinois University, 2003; 2006. Metabolic regulation of bacteria involved in bioremediation, small non-coding regulatory RNAs.

Bhaumik, Sukesh R., Professor, Ph.D., (Carbondale), Tata Institute of Fundamental Research (University of Bombay), 1997; 2003. Regulation of eukaryotic gene expression, transcription-coupled ubiquitination and DNA repair, NMR structural studies on proteins and nucleic acids.

Braundmeier-Fleming, Andrea, Associate Professor, Ph.D., (Springfield), University of Illinois, 2005; 2014. Immune cell function and influence of the microbiome on the pathophysiology of reproductive disorders.

Burgess, Rebecca J., Assistant Professor, Ph.D., (Carbondale), Mayo Clinic College of Medicine 2007; 2023. Chromatin regulation, hematopoietic stem cell function and maintenance, stem cell proteostasis.

Cai, Weijia, Assistant Professor, Ph.D., (Springfield), Wuhan University, China, 2010; 2022. Explore the mechanisms that tumor cells suppress or avert immunogenic cell death (ICD) and discover novel targets to enhance the efficacy of current cancer therapies.

Caspary, Donald M., Research Professor, Emeritus, Ph.D., (Springfield), New York University, 1971; 1973. Sensory physiology, neurophysiology, age-related hearing loss, tinnitus.

Cheatwood, Joseph, Associate Professor, Ph.D., (Carbondale), University of Florida, 2004; 2009. Mechanisms of neuroprotection and recovery of function following central nervous system injury.

Copello, Julio A., Associate Professor, Ph.D., (Springfield), National University of La Plata, 1989; 2005. Molecular mechanism of intracellular calcium signaling and its role in ischemia and breast cancer.

Cox, Brandon, Professor and Director of Multidisciplinary Biomedical and Biological Sciences Graduate Program, Ph.D., (Springfield), Georgetown University, 2008; 2013. Hair cell regeneration in the cochlea and vestibular organs; postnatal maturation of the cochlea, and mechanisms of hair cell survival.

Crider, Michael, Professor, Ph.D., (Edwardsville), University of Kentucky, 1975; 2004. Synthetic medicinal chemistry, somatostatin non-peptides, sigma 2 ligands.

Davie, Judy, Professor and Chair, Department of Biomedical Sciences and Director of Biochemistry and Molecular Biology concentration, Ph.D., (Carbondale), University of California at Berkeley, 1998; 2006. Mechanisms of gene regulation, focusing on myogenin, a transcription factor that controls skeletal muscle development.

Demir, Ebru, Assistant Professor, Ph.D., (Carbondale), University of Vienna, Austria, 2006; 2024. Investigates the neural systems that support social reinforcement and social decision-making, both of which are vital for neuroprotection.

Elble, Randolph C., Associate Professor, Ph.D., (Springfield), Indiana University, 1986; 2005. Tumor suppression mechanisms in breast cancer by CLCA family of chloride current regulators.

Ellsworth, Buffy S., Professor, Ph.D., (Carbondale), Colorado State University, 2002; 2007. Pituitary gland development, molecular biology, regulation of gene expression.

Faingold, Carl L., Distinguished Professor, Ph.D., (Springfield), Northwestern University, 1970; 1972. Convulsive seizure mechanisms and effects of anticonvulsants; pharmacological alterations of cerebral evoked potentials, sudden unexpected death in epilepsy (SUDEP).

Fisher, Derek, Professor, Ph.D., (Carbondale), University of Pittsburgh School of Medicine, 2006; 2012. Bacterial pathogenesis and physiology, developmental regulation in Chlamydia.

Hamilton-Brehm, Scott D., Associate Professor, Ph.D., (Carbondale), University of Georgia, 2008; 2016. Microbial characterization of unique extreme environments, characterization of novel metabolism pathways, and DNA investigations from ancient artifacts.

Hascup, Erin R., Associate Professor, Ph.D., (Springfield), University of Kentucky, 2007; 2013. Neurological, neurochemical, and cognitive changes in aging, Alzheimer's disease, and related disorders; stage-specific therapeutics, early diagnosis and treatment in Alzheimer's disease

Hascup, Kevin N., Associate Professor, Ph.D., (Springfield), University of Kentucky, 2007; 2018. Metabolic and glutamatergic dysregulation during Alzheimer's disease progression and successful aging; identification of disease-modifying life-style factors and biomarker-targeted therapeutics.

Jadavji, Nafisa M., Assistant Professor, Ph.D., (Carbondale), McGill University, 2013; 2024. The impact of nutrition on neurobiology of aging.

Jayakody, Lahiru N, Associate Professor, Ph.D., (Carbondale), Kagoshima University, Japan, 2014; 2019. Developing synthetic microbes to produce renewable fuels, chemicals, pharmaceuticals, and proteins from biomass and industrial waste, including plastic, and investigate protein post-translational mechanisms to develop synthetic microbiology and metabolic engineering tools.

Jensik, Philip, Associate Professor, Ph.D., (Carbondale), Southern Illinois University Carbondale, 2009; 2016. Neurodevelopment and neurodegenerative disorders, functional genetics, neurobehavioral measures.

Kadyrov, Farid, Professor, Ph.D., (Carbondale), Russian Academy of Sciences, 1997; 2008. DNA replication and repair, DNA damage in cancer.

Konjufca, Vjollca, Professor, Ph.D., (Carbondale), University of Arkansas, Fayetteville, 2002; 2010. Immunology, host-pathogen interactions.

Kontoyianni, Maria, Professor and Director of Medicinal Chemistry concentration, Ph.D., (Edwardsville), University of North Carolina-Chapel Hill, 1992; 2009. Computational chemistry, virtual screening, structure- and ligand-based molecular design, hybrid approaches towards drug discovery.

Kvitsiani, Duda, Assistant Professor, Ph.D., (Carbondale), University of Vienna, Austria, 2006; 2024. Circuits that support animal decision-making.

Kwon, Guim, Professor, Ph.D., (Edwardsville), Southern Illinois University, 1992; 2005. Glucose and insulin homeostasis, artificial pancreas system.

Li, Cheng-Shu, Associate Professor, M.D., Ph.D., (Carbondale), Jianusi Medical School, Kochi Medical School, 1982; 1992. Central processing of gustatory information using both in vivo (extracellular recording and intracellular recording) and in vitro (patch clamping) techniques.

Loret de Mola, Ricardo, Professor and Chair of Department of Obstetrics and Gynecology, M.D., (Springfield), Monterrey Institute of Technology 1988; 2007. Care of couples with infertility, and women with endometriosis.

Madigan, Michael T., Professor and Distinguished Scholar, Emeritus, Ph.D., (Carbondale), University of Wisconsin, 1976; 1979.

Metz, Anneke M., Associate Professor and Director of Premedical Programs, Biochemistry, Ph.D., (Carbondale), University of Texas, 1998; 2009. Biology education; pre-health professional education.

Miyoshi, Takushi, Assistant Professor, Ph.D., (Carbondale), Kyoto University, 2017; 2024. Molecular biology in inner ear hair cells.

Nie, Daotai, Professor, Ph.D., (Springfield), University of South Carolina, 1997; 2005. Molecular and cellular biology of cancer, tumor metastasis, development of tumor therapeutics.

Nieto, Marcelo, Professor, Ph.D., (Edwardsville), Universidad Nacional de Cordoba (Cordoba, Argentina), 2000; 2006. Drug design and synthesis of rational focused libraries for diverse therapeutic areas (antimicrobial, anticancer, pain, etc.).

Nordman, Jacob C., Assistant Professor, Behavioral Neuroscience Ph.D., (Carbondale), George Mason University, 2014; 2021. Stress, synaptic and intrinsic plasticity, brain circuits, aggression, maladaptive behavior.

Olivo-Marston, Susan, Associate Professor, Ph.D., M.P.H., (Springfield), Georgetown University, Johns Hopkins University, 2005; 2021. Cancer epidemiology, the role of lifestyle, diet, and obesity on carcinogenesis.

Parrilla Carrero, Jeffrey, Assistant Professor, Ph.D., (Springfield), Medical University of South Carolina, 2015; 2023. Target circuit-specific cellular adaptation associated with addictive drug intake for effective intervention against drug addiction.

Patel, Bhargav, Assistant Professor, Ph.D., (Edwardsville), St. John's University, 2017; 2021. Discovery of anti-cancer agents as well as compounds for the treatment of neurodegenerative diseases.

Pond, Amber, Associate Professor and Director of Anatomy and Neurobiology concentration, Ph.D., (Carbondale), Mississippi University, 1995; 2012. Skeletal muscle physiology and biochemistry, focusing on the mechanisms contributing to skeletal muscle atrophy.

Premkumar, Louis S., Professor, Ph.D., (Springfield), Australian National University, 1992; 1999. Molecular mechanism(s) underlying pain perception; structure, function of ion channels, treatment options for chronic pain associated with peripheral neuropathies.

Rader, Bethany, Associate Professor, Ph.D., (Carbondale), University of Oregon, 2006; 2014. Beneficial host-microbe interactions, innate immunology, microbial ecology and systems biology.

Ran, Sophia, Professor, Ph.D., (Springfield), Weizmann Institute of Science, 1989; 2003. Tumor physiology, angiogenesis and lymphangiogenesis, breast cancer metastasis.

Rao, Krishna, Professor, M.D., Ph.D., (Springfield), University of Washington, University of Miami, 2002; 2007. Role of Rab25 as a tumor suppressor, treatment of head and neck cancer.

Richardson, Ben, Assistant Professor and Director of Pharmacology and Neuroscience concentration, Ph.D., (Springfield), Southern Illinois University, 2012; 2020. Sensorimotor circuit anatomy, function, and plasticity in neurological disease/disorders (autism, alcoholism, and aging).

Rybak, Leonard P., Professor, Emeritus, M.D., Ph.D., (Springfield), University of Minnesota, 1973; 1981. Mechanism(s) underlying drug- and noise-induced hearing loss, development of therapeutics in reducing or preventing hearing loss.

Sarko, Diana K., Associate Professor, Ph.D., (Carbondale), University of Florida, Neuroscience, 2006; 2015. Systems neuroscience including sensory processing and plasticity; multisensory integration; perception; behavior; and comparative neurobiology.

Schober, Joseph, Professor, Ph.D., (Edwardsville), University of Illinois Chicago, 2003; 2007. Cell motility, cell cytoskeleton, cancer cell biology and cell-hydrogel interaction.

Selinfreund, Richard, Associate Professor, Ph.D., (Springfield), New Mexico State University/Los Alamos National Laboratory; 1988; 2021. Clinical biomarkers and treatment for metabolic disease.

Sudheimer, Keith, Assistant Professor, Ph.D., (Carbondale), University of Michigan, 2009; 2020. Neurobiology of stress and emotion.

Tischkau, Shelly A., Professor and Chair of Department of Medical Microbiology, Immunology and Cell Biology and Department of Pharmacology, Ph.D., (Springfield), University of Illinois, Urbana-Champaign, 1995; 2007. Neuroendocrinology, environmental toxicology, regulation of molecular circadian rhythms in health and disease states, including cancer and diabetes.

Tobón, Gabriel J., Assistant Professor, M.D., Ph.D., (Springfield), Université de Bretagne Occidentale, France, 2012; 2021. Study of B lymphocytes in the pathogenesis of Autoimmune Diseases (Systemic Lupus Erythematosus and Sjogren's syndrome).

Torry, Donald S., Professor and Associate Dean for Research, Ph.D., (Springfield), Southern Illinois University, 1989; 2000. Human reproductive biology, cellular biology of angiogenic growth factors and immune cytokines during pregnancy, molecular biology of placental gene expression.

Weilbaecher, Rodney, Assistant Professor, Ph.D., (Carbondale), University of California, Berkeley, 1997; 2007. Gene regulation, post-translational modifications, telomere biology.

Wilber, Andrew, Associate Professor and Director of Cell Biology, Immunology and Cancer Biology concentration, Ph.D., (Springfield) University of Minnesota, 2006; 2008. Gene therapy for hemoglobin disorders beta-thalassemia and sickle cell anemia, gene expression regulation, stable gene delivery using non-viral and viral integrating vector systems and cancer immunotherapy.

Witt, Ken, Professor, Ph.D., (Edwardsville), University of Arizona, College of Medicine 2001; 2005. CNS drug delivery, blood-brain barrier, somatostatin brain effects in aging and disease, develop therapeutics to treat Alzheimer's disease progression.

Young, Matthew J., Associate Professor, Ph.D., (Carbondale), University of Manitoba, Canada, 2008; 2015. Understanding the mechanisms of how toxicants disrupt mitochondrial DNA homeostasis, mitochondrial DNA genome maintenance in human diseases such as cancer and mitochondrial disease.

Yuan, Rong, Associate Professor, M.D., Ph.D., (Springfield), Shanghai Second Medical University, P.R. China, 2000; 2012. Molecular Biology of aging and longevity.

Zheng, Zhengui (Patrick), Associate Professor, Ph.D., (Carbondale), Shanghai University of Traditional Chinese Medicine, 1997; 2014. Steroid hormone-regulated sexual dimorphic development of external genitalia, brain, and limbs and the genetic impact of environmental chemicals on sexual dimorphic organ development.

Music

Southern Illinois University Carbondale is accredited by the National Association of Schools of Music (NASM), 11250 Roger Bacon Drive, Suite 21, Reston, Virginia 20190-5248, (703) 437-0700.

The Graduate Faculty in the School of Music is made up of accomplished performers, composers, and scholars with a deep concern for preparing their Master of Music students for future success. In addition to their many professional activities – both nationally and internationally, they present many recitals, lectures, and workshops for the University community on the SIUC campus. Please visit the SIUC School of Music website and the SIUC Graduate School website for more information.

Master of Music (M.M.) in Music

Concentrations

- Conducting (for emphases see list below)
- Performance (for emphases see list below)
- Music Theory and Composition
- Music History and Literature
- Music Education
- Collaborative Piano

Conducting Emphases

- Choral
- Orchestral
- Wind

Performance Emphases

- Orchestral Instruments
- Piano
- Vocal
- Guitar

Performing Ensembles

The strength of the SIUC School of Music is the abundance of performing opportunities available to its students. There are vast performing opportunities for all Master of Music performers and composers, often working side by side with their mentors.

Ensembles include: Southern Illinois Symphony Orchestra, SIU Wind Ensemble and Symphonic Band, SIU Concert Choir, Chamber Choir and Choral Union, SIU Jazz Ensemble, Marjorie Lawrence Opera Theater, SIU Guitar Ensemble, Southern Illinois Improvisation Unit, SIU Percussion Ensemble, SIU Flute Choir, SIU Clarinet Choir, and Marching Salukis. Other ensembles include: SIU Graduate String Quartet, Altgeld Chamber Players, Southern Illinois Jazztet, Southern Illinois Chamber Music Society, and New Chicago Chamber Orchestra. Throughout the year, there are hundreds of concerts, recitals, operas, musicals, and emerging composer recitals.

Graduate students in residence must participate in an ensemble, as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist, every semester in residence. In addition, students may elect participation in other regularly scheduled ensembles.

School of Music Resources

Morris Library is a fully functional and impressively equipped research center.

The School of Music is a three building complex including Shryock Auditorium, the Old Baptist Foundation Recital Hall, and Altgeld Hall, a replica of King Ludwig's Bavarian castle. Facilities include:

- Rehearsal spaces for large ensembles, choral, jazz, music theater, and chamber music, which often serve as alternate performance spaces;
- Practice rooms, including rooms for piano majors and three practice organs: a four-rank Ott tracker organ, a six-rank Moeller, and a four-rank Wicks;
- Computer/Listening Lab, available for all music students;
- Recording facilities for live concert recordings as well as professional studio recordings;
- The Center for Experimental Music (CEM), a computer composition laboratory for all aspects of electro-acoustic music production, available for composition students.

Also part of the School of Music complex of buildings are:

- Shryock Auditorium: the primary concert space for orchestra, opera, band, and choral concerts, located adjacent to the School of Music; it houses a fifty-eight rank Reuter pipe organ, the principal instrument for recitals and teaching;
- Old Baptist Foundation Recital Hall: a small chamber music space for more intimate recitals.

Application for Admission

Students interested in pursuing the Master of Music should apply for admission through the SIUC Graduate School application website.

The online application system includes a separate School of Music application. All applicants must complete both applications in order to be considered for graduate work at SIUC. The music application is sent directly to the Director of Graduate Studies in Music:

Director of Graduate Studies in Music
School of Music
Altgeld Hall - Mail Code 4302
Southern Illinois University
1000 S Normal Ave
Carbondale, IL 62901

In addition to the application materials above, International students require additional documents including financial disclosure form, a photocopy of undergraduate diploma, and other materials for attaining a student VISA. Non-English speaking students must also submit a recent TOEFL score.

All forms are provided and explained on the Graduate School application website. Further clarification or additional questions regarding the entire application process may be answered by writing to: gradmus@siu.edu.

Auditioning Process

Each applicant must be assessed by members of the School of Music faculty in order to be accepted into his/her specific discipline. Performers must audition either in person or recording; composers should submit scores and recordings of their compositions; scholars should submit examples of their researched writing. More information can be found on the School of Music website: music.siu.edu.

In order to set up an audition, contact the specific faculty member in your area, as found on the School of Music website. You are also encouraged to contact that performer, composer, or scholar, as well as the Director of Graduate Studies in Music, at any time, before or during the application process, if you have area specific questions or concerns.

Assistantships, Fellowships, and Tuition Waivers

There are a number of opportunities for graduate students to receive financial assistance with their degree.

Students should apply for Master-level fellowships by sending the appropriate application (found on the SIUC Graduate School website) and supporting documentation directly to the Director of Graduate Studies in Music. The annual deadline for receipt of this material is January 1st.

Graduate Assistantships offer students a complete tuition waiver plus a monthly stipend in turn for teaching and/or research assistance in the School of Music. University fees are not waived and can be calculated at tuition.siu.edu. The application is included as part of the specific School of Music application, completed with the SIUC Graduate School application. However, the deadline for primary consideration for a GA is February 15th.

There are several additional types of financial assistance available including: PROMPT Fellowships, partial tuition waivers, Excellence Through Commitment Graduate School Scholarships, etc. Information about cost and financial help can be found at: gradschool.siu.edu/cost-aid.

Additional aid for Master of Music students includes scholarships for string students, given annually by the Southern Illinois Chamber Music Society, and two annual competitions for composition students: the Carl Deis Prize and the Mykytyn Distinguished Composition Award.

Screening Exams

All incoming students must take screening examinations in Aural Skills, Music Theory, Music History pre-1750, and Music History post-1750. These exams are available for online administration and should be taken as soon as possible after being notified of your acceptance into the program, but before arriving on campus to begin your degree. Students in collaborative piano (vocal), choral conducting, and vocal performance are required to take additional screening examinations in French diction, Italian diction, German diction, and IPA diction. Students in collaborative piano-instrumental accompanying emphasis are strongly encouraged to take the additional screening examinations in diction. These examinations are administered on or before the first day of classes. Incoming students found deficient in certain areas will be assigned remedial coursework - MUS 399 A-K Graduate Music Review - in aural skills, music theory, music history, diction, or other pertinent areas. All deficiencies must be corrected by taking the appropriate sections of MUS 399 before registering for graduate-level courses in those areas, and it is mandatory to take care of all deficiencies during their first year of the M.M. program. For each assigned

section of Graduate Music Review, the minimum grade to fulfill the deficiency is *B* or better, with the exception of Graduate Ear Training which requires a grade of *C* or better.

Curriculum

The curriculum for each M.M. concentration is slightly different, appropriately focusing on specific aspects of training. Current M.M. students should follow the curricular guides found below for their specific M.M. concentration. These guides are also found on the School of Music Website. Any deviations from this should be discussed with your major professor, and then proposed to the School of Music Graduate Committee.

Graduate students self-register each semester, on the SIUC website: gradschool.siu.edu/registration.

Each student should regularly meet with both their major professor and the Director of Graduate Studies in Music to ensure that they are fulfilling all the curricular responsibilities of their specific concentration.

Note: Only courses at the 500-level count toward the total credit hour count to complete the curriculum for the Master of Music degree.

Performance Concentration

Performance Emphasis - Orchestral Instruments

Course Number	Credit Hours
MUS 501	3
MUS 502A or MUS 502B	2
MUS 440A-Y (as determined by audition, maximum of 3 credit hours allowed at 440 level)	0-3
MUS 540A-Y	6-9
MUS 565A-H*	1,1
MUS 595	1
MUS 598	3
MUS 566C or MUS 566D	4
MUS 470, MUS 472, MUS 474, MUS 475, MUS 476, MUS 477, MUS 478A, MUS 478B, MUS 573, or MUS 574	3
MUS 461	3
MUS 472, MUS 479A-I, MUS 481, MUS 482, MUS 499, or approved graduate music electives	6
TOTAL *Students must take 1 credit hour in two different semesters to fulfill Chamber Music requirement.	36

Performance Emphasis - Piano

Course Number	Credit Hours
MUS 501	3
MUS 502A and MUS 502B	4
MUS 440Q (as determined by audition, maximum of 3 credit hours allowed at 440 level)	0-3
MUS 540Q	6-9
MUS 595	1
MUS 598	3
MUS 566K, MUS 565F	1,1
MUS 565A-H or MUS 566A-L	1,1

Course Number	Credit Hours
MUS 470, MUS 472, MUS 474, MUS 475, MUS 476, MUS 477, MUS 478A, MUS 478B, MUS 573, or MUS 574	3
MUS 461	3
MUS 472, MUS 479A-I, MUS 481, MUS 482, MUS 499 or approved graduate music electives	6
TOTAL	36

Performance Emphasis - Vocal

Course Number	Credit Hours
MUS 501	3
MUS 502A or MUS 502B	2
MUS 470	3
MUS 440P (as determined by audition, maximum of 3 credit hours allowed at 440 level)	0-3
MUS 540P	6-9
MUS 598	3
MUS 595	1
MUS 566F	4
MUS 401	2
MUS 403	2
MUS 461	3
MUS 479C	2
Approved coaching, theater, dance, or music electives	2
TOTAL	36

Performance Emphasis - Guitar

Course Number	Credit Hours
MUS 501	3
MUS 502A or MUS 502B	2
MUS 440T (as determined by audition, maximum of 3 credit hours allowed at 440 level)	0-3
MUS 540T	6-9
MUS 595	1
MUS 598	3
MUS 566H	2
MUS 565A-H*	1,1
MUS 470, MUS 472, MUS 474, MUS 475, MUS 476, MUS 477, MUS 478A, MUS 478B, MUS 573, or MUS 574	3
MUS 461	3
MUS 472, MUS 479A-I, MUS 481, MUS 482, MUS 499, or approved graduate music electives	8
TOTAL *Students must take 1 credit hour in two different semesters to fulfill Chamber Music requirement.	36

Conducting Concentration Emphasis - Orchestral

Course Number	Credit Hours
MUS 501	3
MUS 502A and MUS 502B	4
MUS 540W	6
MUS 556	2
MUS 595	1
MUS 598	3
MUS 566D	4
MUS 470, MUS 472, MUS 474, MUS 475, MUS 476, MUS 477, MUS 478A, MUS 478B, MUS 573, MUS 574	6
Graduate courses in non-profit fundraising/ organization, e.g. PADM 547 or PADM 549, MUS 440A-Y or MUS 540A-Y (1, 1, 1), MUS 565B, or approved graduate music electives	7
TOTAL	36

Emphasis - Wind

Course Number	Credit Hours
MUS 501	3
MUS 502A and MUS 502B	4
MUS 440W	3
MUS 540W	6
MUS 556	4
MUS 595	1
MUS 598	3
MUS 566C	4
MUS 470, MUS 472, MUS 474, MUS 475, MUS 476, MUS 477, MUS 478A, MUS 478B, MUS 573, or MUS 574	3
MUS 458	2
MUS 440A-Y or MUS 540A-Y (1, 1, 1) or approved graduate music electives	3
TOTAL	36

Emphasis - Choral

Course Number	Credit Hours
MUS 461	3
MUS 501	3
MUS 502A and MUS 502B	4
MUS 440W	3
MUS 540W	6
MUS 556	2
MUS 595	1
MUS 598	3
MUS 566F	4

Course Number	Credit Hours
MUS 470, MUS 472, MUS 474, MUS 475, MUS 476, MUS 477, MUS 478A, MUS 478B, MUS 573, or MUS 574	3
MUS 453	2
MUS 440A-Y or MUS 540A-Y (1, 1, 1) or approved graduate music electives	2
TOTAL	36

Music Theory and Composition Concentration

Course Number	Credit Hours
MUS 501	3
MUS 502A and MUS 502B	4
MUS 480 (as determined by audition, maximum of 3 credit hours allowed at 480 level)	0-3
MUS 580	6-9
MUS 545	2
MUS 599	5
MUS 595	1
MUS 566A-L*	4
MUS 478A or MUS 478B	3
MUS 406	2
MUS 499, MUS 481, or approved graduate music electives	3
TOTAL	36

*Third and/or fourth semester(s) perform with the option of serving as “composer-in-residence” [During their second semester in residence, the composition student should formally apply to serve as a “composer-in-residence” with the appropriate ensemble director; it is not mandatory that ensemble directors participate.]

Music Education Concentration

Course Number	Credit Hours
MUS 501	3
MUS 502A or MUS 502B	2
MUS 503	3
MUS 509	3
MUS 484	3
Approved music education electives: MUS 440A-Y, MUS 453, MUS 454, MUS 455, MUS 456A, MUS 456B, MUS 457, MUS 483, MUS 499, MUS 500, MUS 540A-Y, MUS 550	6*
MUS 470, MUS 472, MUS 474, MUS 475, MUS 476, MUS 477, MUS 478A, MUS 478B, MUS 573, MUS 574	6
MUS 566A-L	4**
Thesis MUS 599 (6 CH) or MUS 595 (1 CH) plus 5*** credit hours of approved music education electives	6
TOTAL	36

*No more than two credit hours of MUS 440A-Y or MUS 540A-Y may count toward the approved music education elective requirement.
**Music education students in residence must participate in a major ensemble every semester in residence. Part-time students may petition to substitute other coursework to fulfill the ensemble requirement.
***A minimum of two credit hours of elective must be at the 500 or above level

Music History and Literature Concentration

Course Number	Credit Hours
MUS 501	3
MUS 502A and MUS 502B	4
MUS 599	6
MUS 470, MUS 472, MUS 474, MUS 475, MUS 476, MUS 477, MUS 478A, MUS 478B, MUS 573 or MUS 574	9
MUS 566A-L	4
Approved non-music history graduate music electives*	6
MUS 499, MUS 482, MUS 500, or approved graduate music history electives*	4
TOTAL	36

*A minimum of 1 credit hour of elective must be at 500 or above level.

In addition to the general requirements for graduation, music history and literature majors must have a reading ability in at least one foreign language. It is recommended that students successfully complete two semesters of a foreign language at the undergraduate level (preferably French or German), or pass FR 488 or GER 488 with a grade of *B* or higher.

Collaborative Piano Concentration

Course Number	Vocal Credit Hours	Instrumental Credit Hours
MUS 501	3	3
MUS 502A or MUS 502B	2	2
MUS 540Y	12	12
MUS 454	2	2
MUS 470, MUS 472, MUS 474, MUS 475, MUS 476, MUS 477, MUS 478A, MUS 478B, MUS 573, or MUS 574	6 MUS 470 is required	6 MUS 472 is required
MUS 566A-L	4	4
MUS 479	2 MUS 479C	2 MUS 479J
MUS 598A vocal accompanying recital (1 credit hour each) MUS 598B instrumental accompanying recital (1 credit hour each)	3 (2 vocal recitals; 1 instrumental recital)	3 (2 instrumental recitals; 1 vocal recital)
MUS 595	1	1
Approved graduate music electives	1	1
TOTAL	36	36

Creation of the Graduate Faculty Committee

In the Fall of the second year, each student should formally create their Graduate Faculty Committee. Although the three members of this committee are the student's choice, they must be SIUC faculty with whom the student has had academic contact, and they must agree to serve on this important committee. The student must complete and submit the Graduate Faculty Committee Form, signed by the student's choice for Chair of this committee, to the Director of Graduate Studies.

Master of Music Thesis Requirements

Each of the various concentrations of the M.M. degree have slightly different thesis requirements, chosen from the following, separately or in combination:

- MUS 599: A major written thesis on a topic proposed to and approved by the School of Music Graduate Committee.
    - Composers write a major composition under direction of the student's Graduate Faculty committee.
- MUS 598: A graduate recital under approval and direction of the student's recital jury. This may be performing, conducting, or directing.
    - Collaborative Piano students perform three recitals as per the curriculum above.
- MUS 595: A written research paper under the direction of the student's Graduate Faculty Committee.
    - Performers write extended program notes to accompany their graduate recital;
    - Composers write extended notes to accompany their major composition thesis.

Research Papers and Theses (including compositions) must be submitted to the SIUC Graduate School on or before their posted deadline. For more information, visit: gradschool.siu.edu/current-students/thesis-dissertation-research paper.

Final Comprehensive Examinations

Final examinations are created and administered individually by each student's Graduate Faculty Committee, during the student's final semester, prior to the SIUC Graduate School's deadline. The exams are in two parts:

1. an extended written exam, essay style; and
2. a one hour oral exam with the student's Graduate Faculty Committee.

Chronology and Forms

In addition to meeting regularly with the Director of Graduate Studies in Music, students can learn about all expectations in regard to their degree program by reading the "Chronology of Master of Music Procedures" found on the School of Music website. This document contains links to all the necessary forms that are to be submitted during their degree. Links to these forms can be found at: gradschool.siu.edu/about-us/forms.

Music Courses

MUS400 - Performance Techniques Individual instruction in any secondary applied field. Designed to provide added depth of preparation for teaching instrumental and vocal music. Restricted to graduate music major or consent of instructor. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1

MUS401 - Opera Workshop Open to all appropriately experienced singers, actors, dancers, instrumentalists and theater technicians. Study of opera/operetta repertoire and performance techniques. Special approval needed from the instructor. Credit Hours: 1-2

MUS402 - Musical Theater Workshop Open to all appropriately experienced actors, singers, dancers, instrumentalists and theater technicians. Study of musical theater/musical revue repertoire and performance techniques. Special approval needed from the instructor. Credit Hours: 1-2

MUS403 - Lyric Theater Ensemble A select group which performs operatic or musical theater literature, usually in the form of a fully mounted production each semester. May be repeated for credit. Prerequisite: audition or consent of instructor. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-16

MUS406 - Electronic Composition and Sound Synthesis Principles of acoustics, parameters of music/sound, basic sound synthesis, wave forms and manipulation of wave forms, digital audio and digital audio platforms, audio recording/engineering, microphone types/use, utilizing sample libraries, mixing, and basic mastering. Restricted to 3rd Year standing. Credit Hours: 2

MUS407 - Modal Counterpoint Study of Renaissance contrapuntal techniques. Extensive writing practice, and analysis of stylistic models. Prerequisite: MUS 308 with a C or better. Credit Hours: 2

MUS410A - Piano Pedagogy Practicum Provides undergraduate and graduate piano pedagogy majors with the opportunity for supervised practice piano teaching. Course activities include lesson-planning, conducting and evaluating studio piano and class piano lessons, and a survey of important educational issues that impact on effective piano teaching. Special approval needed from the instructor. Credit Hours: 2

MUS410B - Piano Pedagogy Practicum Provides undergraduate and graduate piano pedagogy majors with the opportunity for supervised practice piano teaching. Course activities include lesson-planning, conducting and evaluating studio piano and class piano lessons, and a survey of important educational issues that impact on effective piano teaching. Special approval needed from the instructor. Credit Hours: 2

MUS420 - Instrument Repair A shop-laboratory course dealing with the selection, tuning, adjustment, maintenance, and repair of musical instruments. Prerequisite: two semesters of instrumental techniques courses or consent of instructor. Credit Hours: 1

MUS421 - Advanced Analysis Structure, form, and design in music as the coherent organization of all of its factors. Analysis of works chosen from a variety of styles and genres. Prerequisite: MUS 321 with a C or better. Credit Hours: 2

MUS430A - Jazz Arranging I Step-by-step approach to jazz arranging and techniques from lead sheet construction through full big band arrangements. Students will write and arrange for combos, trombone section and rhythm, saxophone section and rhythm, and full big band with all projects to be played by student ensembles. Special approval needed from the instructor. Credit Hours: 2

MUS430B - Jazz Arranging II Step-by-step approach to jazz arranging and techniques from lead sheet construction through full big band arrangements. Students will write and arrange for combos, trombone section and rhythm, saxophone section and rhythm, and full big band with all projects to be played by student ensembles. Prerequisite: MUS 430A with a C or higher. Credit Hours: 2

MUS440A - Applied Music-Flute May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440B - Applied Music-Oboe May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble

as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440C - Applied Music-Clarinet May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440D - Applied Music-Bassoon May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440E - Applied Music-Saxophone May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440F - Applied Music-Horn May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440G - Applied Music-Trumpet May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440H - Applied Music-Trombone May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440I - Applied Music-Euphonium May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3

credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440J - Applied Music-Tuba May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440K - Applied Music-Percussion May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440L - Applied Music-Violin May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440M - Applied Music-Viola May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440N - Applied Music-Cello May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440O - Applied Music-Double Bass May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440P - Applied Music-Voice May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440Q - Applied Music-Piano May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440R - Applied Music-Organ May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440S - Applied Music-Harpsichord May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440T - Applied Music-Guitar May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440U - Applied Music-Recorder May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440V - Applied Music-Coaching May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate

degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440W - Applied Music-Conducting May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440X - Applied Music-Musical Theater Voice May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Not available outside Music Theater degree. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS440Y - Applied Music-Collaborative Piano May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Undergraduate students must be concurrently enrolled in one of the major ensembles. Graduate students must be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS450 - Topics in Ethnomusicology Courses in this series are designed for advanced undergraduate and graduate students in music and related disciplines to the issues, theories, and interdisciplinary research methodologies of ethnomusicology. Restricted to 3rd Year/4th Year/graduate status. Credit Hours: 3

MUS450A - Women in Music (Same as WGSS 450A) Explores the creative contributions of women in music, examining women's participation across a range of genres, cultural/geographic areas, and time periods. Restricted to 3rd Year/4th Year/graduate music major or consent of instructor. Credit Hours: 3

MUS450B - Music and Social Change Examines music as a force in movements for social change as well as music outside of formally identified movements serving this purpose. Seeks out musical sources and cultural meanings, along with connections between music in movements across time, space, culture, and genre. Restricted to 3rd Year/4th Year/graduate music major or consent of instructor. Credit Hours: 3

MUS450C - Ethnomusicology: Sound Healing Interdisciplinary exploration of the physical properties, physiological effects, and integrative possibilities of sound/music to empower, transform, and heal mind-body-spirit individually and in community. Restricted to 3rd Year/4th Year/graduate or consent of instructor. Credit Hours: 3

MUS450D - Ethnomusicology: Healing and the Creative Process Explores the healing potential embodied in the process of creating across a range of different contexts & media, drawing on research from interdisciplinary fields. Restricted to 3rd Year/4th Year/graduate or consent of instructor. Credit Hours: 3

MUS452A - Traditions of Uppity Women's Blues (Same as AFR 452A and WGSS 452A) Examines the tradition of "uppity" women's blues from the so-called "classic" blues singers of the 19th century (Gertrude "Ma" Rainey, Bessie Smith, Ida Cox, etc.) to the contemporary blues of Saffire, Denise LaSalle and others. Explores ways blues women challenge conventions of gender and sexuality, racism, sexism,

classism and homophobia. Restricted to upper level music major. Special approval needed from the department. Credit Hours: 3

MUS452B - Blues and Boogie Woogie Piano Styles (Same as AFR 452B) Traces the history, culture, and stylistic developments of blues and boogie woogie piano. Explores socio-cultural contexts and examines key players, pieces, and musical styles. Restricted to upper level music major. Special approval needed from the department. Credit Hours: 3

MUS453 - Advanced Topics in Choral Music Practicum in the selection, rehearsal, and performance of appropriate literature. Study of techniques for achieving proficient performance and musical growth. For experienced teachers and advanced students. Credit Hours: 2

MUS454 - Advanced Topics in Instrumental Music Practicum in the selection, rehearsal, and performance of appropriate literature. Study of techniques for achieving proficient performance and musical growth. Designed for experienced teachers and advanced students. Credit Hours: 2

MUS455 - Advanced Topics in Elementary School Music Practicum in the selection and use of materials for the elementary school program. Study of techniques for achieving balanced musical growth. For experienced teachers and advanced students. Credit Hours: 2

MUS456A - Music for Exceptional Children Theories and techniques for therapeutic and recreational use of music with physically and mentally handicapped children. Includes keyboard, autoharp, guitar, and tuned and untuned classroom instruments. Take in sequence. Credit Hours: 2

MUS456B - Music for Exceptional Children Applications for the gifted, emotionally disturbed, and culturally disadvantaged child. Take in sequence. Prerequisite: MUS 456A. Credit Hours: 2

MUS457 - Conducting the Middle/High School Band This course is designed to further develop the skills learned in Introduction to Conducting and Advanced Conducting. Emphasis will be placed on advanced conducting techniques and score study. Topics will include middle/high school band literature, error detection, rehearsal planning, and teaching techniques. Prerequisites: MUS 316, MUS 317, and/or MUS 318. Credit Hours: 2

MUS458 - Survey of Wind Literature The study of wind literature from its beginning in the music of Gabrieli through the classical wind serenades of Mozart to the composers of today. The course will include music written for wind chamber groups, as well as music for wind ensemble and the traditional concert band. Restricted to 3rd Year/4th Year/graduate music major or consent of instructor. Credit Hours: 2

MUS461 - Applied Music Pedagogy Specialized problems and techniques employed in studio teaching of any particular field of music performance. Study of music literature appropriate for the various levels of performance. Opportunity, as feasible, for supervised instruction of pupils. Meets with appropriate instructor, individually or in groups. Special approval needed from the instructor. Credit Hours: 3

MUS470 - History of Opera The development of the music, libretti and staging of opera from the late Renaissance to the present. Prerequisite: MUS 357B, or consent of instructor. Credit Hours: 3

MUS472 - Chamber Music Literature A study of literature for the principal types of chamber music groups. Special approval needed from the instructor. Credit Hours: 3

MUS474 - Survey of Jazz History In-depth study of the history of jazz through examination of historical lineage and perspective, recorded output and important stylistic characteristics of each major period. Biographical backgrounds of major composers and performers will be considered as they contribute to the evolution of musical styles. Prerequisite: none. Credit Hours: 3

MUS475 - Baroque Music The development of vocal and instrumental music in the period 1600-1750, from Monteverdi to Bach and Handel. Oratorio and Cantata, the influence of opera, sonata, suite, and concerto. Prerequisite: MUS 357A with a grade of C or better, or graduate standing. Credit Hours: 3

MUS476 - Classical Music Development of the sonata, symphony, concerto, and chamber music in the 18th and early 19th centuries, with emphasis on the music of Haydn, Mozart, and Beethoven. Prerequisite: MUS 357B with a grade of C or better, or graduate standing. Credit Hours: 3

MUS477 - Romantic Music Development of the symphony and sonata forms, chamber music, and vocal music in the 19th and early 20th centuries. Rise of nationalism and impressionism. Prerequisite: MUS 357B with a grade of C or better, or graduate standing. Credit Hours: 3

MUS478A - Modern Music I Examine important works and figures from Western Music in the first half of the 20th Century. Topics included will be Atonality, Serialism, Impressionism, Expressionism, Nationalism, Ballet and Theater Music, Neo-Classicism, Experimentalism, and Jazz. A strong emphasis will be placed on the social and political context in which the music was created. Prerequisite: MUS 357B with a grade of C or better, or graduate standing. Credit Hours: 3

MUS478B - Modern Music II Examine important works and figures from Western Music in the second half of the 20th Century. Included will be atonality, serialism, avant-garde, minimalism, electronic music, experimental instruments and indeterminacy. Emphasis placed on the social, economic and political context. Students will examine the compositional philosophies and techniques of the era. Prerequisite: MUS 357B with a grade of C or better, or graduate standing. Credit Hours: 3

MUS479A - Solo Performance Literature Topics presented will depend upon the needs of students and instructors schedules. (A) Piano Literature I, including an introductory study of harpsichord music. Special approval needed from the instructor. Credit Hours: 2-8

MUS479B - Solo Performance Literature Topics presented will depend upon the needs of students and instructors schedules. (B) Organ Literature, in relation to the history of the instrument. Special approval needed from the instructor. Credit Hours: 2-8

MUS479C - Solo Performance Literature Topics presented will depend upon the needs of students and instructors schedules. (C) Art Song-Literature. Special approval needed from the instructor. Credit Hours: 2-6

MUS479D - Solo Performance Literature Topics presented will depend upon the needs of students and instructors schedules. (D) Guitar and Lute Literature. Special approval needed from the instructor. Credit Hours: 2-8

MUS479E - Solo Performance Literature Topics presented will depend upon the needs of students and instructors schedules. (E) Solo String Literature. Special approval needed from the instructor. Credit Hours: 2-8

MUS479F - Solo Performance Literature Topics presented will depend upon the needs of students and instructors schedules. (F) Solo Wind Literature. Special approval needed from the instructor. Credit Hours: 2-8

MUS479G - Solo Performance Literature Topics presented will depend upon the needs of students and instructors schedules. (G) Percussion Literature. Special approval needed from the instructor. Credit Hours: 2-8

MUS479I - Solo Performance Literature Topics presented will depend upon the needs of students and instructors schedules. (I) Piano Literature II. Special approval needed from the instructor. Credit Hours: 2-8

MUS479J - Instrumental Sonata Duo Literature with Piano Topics presented will depend upon the needs of students and instructors schedules. (J) Instrumental Sonata Duo Literature with Piano. Special approval needed from the instructor. Credit Hours: 2-8

MUS479K - Chamber Music Literature with Piano Topics presented will depend upon the needs of students and instructors schedules. (K) Chamber Music Literature with Piano. Special approval needed from the instructor. Credit Hours: 2-8

MUS480 - Advanced Composition Original composition involving the larger media. Individual instruction. Prerequisite: two semesters of MUS 380 with a grade of C or better and approval of

composition jury. Undergraduate students limited to 2 credit hours per semester. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 2

MUS481 - Special Topics in Music Theory and Composition An advanced seminar exploring specialized areas in music theory and composition. An emphasis on current trends, composing, score study, and analysis. Prerequisite: MUS 321 and MUS 322 or prior consent of instructor. Credit Hours: 1-4

MUS482 - Readings in Music History and Literature Assigned readings and reporting of materials pertaining to a particular phase of history or literature. Approximately three hours preparation per week per credit. Prerequisite: MUS 357A and B, or prior consent of instructor. Credit Hours: 1-4

MUS483 - Readings in Music Education Assigned readings and reporting of materials pertaining to a particular phase of music education. Approximately three hours preparation per week per credit (adjusted for shorter sessions). Special approval needed from the instructor. Credit Hours: 1-4

MUS484 - Trends in Music Education Evolving issues important to the music educator. Credit Hours: 3

MUS498 - Recital Preparation and presentation of a full solo recital in any applied field. Recital should contain approximately 50 minutes of music. Prerequisite: prior or concurrent registration in MUS 440 and approval of applied jury. Credit Hours: 2-3

MUS499 - Independent Study Original investigation of selected problems in music and music education with faculty guidance. Project planned to occupy approximately three hours preparation per week per credit (adjusted for shorter sessions). Not more than three hours toward 36 required for graduate degree. Special approval needed from the selected instructor. Credit Hours: 1-8

MUS500 - Independent Investigation An opportunity for the graduate student to investigate at an advanced level special interests outside the scope of normal course offerings. The student will select a member of the graduate faculty to guide and evaluate the work. Not more than three hours toward 36 required for graduate degree. Special approval needed from the selected instructor and student's graduate advisor. Credit Hours: 1-6

MUS501 - Music Bibliography and Research Bibliographic materials for graduate study in music theory, history, education, and music performance. Practical experience in research techniques and scholarly writing style. Recommended to be taken during the first semester of graduate study. Required of all degree programs. Credit Hours: 3

MUS502A - Analytic Techniques A Study of the analytic techniques of Heinrich Schenker through analysis of representative works from the common practice period. Prerequisite: MUS 321 and/or consent of instructor. Restricted to graduate standing in music. Credit Hours: 2

MUS502B - Analytic Techniques B Study of post-tonal music theories-including Allen Forte's pitch-class set theory and twelve-tone theory-through analysis of representative 20th and 21st century works. Prerequisite: MUS 322 and/or consent of instructor. Restricted to graduate standing in music. Credit Hours: 2

MUS503 - Scientific Evaluation and Research in Music Quantified research concepts and vocabulary; measurement theory and techniques for evaluating and testing musical aptitude and achievement; investigation of acoustical perception; survey of current scientific research in music. A research project is required. Credit Hours: 3

MUS509 - History and Philosophy of Music Education The evolution of school music and its changing relationship to the individual, to society, and to the school curriculum. Credit Hours: 3

MUS510A - Piano Pedagogy Seminar-Piano Technique Provides an in-depth study of the three classic texts on the subject of piano technique and prepares students to deal with important aspects of piano technique in piano teaching. Credit Hours: 3

MUS510B - Piano Pedagogy Seminars-Piano Literature An extensive survey of baroque, classical, romantic and contemporary piano literature designed specifically to meet the needs of those pursuing professional careers as piano teachers. Credit Hours: 3

MUS510C - Piano Pedagogy Seminars-Piano Music Analysis Details the analytic and problem-solving techniques of piano performance study that are fundamental for teaching piano students of all ages and abilities. Credit Hours: 3

MUS535 - Contemporary Idioms An analysis of major compositional techniques since 1945. Prerequisite: MUS 502B or consent of instructor. Credit Hours: 2

MUS540A - Applied Music-Flute May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/ Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540B - Applied Music-Oboe May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/ Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540C - Applied Music-Clarinet May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/ Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540D - Applied Music-Bassoon ay be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/ Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540E - Applied Music-Saxophone May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540F - Applied Music-Horn May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/ Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540G - Applied Music-Trumpet May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio

class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/ Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540H - Applied Music-Trombone May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540I - Applied Music-Euphonium May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540J - Applied Music-Tuba May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/ Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540K - Applied Music-Percussion May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540L - Applied Music-Violin May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/ Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540M - Applied Music-Viola May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/ Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540N - Applied Music-Cello May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/ Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540O - Applied Music-Double Bass May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an

appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540P - Applied Music-Voice May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/ Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540Q - Applied Music-Piano May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/ Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540R - Applied Music-Organ May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/ Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540S - Applied Music-Harpsichord May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540T - Applied Music-Guitar May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/ Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540U - Applied Music-Recorder May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/ Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540V - Applied Music-Coaching May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the

weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540W - Applied Music-Conducting May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540X - Applied Music-Musical Theater Voice May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Not available outside Music Theater degree. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS540Y - Applied Music-Collaborative Piano May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-3

MUS545 - Pedagogy of Music Theory An orientation to the philosophy of theory with application to teaching techniques. Special approval needed from the instructor. Credit Hours: 2

MUS550 - School Music Administration and Supervision Study of the objectives and processes of music instruction. Administration roles in developing the means and ends of music instruction, and techniques employed for the improvement of instruction. Credit Hours: 2

MUS556 - Advanced Conducting Individual or group study with appropriate instructor of choral, orchestral, or band literature. Practice in score reading, baton technique and interpretation. Opportunity to rehearse and conduct ensembles when feasible. Prerequisite: completion of an undergraduate conducting course. Restricted to graduate standing in music, or consent of instructor. Credit Hours: 2

MUS565A - Chamber Music-Vocal Groups of 2 to 16 performers as organized and sponsored by individual faculty members. Includes duo-piano teams and piano in combination with other performers. Regular weekly rehearsals of appropriate music and public performance as feasible. Each subject may be repeated up to 2 hours. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-4

MUS565B - Chamber Music-String Groups of 2 to 16 performers as organized and sponsored by individual faculty members. Includes duo-piano teams and piano in combination with other performers. Regular weekly rehearsals of appropriate music and public performance as feasible. Each subject may be repeated up to 2 hours. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-4

MUS565C - Chamber Music-Woodwind Groups of 2 to 16 performers as organized and sponsored by individual faculty members. Includes duo-piano teams and piano in combination with other performers. Regular weekly rehearsals of appropriate music and public performance as feasible. Each subject may be repeated up to 2 hours. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-4

MUS565D - Chamber Music-Brass Groups of 2 to 16 performers as organized and sponsored by individual faculty members. Includes duo-piano teams and piano in combination with other performers. Regular weekly rehearsals of appropriate music and public performance as feasible. Each subject may

be repeated up to 2 hours. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-4

MUS565E - Chamber Music-Percussion Groups of 2 to 16 performers as organized and sponsored by individual faculty members. Includes duo-piano teams and piano in combination with other performers. Regular weekly rehearsals of appropriate music and public performance as feasible. Each subject may be repeated up to 2 hours. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-4

MUS565F - Chamber Music-Keyboard Groups of 2 to 16 performers as organized and sponsored by individual faculty members. Includes duo-piano teams and piano in combination with other performers. Regular weekly rehearsals of appropriate music and public performance as feasible. Each subject may be repeated up to 2 hours. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-4

MUS565G - Chamber Music-Guitar Groups of 2 to 16 performers as organized and sponsored by individual faculty members. Includes duo-piano teams and piano in combination with other performers. Regular weekly rehearsals of appropriate music and public performance as feasible. Each subject may be repeated up to 2 hours. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-4

MUS565H - Chamber Music-Contemporary Performance Strategies Groups of two to ten performers will meet weekly to collaboratively create and perform sound based works utilizing free improvisation, along with DIY/found sound sources, computer technologies, theater, movement, film, and/or other materials and modes of expression, based on participants? artistic backgrounds. The ensemble will present live performances of their collaborative projects. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-4. Credit Hours: 1-4

MUS566A - Ensemble-Marching Salukis Fall semester only. Open to all students with experience in bands. Performs at all home football games, and one or two away games. Prerequisite: Experience in bands. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1

MUS566B - Ensemble-Symphonic Band Open to all students with experience in bands. Performs standard literature. Two or three concerts per year. Prerequisites: experience in bands and audition prior to first registration. Fee: $15/credit hour. Credit Hours: 1

MUS566C - Ensemble-Concert Wind Ensemble A select group which performs advanced contemporary literature. Three concerts and tour per year. Prerequisite: audition prior to first registration. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1

MUS566D - Ensemble-Symphony Open to all experienced string, woodwind, brass, and percussion players. Plays standard and advanced orchestral literature, performs three or four concerts per year. Prerequisite: audition prior to first registration. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1

MUS566E - Ensemble-Choral Union Open to qualified students who desire to perform major choral-orchestral literature. Two concerts per year. Prerequisite: audition prior to first registration. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1

MUS566F - Ensemble-Concert Choir A select group which performs advanced choral literature of all eras. Three or four concerts per year and tours as feasible. Prerequisite: audition prior to first registration. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1

MUS566G - Ensemble-Chamber Singers Open to all experienced singers. Emphasis on contemporary literature. Three or four concerts per year and tours as feasible. Prerequisite: audition required. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1

MUS566H - Ensemble-Guitar Ensemble Emphasizes the study, rehearsal, and performance of works from the Renaissance to the present, including music composed for then classical/jazz guitar and transcriptions. Prerequisite: Audition prior to first enrollment. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1

MUS566I - Ensemble-Opera Workshop Open to all appropriately experienced singers, actors, dancers, instrumentalists and theater technicians. Study of opera/operetta repertoire and performance techniques. Special approval needed from the instructor. Technology and Repair/Replacement fee: $15/credit hour. Credit Hours: 1

MUS566J - Ensemble-Jazz Ensemble For students experienced with popular literature. Concerts and tours when feasible. Prerequisite: audition prior to first registration. Technology and Instrument Repair/ Replacement fee: $15/credit hour. Credit Hours: 1

MUS566K - Ensemble-Accompanying Lab Experience, under supervision, in accompanying soloists and groups. Prerequisite: Studying at the MUS 340 level or above or with permission of instructor. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-2

MUS566L - Ensemble-Chamber Music-Piano Groups of two to sixteen performers as organized and sponsored by individual faculty members. Includes duo-piano teams, piano in combination with other performers, and other instrumental/vocal combinations. Regular weekly rehearsals of appropriate music and public performance as feasible. Instrumentalists and singers experiment with new musical techniques and styles. Small ensembles will rehearse weekly. Special approval needed from the instructor. Technology and Instrument Repair/Replacement fee: $15/credit hour. Credit Hours: 1-2

MUS573 - Medieval Music Music of the medieval world; Gregorian chant; the Tropes; secular songs of the troubadours and trouveres; the rise of polyphony; Ars Antiqua; organum and conductus; Ars Nova; Dunstable and English descant up to about 1450; types of notation. Non-music majors: special approval needed from the instructor. Credit Hours: 3

MUS574 - Renaissance Music Burgundian and Netherlands music from 1450 and its spread; Isaac and Josquin; 16th Century polyphony in France, Germany, Spain, and England; the rise of music for instruments and for solo voices. Non-music majors: special approval needed from the instructor. Credit Hours: 3

MUS575 - Baroque Music The development of vocal and instrumental music in the period 1600-1750, from Monteverdi to Bach and Handel. Oratorio and Cantata, the influence of opera, sonata, suite, and concerto. Prerequisite: graduate standing and special approval of instructor. Credit Hours: 3

MUS576 - Classical Music Development of the sonata, symphony, concerto, and chamber music in the 18th and early 19th centuries, with emphasis on the music of Haydn, Mozart, and Beethoven. Prerequisite: graduate standing and special approval of the instructor. Credit Hours: 3

MUS577 - Romantic Music Development of the symphony and sonata forms, chamber music, and vocal music in the 19th and early 20th centuries. Rise of nationalism and impressionism. Prerequisite: graduate standing and special approval of the instructor. Credit Hours: 3

MUS578A - Modern Music I Examine important works and figures from Western Music in the first half of the 20th Century. Topics included will be Atonality, Serialism, Impressionism, Expressionism, Nationalism, Ballet and Theater Music, Neo-Classicism, Experimentalism, and Jazz. A strong emphasis will be placed on the social and political context in which the music was created. Prerequisite: graduate standing and special approval of the instructor. Credit Hours: 3

MUS578B - Modern Music II Examine important works and figures from Western Music from 1950 to the present. Included will be atonality, serialism, avant-garde, minimalism, electronic music, experimental instruments, and indeterminacy. Emphasis placed on the social, economic, and political context. Students will examine the compositional philosophies and techniques of the era. Prerequisite: graduate standing and special approval of the instructor. Credit Hours: 3

MUS580 - Graduate Composition Composition in the larger forms for solo and ensemble performance. Prerequisite: Approval of composition jury. Technology and Instrument Repair/Replacement fee: $15/ credit hour. Credit Hours: 3

MUS595 - Research Paper A written report presenting the history and style of works performed in the graduate recital, MUS 598 or 498, or other topic relating to the student's principal performing area

or independent study project. Prerequisite: MUS 501 and approval of topic by the student's Graduate Faculty Committee. Credit Hours: 1

MUS598 - Graduate Recital Preparation and presentation of a full solo recital in any applied field. The recital program should contain approximately 60 minutes of music. Prerequisite: completion of at least three credits in 540 in the appropriate field and approval of instructor. The Recital Jury certifies the acceptability of the recital program and the student's preparedness 2-3 weeks prior to the scheduled public recital. The Recital Jury submits the public recital grade to the Director of Graduate Studies. Credit Hours: 3

MUS598A - Graduate Recital, CP Vocal Preparation and presentation of a full recital with a vocalist. Restricted to Collaborative Piano majors only. Approval of performance jury. The performance jury certifies the acceptability of the completed recital and the grade to the graduate committee. Credit Hours: 1-2

MUS598B - Graduate Recital, CP Instrumental Preparation and presentation of a full recital with an instrumentalist. Restricted to Collaborative Piano majors only. Approval of performance jury. The performance jury certifies the acceptability of the completed recital and the grade to the graduate committee. Credit Hours: 1-2

MUS599 - Thesis An intensive written study in the history, theory, teaching or philosophy of music; or the manuscript and parts (with tape recording when feasible) of a substantial musical composition or series of compositions accompanied by an analytical or explanatory document. Graded S/U or DEF. Prerequisite: MUS 501 and prior approval of topic or proposal by thesis director and graduate committee in music. Credit Hours: 2-6

MUS601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Music Faculty

Barta, Michael, Professor, M.M., Liszt Academy Conservatory, 1975; 1985. Violin, chamber music, music literature.

Brookshire, Cody, Assistant Professor, D.M.A., University of Georgia, 2018; 2020. Music industry, composition.

Brozak, George, Associate Professor of Practice, Ed.D., University of Illinois, 2004; 2009. Athletic bands.

Butler, Christopher, Associate Professor of Practice, D.M.A., University of Kentucky, 2016; 2014. Percussion.

Butler, Jessica, Associate Professor of Practice, D.M.A., University of Iowa, 2013; 2014. Low brass, music history.

Davenport, Susan, Professor, D.M.A., Texas Tech University, 2001; 2005. Choral.

Dillard, David, Professor, D.M.A., University of Michigan, 2004; 2005. Voice.

Johnson, Maria, Associate Professor, Ph.D., University of California, Berkeley, 1992; 1997. Ethnomusicology.

Kato, Yuko, Associate Professor, D.M.A., Manhatten School of Music, 2007; 2008. Piano.

Kelley, Richard, Associate Professor and Director, School of Music, D.M.A., 2011; 2008. Saxophone, jazz studies.

Lausell, Isaac, Associate Professor, D.M.A., Stony Brook University, 2009; 2012. Guitar performance, jazz.

Lee, Junghwa, Professor, D.M.A., Eastman School of Music, 1999; 2005. Piano.

Mandat, Eric, Visiting Professor, D.M.A., Eastman School of Music, 1986; 1981.

Morehouse, Christopher, Professor, D.M.A., University of Cincinnati College-Conservatory of Music, 2005; 2005. Bands, conducting.

Reifinger, James L., Jr., Associate Professor, D.M.E., Indiana University, 2007; 2013. Music education.

Walczak, Christopher, Associate Professor, D.M.A., Rice University, 2013; 2015. Composition.

Emeriti Faculty

Beattie, Donald, Associate Professor, Emeritus, M.M., University of Colorado, 1977; 1979.

Benyas, Edward, Professor, Emeritus, J.D., Northwestern University, 1987; 1994. Oboe, orchestra.

Best, Richard, Professor, Emeritus, Metropolitan Opera School, 1968; 1984.

Bottje, Will Gay, Professor, Emeritus, A.Mus.D., Eastman School of Music, 1955; 1957.

Breznikar, Joseph, Professor, Emeritus, M.M., University of Akron, 1977; 1980.

Brown, Philip, Professor, Emeritus, M.M.E., University of North Texas, 1983; 1991.

Delphin, Wilfred, Professor, Emeritus, D.M.A., University of Southern Mississippi, 1978; 1988.

Fink, Timothy, Professor, Emeritus, M.F.A., Southern Illinois University Carbondale, 1993; 1994.

Fligel, Charles, Associate Professor, Emeritus, M.M., University of Kentucky, 1966; 1976.

Hanes, Michael D., Professor, Emeritus, M.M.Ed., Southern Illinois University Carbondale, 1965; 1970.

Hussey, George, Professor, Emeritus, M.A.Ed., Washington University, 1963; 1963.

Lord, Suzanne, Associate Professor, Emerita, D.M.A., Florida State University, 1998; 1997.

Mellado, Daniel, Associate Professor, Emeritus, Ph.D., Michigan State University, 1979; 1979.

Mochnick, John, Professor, Emeritus, D.M.A., University of Cincinnati, 1978, 1984.

Poulos, Helen, Associate Professor, Emerita, D.M., Indiana University, 1971; 1969.

Simmons, Margaret, Professor, Emerita, M.Mus., University of Illinois, 1976; 1977.

Stemper, Frank, Composer In Residence (Professor), Emeritus, Ph.D., University of California, Berkeley, 1981; 1983.

Underwood, Jervis, Professor, Emeritus, Ph.D., North Texas State University, 1970; 1971.

Wagner, Jeanine, Professor, Emerita, D.M.A., University of Illinois, 1987; 1984.

Weiss, Robert, Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1984; 1978.

Werner, Kent, Associate Professor, Emeritus, Ph.D., University of Iowa, 1966; 1963.

Worthen, Douglas, Associate Professor, Emeritus, D.M.A., University of Hartford, 2007; 2008.

Occupational Therapy

The entry-level Occupational Therapy Doctorate (OTD) program, offered through the School of Health Sciences within the College of Health and Human Sciences, has applied for accreditation and has been granted Candidacy Status by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at 7501 Wisconsin Avenue, Suite 510E Bethesda, MD 20814. ACOTE's telephone number c/o AOTA is (301) 652-AOTA and its web address is www.acoteonline.org.

Occupational Therapy Doctorate (OTD) in Occupational Therapy

Admission

The Occupational Therapy Doctorate (OTD) program accepts students to begin the course sequence each fall semester. Applicants admitted to the program will be granted admittance into SIUC as a graduate student. The minimum admission guidelines for the clinical Occupational Therapy Doctorate

(OTD) Degree program mirror those of the Graduate School at SIUC, with additional guidelines set specific to the OTD program, provided below:

- Applicants will possess a minimum of a baccalaureate degree, in any major, from a regionally accredited college or university
- Possess a minimum overall grade point average of 3.0 on a 4.0 scale
- Submit, along with their application, official transcripts for all attended institutions
- Provide three satisfactory professional recommendation letters from:
    - A supervisor of employment, volunteer service or observation experience
    - A professor or teacher, a healthcare provider, or an academic advisor
    - A person of your choosing who can address your potential for academic success in graduate school
- Completion and submission of an application for enrollment into the Occupational Therapy Doctorate (OTD) program
    - Demonstration of college level writing abilities (written essay) as prompted within the personal statement portion of the application
    - Professional resume included within the application
- GRE scores are not required to apply.
- Complete prerequisite courses with a grade of C or better, prior to the start of the program, to include:
    - General course in social/behavioral science. Example: General Psychology, Cultural Anthropology, Sociology, or Social Psychology
    - Abnormal Psychology or Psychopathology
    - Human Growth and Development. Example: Developmental Psychology, Child Development, Adolescent Development, Adult Development, Aging or Lifespan Development
    - Anatomy - If a two-part series, both courses must be completed to fulfill the Anatomy requirement
    - Physiology 200 Level or above
    - Social Science or Business Statistics
- Prerequisite course grades and/or an overall GPA lower than the minimum criteria will be considered; however, priority will be given to applications that meet minimum criteria.
- If your native language is not English, Test of English as a Foreign Language (TOEFL) score requirements will follow the requirements set forth by the SIUC Graduate School.

Enrollment in the Occupational Therapy Doctorate program is limited and based on a competitive process. Applicants will be evaluated on the overall submitted application package and rank order of applications that meet minimum criteria for admission.

Degree Requirements

The 3-year, full-time program requires a total of 103 credit hours to complete. Courses are presented in a hybrid format, of online and on-campus lecture, and laboratory courses, in conjunction with assigned, off-site 12-week full-time (40 hours per week) supervised clinical fieldwork placements, taking place in summer year one, and spring year two of the program; followed by a 14-week off-site (40 hours per week) doctoral capstone experience and culminating project in spring, year three of the curriculum. (Students may be required to purchase and develop an account within a clinical management system for clinical placement). Successful completion of all coursework with a grade of B or better, and minimum GPA of 3.0, is required for degree completion.

For students to be eligible to sit for the National Board for Certification in Occupational Therapy (NBCOT) Certification Examination, the program must have a pre-accreditation review, complete an on-site evaluation, and be granted accreditation. After successful completion of the exam, the individual will be an Occupational Therapist, Registered (OTR). In addition, all states require licensure in order to practice; however, state licenses are usually based on the results of the NBCOT Certification Examination.

Fall Year 1 (A)

- OTD 500: Foundations of Occupational Therapy
- OTD 501: Analyzing Occupation
- OTD 502: Art and Science of Teaching and Learning
- OTD 503: Introduction to Research and Scholarly Practice

- OTD 504: Health of Communities and Populations I

Fall Year 1 (B)

- OTD 505: Applied Neuroscience for the Occupational Therapist
- OTD 506: Human Movement and Occupational Performance
- OTD 507: Leadership Development
- OTD 508: Quantitative Research

Spring Year 1 (A)

- OTD 510: Exploring Theories and Practice Evidence I - Adult and Older Adults
- OTD 511: Evaluation and Intervention Planning I – Adult and Older Adults
- OTD 512: Intervention, Discharge Planning and Outcomes I - Adult and Older Adults
- OTD 513: Fieldwork Seminar IA – Adult and Older Adults

Spring Year 1 (B)

- OTD 514: Qualitative Research
- OTD 515: Health of Communities and Populations II
- OTD 516: Leadership and Management of Delivery Systems
- OTD 517: Advocating for the Occupational Therapy Profession

Summer Year 1

- OTD 520: Fieldwork Seminar Level IIA-Adults and Older Adults (May-August)
- OTD 521: Research Proposal Development I

Fall Year 2 (A)

- OTD 530: Exploring Theories and Evidence II-Children and Youth
- OTD 531: Evaluation and Intervention Planning II - Children and Youth
- OTD 532: Intervention, Discharge Planning and Outcomes II - Children and Youth
- OTD 533: Fieldwork Seminar IB – Children and Youth

Fall Year 2 (B)

- OTD 534: Exploring Theories and Practice Evidence III – Mental Health and Community Practice
- OTD 535: Evaluation and Intervention Planning III - Mental Health and Community Practice
- OTD 536: Intervention, Discharge Planning and Outcomes III – Mental Health and Community Practice
- OTD 537: Fieldwork Seminar IC - Mental Health and Community Practice

Spring Year 2

- OTD 540: Fieldwork Seminar Level IIB – 12 weeks
- OTD 541: Research Proposal Development II
- OTD 542: Doctoral Capstone Experience Planning I

Summer Year 2

- OTD 550: Implementing Research
- OTD 551: Doctoral Capstone Experience Planning II

Fall Year 3

- OTD 560: Program Synthesis I
- OTD 561: Advanced Studies Seminar
- OTD 562: Doctoral Capstone Experience and Project Development
- OTD 563: Doctoral Capstone Experience and Project Defense

Spring Year 3

- OTD 570: Doctoral Capstone Experience
- OTD 571: Doctoral Capstone Project
- OTD 572: Program Synthesis II

Occupational Therapy Courses

OTD500 - Foundations of Occupational Therapy In this course, students are introduced to the history and development of the profession of occupational therapy, occupational science, and the distinct nature of occupation. Students are introduced to the official documents of the profession with a detailed exploration of the American Occupational Therapy Association (AOTA) Code of Ethics, and the Occupational Therapy Practice Framework: Domain and Process (OTPF). Students explore the influence that social determinants of health, emerging health trends, culture, and society, have on the practice. Restricted to major. Credit Hours: 1

OTD501 - Analyzing Occupation In this course, students investigate the study of humans as occupational beings, the distinct nature of occupation and the evolution of occupation and activity over the course of the profession. Students analyze occupation, perform activity analysis, and utilize the teaching and learning process in educating others, about occupation. Students explore the sociocultural and socioeconomic influences, and the impact of social determinants of health, on the well-being of those served by the profession. Students apply knowledge of the structure and function of the human body, human development and behavior, across the lifespan, to understanding the meaning and dynamics of occupational engagement, factors that influence engagement and barriers to engagement in occupation. Restricted to major. Credit Hours: 2

OTD502 - Art and Science of Teaching and Learning This course provides an overview of the art and science of teaching and learning in the health professions. Students are introduced to learning principles, and instructional methods in context of the occupational therapists' role as an educator, addressing the learning needs of clients, caregivers, community, colleagues, students, the public, and other health care providers. Instructional design and teaching and learning strategies are introduced in preparation for work within a variety of contexts, educating clients and families in practice, and instructing students within academic and clinical environments. Restricted to major. Credit Hours: 1

OTD503 - Introduction to Research and Scholarly Practice In this course, students are introduced to the role of practitioner as researcher and collaborator; and provides students with an understanding of the importance of research to the practice of occupational therapy. This course provides fundamental content in integrating research principles into evidence-based professional practice, exploring the importance of evidence-based practice and the development of critical thinking and professional reasoning in the field of occupational therapy. Students will learn to critically examine research evidence, conduct a literature search, complete a literature review, and gain an understanding of basic research principles used within the profession. Restricted to major. Credit Hours: 2

OTD504 - Health of Communities and Populations I In this course, students focus on the distinct nature and value of occupation to the health of communities, and explore the role of entrepreneurship in non-traditional and emerging practice within occupational therapy. Students gain insight into evaluating the needs of communities and populations and apply knowledge of the history and philosophical base of the profession, theoretical perspectives, and sociopolitical climate to meeting current and future occupational needs in society, and identifying how these factors influence and are influenced by practice. Restricted to major. Credit Hours: 1

OTD505 - Applied Neuroscience for the Occupational Therapist In this course, students examine the fundamentals of neuroscience and cognitive neuroscience supporting occupational performance, and apply principles of neuroscience to the practice of occupational therapy. This course will provide students with a foundation in human development and explore the anatomy and physiology of the nervous system, and its relationship to human body structures and functions of the central, peripheral, and autonomic nervous systems. This course covers an introduction to both the processing of movement related functions, and behavioral phenomenon that accompany the processing of information and mediating of behavior across the lifespan. In this course, students are introduced to the etiology, symptoms, clinical

course, management, and prognosis associated with neurological conditions commonly addressed by occupational therapists. Restricted to major. Credit Hours: 2

OTD506 - Human Movement and Occupational Performance In this course, students gain an understanding of human movement. Emphasis is placed on knowledge of the structure and function of the skeletal and muscular systems including mechanics, principles of human movement, movement analysis and the application of human movement to engagement in occupation. Therapeutic handling techniques, screening, and assessment of functional mobility is explored. Students gain knowledge of the principles of orthotics, and the principles associated with therapeutic modalities used in preparing clients for engagement in occupation-centered activities; with emphasis on adhering to safety protocols appropriate to addressing the etiology, symptoms, clinical course, management, and prognosis associated with movement related conditions commonly addressed by occupational therapists. Restricted to major. Credit Hours: 3

OTD507 - Leadership Development In this course, students explore the development of personal leadership, with emphasis placed on factors that influence the development of effective personal leadership skills as an occupational therapist. In this course students gain an understanding of leadership development, in a digital culture. Students analyze leadership theories, models, and the application of these theories and models to leadership in professional, community and healthcare systems. Students explore the importance of the intra-professional (OT/OTA relationship), inter-professional collaboration, and team building in implementing a shared vision for the future, including professional involvement at the local, state, national and international levels. Restricted to major. Credit Hours: 2

OTD508 - Quantitative Research This course introduces students to an exploration of the traditions and methods of quantitative research, and the skills to analyze, critique and undertake this methodology within a research study. This course explores study designs, methods, data management, quantitative statistical analysis and interpretation of data used to answer research/clinical questions, and interpret evidence in practice. Restricted to major. Credit Hours: 2

OTD510 - Exploring Theories and Practice Evidence I - Adult and Older Adults In this course, students are introduced to theories, standards of practice and evidence as applied to occupational therapy services for adults and older adult populations. Students examine the importance of theory in practice, the process of theory development and use of evidence supporting occupational therapy services. Students explore theories, models of practice and frames of reference that address perspectives on physical, cognitive, emotional, and psychological development; and explore perspectives guiding sociocultural and socioeconomic influences affecting occupational performance. Prerequisites: OTD 500, 501, 502, 503, 504, 505, 506, 507, 508 with grades of B or better. Credit Hours: 1

OTD511 - Evaluation and Intervention Planning I-Adults and Older Adults In this course, students learn a variety of standardized and non-standardized screening and assessment tools commonly used by occupational therapists serving adult and older adult populations. Students select and administer screening and assessment tools, interpret assessment data, measure the quality of the client's performance, and identify existing support systems that reinforce outcomes of intervention; and apply theoretical constructs and evidence to evaluating occupational performance, interpreting findings and planning interventions. Students apply, analyze, and evaluate the role of sociocultural, socioeconomic, and diversity factors, as well as lifestyle choices in identifying client need, adhering to safety protocols/ regulations and exhibiting judgment appropriate to ensuring the safety of self and others throughout the evaluation process. Concurrent enrollment in OTD 512 required. Prerequisites: OTD 500, 501, 502, 503, 504, 505, 506, 507, 508 with grades of B or better. Credit Hours: 2

OTD512 - Intervention, Discharge Planning and Outcomes I-Adults and Older Adults In this course, students will apply the occupational therapy process to implementation of therapeutic intervention and discharge plans. Students design and implement individual and group intervention plans for persons, groups and populations of adults and older adults. Students apply knowledge and professional reasoning to creating objectives and measurable occupation-centered goals, applying appropriate intervention approaches and methods of service delivery to the care of clients and attainment of outcomes. Students apply knowledge of the occupational therapy process to selecting and carrying out intervention plans, monitoring of client progress, reevaluation and modification of intervention/treatment plans relative to achieving occupation-based outcomes; and documenting need for continuing or discontinuing services and/or recommending and referring of clients to other services. Concurrent enrollment in OTD 511

required. Prerequisites: OTD 500, 501, 502, 503, 504, 505, 506, 507, 508 with grades of B or better. Credit Hours: 3

OTD513 - Fieldwork Seminar 1A-Adults and Older Adults This level I fieldwork experience provides opportunities for students to integrate knowledge through participation in simulated learning experiences and/or directed observation. This level I fieldwork experience with accompanying assessment of clinical competencies, places emphasis on the occupational therapist role in serving the diverse needs of adults and older adults. Prerequisites: OTD 500, 501, 502, 503, 504, 505, 506, 507, 508 with grades of B or better. Credit Hours: 2

OTD514 - Qualitative Research This course introduces students to an exploration of the traditions and methods of qualitative research, and the skills to analyze, critique and undertake this methodology within a research study. This course explores study designs, methods, the relationship between qualitative and quantitative research, data management, and interpretation of qualitative data used to answer research/ clinical questions, and interpret evidence in practice. Prerequisites: OTD 500, 501, 502, 503, 504, 505, 506, 507, 508 with grades of B or better. Credit Hours: 2

OTD515 - Health of Communities and Populations II In this course students will explore theoretical approaches, analyze and evaluate the interaction between occupation and activity, with a focus on lifestyle choices in contemporary society. Students will explain the importance of occupation-based interventions and consultation in promoting health, balancing areas of occupation and preventing disease, illness, and dysfunction in serving communities. Students will focus on program development and gain insight into the development and evaluation of programs, services and the evaluation of need within a community or population. Prerequisites: OTD 500, 501, 502, 503, 504, 505, 506, 507, 508 with grades of B or better. Credit Hours: 2

OTD516 - Leadership and Management of Delivery Systems In this course, students will address the business aspect of practice. Students develop an awareness of financial management, staff development, quality assurance, program management and evaluation of occupational therapy service delivery. Role delineation, and professional autonomy will be discussed. In this course, students will explore service delivery models and the relationship of these models to policy, regulatory agencies, reimbursement, and compliance standards. Emphasis is placed on the development of a business plan, financial management, program evaluation models, strategic planning, and the development of strategies for effective, competency-based legal and ethical supervision of occupational therapy and non-occupational therapy personnel. Prerequisites: OTD 500, 501, 502, 503, 504, 505, 506, 507, 508 with grades of B or better. Credit Hours: 2

OTD517 - Advocating for the Occupational Therapy Profession In this course, students are introduced to advocacy and the role of leadership in addressing current policy and the social, economic, political, geographic, and demographic factors related to policy development in occupational therapy. In this course students will identify federal and state legislation and regulations impacting practice in occupational therapy; analyze leadership and advocacy in professional practice, and reflect on one's own efforts to advocate for programs, services and consumer access to occupational therapy services. Prerequisites: OTD 500, 501, 502, 503, 504, 505, 506, 507, 508 with grades of B or better. Credit Hours: 2

OTD520 - Fieldwork Seminar Level IIA-Adults and Older Adults This level II fieldwork experience is the first of two 12-week full-time (or equivalent) practicum experiences in developing entry-level competence, under the supervision of a registered occupational therapist (OTR) in a designated practice area within occupational therapy. Prerequisites: OTD 510, 511, 512, 513, 514, 515, 516, 517 with grades of B or better. Credit Hours: 9

OTD521 - Research Proposal Development 1 In this course students will apply knowledge of basic research principles used within the profession to the development of a collaborative research study and preparation of a preliminary research proposal, under the supervision of a faculty advisor. Prerequisites: OTD 510, 511, 512, 513, 514, 515, 516, 517 with grades of B or better. Credit Hours: 2

OTD530 - Exploring Theories and Evidence II-Children and Youth In this course, students are introduced to theories, standards of practice and evidence as applied to occupational therapy services for children and youth. Students examine the importance of theory in practice, the process of theory development and use of evidence supporting occupational therapy services. Students explore theories,

models of practice and frames of reference that address perspectives on physical, cognitive, emotional, and psychological development; and explore perspectives guiding sociocultural and socioeconomic influences affecting occupational performance. Prerequisites: OTD 520 and 521 with grades of B or better. Credit Hours: 1

OTD531 - Evaluation and Intervention Planning II-Children and Youth In this course, students will learn a variety of standardized and non-standardized screening and assessment tools commonly used by occupational therapists serving children and youth. Students will select and administer screening and assessment tools, interpret assessment data, measure the quality of the client's performance, and identify existing support systems that reinforce outcomes of intervention; and apply theoretical constructs and evidence to evaluating occupational performance, interpreting findings and planning interventions. Students will apply, analyze, and evaluate the role of sociocultural, socioeconomic, and diversity factors, as well as lifestyle choices in identifying client need, adhering to safety protocols/regulations and exhibiting judgment appropriate to ensuring the safety of self and others throughout the evaluation and intervention planning process. Concurrent enrollment in OTD 532 required. Prerequisites: OTD 520 and 521 with grades of B or better. Credit Hours: 2

OTD532 - Intervention, Discharge Planning and Outcomes II-Children and Youth In this course, students will apply the occupational therapy process to implementation of therapeutic intervention and discharge plans. Students design and implement individual and group intervention plans for persons, groups and populations of children and youth. Students apply knowledge and professional reasoning to creating objectives and measurable occupation-centered goals, applying appropriate intervention approaches and methods of service delivery to the care of clients and attainment of outcomes. Students apply knowledge of the occupational therapy process to selecting and carrying out intervention plans, monitoring of client progress, reevaluation and modification of intervention/treatment plans relative to achieving occupation-based outcomes; and documenting need for continuing or discontinuing services and/or recommending and referring of clients to other services. Prerequisites: OTD 520 and 521 with grades of B or better; concurrent enrollment in OTD 531 required. Credit Hours: 3

OTD533 - Fieldwork Seminar 1B-Children and Youth This level I fieldwork experience provides opportunities for students to integrate knowledge through participation in simulated learning experiences and/or directed observation. This level I fieldwork experience with accompanying assessment of clinical competencies, places emphasis on the occupational therapist role in serving the diverse needs of children and youth. Prerequisites: OTD 520 and 521 with grades of B or better. Credit Hours: 2

OTD534 - Exploring Theories and Evidence III-Mental Health and Community Practice In this course, students are introduced to theories, standards of practice and evidence as applied to occupational therapy services in mental health and community practice. Students examine the importance of theory in practice, the process of theory development and use of evidence supporting occupational therapy services. Students explore theories, models of practice and frames of reference that address perspectives on physical, cognitive, emotional, and psychological development; and explore perspectives guiding sociocultural and socioeconomic influences affecting occupational performance. Prerequisites: OTD 520 and 521 with grades of B or better. Credit Hours: 1

OTD535 - Evaluation and Intervention Planning III-Mental Health and Community Practice In this course, students will learn a variety of standardized and non-standardized screening and assessment tools commonly used by occupational therapists in mental health and community practice. Students will select and administer screening and assessment tools, interpret assessment data, measure the quality of the client's performance, and identify existing support systems that reinforce outcomes of intervention; and apply theoretical constructs and evidence to evaluating occupational performance, interpreting findings and planning interventions. Students will apply, analyze, and evaluate the role of sociocultural, socioeconomic, and diversity factors, as well as lifestyle choices in identifying client need, adhering to safety protocols/regulations and exhibiting judgment appropriate to ensuring the safety of self and others throughout the evaluation and intervention planning process. Prerequisites: OTD 520 and 521 with grades of B or better. Concurrent enrollment in OTD 536 required. Credit Hours: 2

OTD536 - Intervention, Discharge Planning, and Outcomes III-Mental Health and Community Practice In this course, students apply the occupational therapy process to implementation of therapeutic intervention and discharge plans. Students design and implement individual and group intervention plans with emphasis on group processes, intervention protocols, and strategies to develop group dynamics in mental health and community practice. Students apply knowledge and professional reasoning to creating

objectives and measurable occupation-centered goals, applying appropriate intervention approaches and methods of service delivery to care of clients and attainment of outcomes. Students apply knowledge of the occupational therapy process to selecting and carrying out intervention plans, monitoring progress, reevaluation and modification of intervention/treatment plans relative to achieving occupation-based outcomes; documenting need for continuing or discontinuing services and/or recommending and referring of clients to other services. Prerequisites: OTD 520 and 521 with grades of B or better. Concurrent enrollment in OTD 535 required. Credit Hours: 3

OTD537 - Fieldwork Seminar 1C-Mental Health and Community Practice This level I fieldwork experience provides opportunities for students to integrate knowledge through participation in simulated learning experiences and/or directed observation. This level I fieldwork experience with accompanying assessment of clinical competencies, places emphasis on the occupational therapist role in mental health and community practice. Prerequisites: OTD 520 and 521 with grades of B or better. Credit Hours: 2

OTD540 - Fieldwork Seminar Level IIB This level II fieldwork experience is the second of two 12-week full-time (or equivalent) practicum experiences in developing entry-level competence, under the supervision of a registered occupational therapist (OTR) in a designated practice area within occupational therapy. Prerequisites: OTD 530, 531, 532, 533, 534, 535, 536, 537 with grades of B or better. Credit Hours: 9

OTD541 - Research Proposal Development II In this course, students will finalize a group research proposal, under the supervision of a faculty advisor for submission to the University Institutional Review Board. Prerequisites: OTD 530, 531, 532, 533, 534, 535, 536, 537 with grades of B or better. Credit Hours: 1

OTD542 - Doctoral Capstone Experience Planning I In this course, under the supervision of the doctoral capstone coordinator, students will identify an area of interest to be pursued within the doctoral capstone experience. Capstone experiences will be in one of the following areas: clinical practice skills, research skills, administration, leadership, program and policy development, advocacy, education or theory development. Students will work with the Capstone Coordinator in identifying a mentorship partner, site location, and capstone committee. Prerequisites: OTD 530, 531, 532, 533, 534, 535, 536, 537 with grades of B or better. Credit Hours: 2

OTD550 - Implementing Research In this course students will complete the data collection, analysis and reporting of findings as part of a group collaborative research study outlined within the students' Institutional Review Board approved proposal. The research group will present findings and implications for occupational therapy practice to an audience of peers. Prerequisites: OTD 540, 541, 542 with grades of B or better. Credit Hours: 3

OTD551 - Doctoral Capstone Experience Planning II This course occurs in preparation of the Doctoral Capstone Experience. Students work with the doctoral capstone project committee in developing an individual doctoral capstone experience. Prerequisites: OTD 540, 541, 542 with grades of B or better. Credit Hours: 3

OTD560 - Program Synthesis I In this course, students' synthesis knowledge gained through completion of all academic coursework and level II fieldwork experiences occurring prior to the start of the doctoral capstone experience and culminating project; and explore next steps in preparation for graduation and employment as an occupational therapist. Prerequisites: OTD 550, 551 with grades of B or better. Credit Hours: 3

OTD561 - Advanced Studies Seminar In this course, students engage in learning with faculty and/or selected mentor(s) from a chosen specialized area that supports students' preparation for the doctoral capstone experience and culminating capstone project. Prerequisites: OTD 550, 551 with grades of B or better. Credit Hours: 3

OTD562 - Doctoral Capstone Experience and Project Development In this course students formalize an identified area of interest derived from experience and knowledge acquired throughout the program into a defined proposal for the student's doctoral capstone experience and project, under the guidance of the capstone coordinator, faculty advisor and site mentor. The proposal will include a literature review,

needs assessment, goals/objectives, and an evaluation plan. Prerequisites: OTD 550, 551 with grades of B or better. Credit Hours: 3

OTD563 - Doctoral Capstone Experience and Project Defense In this course, students prepare and defend their doctoral capstone experience proposal to their site mentor and doctoral capstone faculty committee for approval prior to proceeding to the doctoral capstone experience and culminating project. Prerequisites: OTD 550, 551 with grades of B or better. Credit Hours: 2

OTD570 - Doctoral Capstone Experience Students complete an approved 14-week (560 hour) doctoral capstone experience in one of the following areas: clinical practice skills, research skills, administration, leadership, program and policy development; advocacy, education or theory development. The doctoral capstone experience serves as the context for applying advanced skills beyond the generalist level, through implementation of a doctoral capstone project. Prerequisites: OTD 560, 561, 562, 563 with grades of B or better. Concurrent enrollment in OTD 571 required. Credit Hours: 10

OTD571 - Doctoral Capstone Project In this course, students apply in-depth knowledge of a focused area of study, to the completion of a culminating doctoral capstone project. Students integrate learning addressed within the capstone project through the framework of Boyer's Model of Scholarship of Discovery; Scholarship of Integration; Scholarship of Application, Practice or Engagement; or the Scholarship of Teaching and Learning. The capstone project represents students' synthesis of new, focused and concentrated knowledge learned in developing advanced skills beyond the generalist level. Students participate in the defense of their final capstone project and at minimum, present their doctoral capstone project at an occupational therapy program-level scholarship/educational event. Prerequisites: OTD 560, 561, 562, 563 with grades of B or better. Concurrent enrollment in OTD 570 required. Credit Hours: 3

OTD572 - Program Synthesis II In this course students apply advanced reasoning and reflective practice skills to examining the development and transformation of the students' personal and professional perspectives as future occupational therapy practitioners; identifying a plan for continued personal and professional development and engagement in the profession, contributing to the advancement of the occupational therapy in the region. Prerequisites: OTD 560, 561, 562, 563 with grades of B or better. Credit Hours: 2

Occupational Therapy Faculty

Cepa, Danila, J., Assistant Professor, Occupational Therapy, DHS, University of Indianapolis, 2008; 2021. Non-traditional practice, curriculum, teaching and learning.

Parr, Kimberly, D., Assistant Professor of Practice, Occupational Therapy, OTD, University of Saint Augustine, 2020; 2021. Telehealth in occupational therapy and animal assisted therapy.

Organizational Learning, Innovation, and Development

The School of Education offers a Master of Science in Education (M.S.Ed.) in Organizational Learning, Innovation, and Development (OLID). Those pursuing the M.S.Ed. must select one concentration among the following options: (1) Human Resource Development (HRD), (2) Learning and Performance Technology (LPT), and (3) Workforce Training and Development (WTD).

Admission

Applicants for graduate programs must submit admission forms for both the Graduate School and the Organizational Learning, Innovation, and Development (OLID) program at the School of Education.

General requirements for admission to graduate programs are within the Admission Policies, Requirements, and Procedures tab. In all cases, applicants are screened by a selection and review committee comprised of the faculty of OLID on the basis of prior undergraduate and graduate work, grade point average, standardized test scores, work/professional experience, and letters of recommendation as

needed. The committee may recommend admission for candidates with specific academic deficiencies if, in its opinion, a candidate's application materials demonstrate unusual professional promise.

Application materials may be obtained by addressing a request to the: Coordinator of Graduate Studies, School of Education, Southern Illinois University, Carbondale, IL 62901, or from the program website at siu.edu. All programs require a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in Organizational Learning, Innovation, and Development. Applicants may pay this fee by credit card. More information about the program may be obtained on the program website, or by contacting the School of Education at 618-453-2415.

Master of Science in Education (M.S.Ed.) in Organizational Learning, Innovation, and Development

The Master of Science in Education degree in Organizational Learning, Innovation, and Development requires the completion of a minimum of 30 credit hours of course work. At least 15 of the required credit hours must be at the 500 level and taken at SIU Carbondale. The student must also meet OLID course requirements and research requirements. No more than six credit hours earned at another nationally accredited institution may be accepted toward this degree. All transfer credits must be approved by the Coordinator of Graduate Studies.

Admission and Retention

Admission to the master's program requires:

- A 2.7 GPA or better (A=4.00) on the entire last undergraduate GPA earned at the time of application.
- A career goal consistent with the mission of the program.
- A TOEFL score of at least 550 (220 computerized score) that is no more than 2 years old for international students.
- Relevant professional or technical experience (at least two years is recommended), OR
- Recommendation of the faculty in the concentration.

Students must maintain an overall 3.0 graduate GPA to be retained in the master's program. The progress of each student is reviewed periodically. Students who do not make satisfactory progress, or who violate the regulations of the program, school, or University, may be dropped from the program.

Program Requirement

The Master of Science in Education degree majoring in Organizational Learning, Innovation & Development (OLID) offers three concentrations: (1) Human Resource Development (HRD), (2) Learning and Performance Technology (LPT), and (3) Workforce Training and Development (WTD).

The degree prepares professionals who use research-based and industry best practices to create effective learning/training to improve performance in military, business corporations, healthcare, industry, government and educational institutions at all levels, as well as training development and administrative roles. Competencies developed include those employed in online learning, learning within emerging technologies (e.g., artificial intelligence, virtual reality, games and simulations), as well as content/learning management systems for corporate and military training.

Focus is on the principles and techniques of human resource, career planning, organizational development, training development, problem-solving, human performance improvement, creation of online learning artifacts and media resources through the analysis, design, development, implementation, evaluation, and management of training and learning system resources, as well as emerging technologies. Opportunities for internship, workshop, practicum, as well as independent research or readings are available. All three OLID concentrations (HRD, LPT, and WTD) can be completed online. Also, the concentration in Learning and Performance Technology (LPT) can be completed by taking in-person classes.

A minimum total of 30 credit hours (ten courses) is required to complete the Master's degree without thesis. A minimum grade point average of 3.0 is required for graduation with M.S.Ed. in the OLID program.

Two post-baccalaureate certificates in: (1) Learning and Performance and Technology (LPT) and (2) Online Learning (OL) are also available.

Human Resource Development Concentration (30 credit hours)

- OLID 500: Foundations: Instructional Design, Training and Performance
- OLID 501: Design and Delivery of Online Learning
- OLID 520: Adult Education, Learning & Development
- ERES 531: Implementation & Assessment of Program Evaluation
- OLID 522: Career Planning and Development
- OLID 523: Theory and Practice of Human Resource Development
- OLID 524: Organizational Development
- OLID 525: Strategic Human Resource Development
- OLID 526: Emerging Trends in Human Resource Development
- OLID 527: Workforce Diversity and Inclusion

Learning and Performance Technology Concentration (30 credit hours)

CORE (9 credit hours)
• OLID 500: Foundations: Instructional Design, Training and Performance
• OLID 501: Design and Delivery of Online Learning
• OLID 520: Adult Education Learning & Development
or OLID 512: Instructional Design Methods (*)

CAPSTONE (3 credit hours)
• OLID 506: Learning Performance & Project Management

ELECTIVES (18 credit hours)
• OLID 502: Interactive Media for Learning
• OLID 503: Universal Design & Accessibility
• OLID 504: App Design & Task Analysis
• OLID 505: Usability & Problem Solving with AI
• OLID 507: Online Content Management
• OLID 508: Content Development with AI
• OLID 509: Emerging Technologies Research Studio
• OLID 510: AI-Accelerated Expertise Development
• OLID 511: Story-Based Learning & Gamification
• OLID 512: Instructional Design Methods

Students who take OLID 512 as part of the LPT core cannot count OLID 512 as an LPT elective.

Workforce Training and Development Concentration (30 credit hours)

- OLID 500: Foundations: Instructional Design, Training and Performance
- OLID 501: Design and Delivery of Online Learning
- OLID 520: Adult Education, Learning & Development
- ERES 531: Implementation & Assessment of Program Evaluation
- OLID 528: Occupational Analysis and Performance Development
- OLID 529: Needs Assessment for Workforce Development Professionals
- OLID 530: Digital Instructional and Training Materials
- ERES 532: Evaluating Learner Performance
- OLID 532: Training Systems Development
- OLID 533: Administration and Supervision

Certificates

Two post-baccalaureate certificates in: (1) Learning and Performance and Technology (LPT) and (2) Online Learning (OL) are also available. The certificates require 15 credit hours (5 courses) to complete and serve as partial completion towards the master’s degree (additional 15 credit hours).

Certificate in Learning and Performance Technology (15 credit hours)

OLID 500: Foundations: Instructional Design, Training and Performance
ELECTIVES (Any 4 courses):
OLID 502: Interactive Media for Learning
OLID 503: Universal Design & Accessibility
OLID 505: Usability and Problem Solving with AI
OLID 507: Online Content Management
OLID 512: Instructional Design Methods

Certificate in Online Learning (15 credit hours)

OLID 500: Foundations: Instructional Design, Training and Performance
ELECTIVES (Any 4 courses):
OLID 501: Design and Delivery of Online Learning
OLID 502: Interactive Media for Learning
OLID 503: Universal Design & Accessibility
OLID 505: Usability and Problem Solving with AI
OLID 511: Story-Based Learning & Gamification

Organizational Learning, Innovation, and Development Courses

OLID472 - Organizing Cooperative Education Introduction to cooperative education including history, rational, legislation, goals and objectives. Programming, public relations and evaluation of cooperative education. Introduction of student selection and management of cooperative education programs. Fulfills three semester hours of six required for State of Illinois certification. Restricted to OLID majors or consent of program. Credit Hours: 3

OLID473 - Coordinating Cooperative Education Competencies required for coordination of cooperative education programs. Selection and maintenance of training stations, student placement, related instruction and program management. Fulfills the remaining three semester hours required for State of Illinois Certification. Restricted to OLID majors or consent of program. Credit Hours: 3

OLID500 - Foundations: Instructional Design, Training and Performance Inducts students into the profession and community of practice by providing an overview, historical development, and professional organizations of the fields of Instructional Design & Technology, Human Performance Technology, and Learning Engineering. Includes performance problem identification, distinction between skill/knowledge deficits and other performance problems, model of expertise, rationale for instructional solutions, trends and issues, and research directions in the fields. Students will be introduced to the impact of disruptive AI technologies and its effects on instructional design processes, technology-enhanced learning, and ethics in the workplace. Credit Hours: 3

OLID501 - Design and Delivery of Online Learning Investigates online learning in both higher education and corporate training contexts. The course draws upon the tradition of distance education in covering the design, delivery, and evaluation of online and blended learning in higher education, corporations and organizations. Students will be introduced to the use of disruptive AI technologies in design and analysis. Credit Hours: 3

OLID502 - Interactive Media for Learning An introduction to the evaluation, design, and development of interactive instructional media. The instructional methods of Tutorial, Drill and Practice, Simulation and Educational Games are covered. Learning theories and design aesthetics are included. Projects include designing, developing, and use-testing interactive media for learning projects. Students will be introduced to the use of disruptive AI technologies in design and analysis. Credit Hours: 3

OLID503 - Universal Design & Accessibility This course surveys the foundation and principles of Universal Design. It further explores the use of learning and performance technologies to create

accessible learning environments in diverse contexts, including disruptive AI technologies and their implications. Credit Hours: 3

OLID504 - App Design & Task Analysis This is an integrated course on the principles and processes of task analysis and app design and development. It covers the fundamentals of task analysis in learning and instruction in diverse contexts and sets up the stage for participants to develop app-based solutions for field experiments and assessments. Students will be introduced to the use of disruptive AI technologies in design and analysis. Credit Hours: 3

OLID505 - Usability and Problem Solving with AI This course focuses on understanding the importance of usability and user experience (UX) in meeting the needs of users when designing for diverse learning/training environments. Thinking like a designer (i.e., design thinking) is an important mindset to problem solve and design new learning/training approaches; especially when disruptive technologies (such as AI, ChatGPT) challenge the processes of learning, training, and performance evaluation. Students will use AI tools in designing curriculum for learning/training, usability testing, and problem solving in the workplace. Credit Hours: 3

OLID506 - Learning Performance & Project Management This Capstone course applies theories and methods of instructional design, adult learning, and human performance to solve organizational learning problems. Students will learn to communicate effectively with clients and subject matter experts, to manage projects, and to collaborate with team members in designing and evaluating training initiatives. Students will be introduced to the use of disruptive AI technologies in design and analysis. Restricted to consent of instructor. Credit Hours: 3

OLID507 - Online Content Management Course covers both Content Management Systems (CMS) and Learning Management Systems (LMS) for the remote management and delivery of online media and resources for military, higher education, business and industrial training and e-learning purposes. Students will setup and manage client-based CMS and LMS services for online delivery of learning media resources. Credit Hours: 3

OLID508 - Content Development with AI Disruptive technologies (such as AI, ChatGPT) have challenged the processes of instructional design and learning/training development in the workplace and learning organizations. Students will explore the use of AI tools as design assistants to design instructional contents, and media development for the workplace and education. The ?Design Studio? approach affords students the opportunity to critique one another?s creative thinking process in the design and development of media/video-based learning resources. Credit Hours: 3-6

OLID509 - Emerging Technologies Research Studio Instructional designers are often required to evaluate emerging technologies. The "Research Studio" allows students to explore/research the effects of appropriate emerging technologies to enhance learning. Students conduct experiments, collect user data, reflect on the learning experience and report on the effects of the technology. Prerequisite: OLID 508 with a grade of B- or better or consent of instructor. Credit Hours: 3

OLID510 - AI-Accelerated Expertise Development This course explores the foundations of human expertise development with instructional technology. Disruptive technologies (such as AI, ChatGPT) have challenged the processes of human expertise development in the traditional sense. Such technologies can improve human performance and accelerate expertise development for the workplace, ranging from military, healthcare, industries, and business learning organizations. Students will use AI tools to design and refine learning programs and curriculum to accelerate human expertise development. Credit Hours: 3

OLID511 - Story-Based Learning & Gamification This course covers the foundations and trends about games, game mechanics, and gamification in online learning. Students design scripts and create interactive narratives to engage learners in an immersive online story-based learning environment. Credit Hours: 3

OLID512 - Instructional Design Methods Course focus is on adult learning principles, as well as instructional design and development models in the field. The relationship of learning, training and motivation are discussed in the context of designing effective instructional strategies appropriate in workplaces and education, including the military, business industry and higher education. Students will

explore the impacts of disruptive technology (e.g., AI tools, ChatGPT) on ID methods and the ethics for learning and training. Credit Hours: 3

OLID520 - Adult Education, Learning & Development This course serves as a foundation to the field of adult education and provides an overview of adult education theory and practice. Students will learn the importance of adult learning and development considering theories, models of adult cognitive and psychological development. Upon completion of this course, students will be able to facilitate learning in an adult learning environment. Credit Hours: 3

OLID521 - Program Assessment & Evaluation Evaluation systems and activities for evaluating training programs. Application of research methods and data analysis in the human resource, performance, and learning/training development process, with concentration on assessing trainee reaction and planned action, learning, skill, business impact and return on training investment. Credit Hours: 3

OLID522 - Career Planning and Development This course provides an overview of the major theories related to career choice and development. Theories, models, techniques, and resources relevant to decision making and assessment will be discussed. Students will learn how to utilize these theories as a platform for meaningful career planning and development within the workforce. Credit Hours: 3

OLID523 - Theories and Practice of Human Resource Development Overview of the theoretical frameworks and practices related to human resource development in organization. Students will develop a training program from the initial stage to completion. Topics include how various bodies of knowledge contribute to HRD theory and practice, the application of human resource development within the workplace with regards to: employee socialization and orientation, coaching and performance management, employee wellness and counseling, career management and development, organization development and change, HRD and Diversity. Restricted to OLID graduate students or consent of program. Credit Hours: 3

OLID524 - Organizational Development This course discusses organizational development principles from theoretical and practical perspectives. Strategic implications of organizational change, processes, tools, and techniques used for organizational performance and change management are covered. Cost and value implications of change interventions and leading practices in learning organizations and continuous improvement are also included. Students will explore topics such as leadership, governance, communication, and human resource systems that influence change. Students will also be introduced to the use of disruptive technologies (such as AI, ChatGPT) in planning the organizational change for the organizations of students? interests. Credit Hours: 3

OLID525 - Strategic Human Resource Development This course provides students with the knowledge needed to develop as organizational leaders. It prepares students with essential skills required to strategically develop and execute efficient human resource. Students will gain insights into various concepts, including human resource decision- making, training and development, workforce planning, and human resource development strategies. Students will develop the capability to effectively lead and manage human resources in a dynamic organizational environment. Credit Hours: 3

OLID526 - Emerging Trends in Human Resource Development Examination of current topics and research issues in the field of Human Resource Development not covered in other regularly scheduled courses. Emphasis will be on recent and present issues in the field, with topics and discussions focused on links between research and practice. Restricted to OLID graduate students or consent of program. Credit Hours: 3

OLID527 - Workforce Diversity and Inclusion This course provides an overview of issues pertaining to diversity and inclusion within the workplace. Students will learn the concept of diversity as well as issues and challenges of diversity in the workplace. Students will learn to create an environment that capitalizes on creativity and develop effective leadership skills to oversee a diverse workforce. Upon completion of this course, students will be able to apply the concepts, theories, and practices learned with the goal of promoting diversity and inclusion within the workplace. Credit Hours: 3

OLID528 - Occupational Analysis and Performance Development System approach to training development. Includes analyzing occupations, specifying objectives, and developing curriculum. Restricted to OLID graduate students or consent of program. Credit Hours: 3

OLID529 - Needs Assessment for Workforce Development Professionals This course offers comprehensive coverage of the knowledge and skills needed to develop and conduct needs assessments and to analyze, interpret, and communicate results to clients and organizations. This course uses a variety of real-world examples to connect major theories and models to effective principles for practice. Students will be introduced to the use of disruptive technologies (such as AI, ChatGPT) in conducting needs assessment for the organizations of students? interests. Credit Hours: 3

OLID530 - Digital Instructional and Training Materials This course introduces students the evidence-based principles of e-learning to the design, development, and selection of digital instructional and training materials. This course goes beyond instructional design advice, providing actionable ideas and multimedia examples based on recent research findings. Students will learn how to put evidence into practice, with proven e-learning design and development guidelines. Students will also be introduced to the use of disruptive technologies (such as AI, ChatGPT) in applying evidence regarding how best to leverage collaborative workplace learning. Credit Hours: 3

OLID531 - Program Evaluation and Performance Measurement It offers a conceptual and practical introduction to program evaluation and performance measurement for public and non-profit organizations. The content covers the performance measurement cycle in organizations, which includes: strategic planning and resource allocation; program and policy design; implementation and management; and the assessment and reporting of results. Credit Hours: 3

OLID532 - Training Systems Development Knowledge and application of administration principles and management techniques for developing and evaluating organizational training programs. Restricted to OLID graduate students or consent of program. Credit Hours: 3

OLID533 - Administration and Supervision Nature, function, and techniques of administration and supervision of education for work programs at all levels. Restricted to OLID graduate students or consent of program. Credit Hours: 3

OLID550 - Topical Seminar: Instructional Technology Graduate level seminar that involves the study of special problems and related research associated with practical learning situations. Problems available for critiquing and analyzing are the following: Instructional Technology and Human Performance Technology. Maximum six hours towards a Master's degree. Permission: Special Approval by Instructor. Credit Hours: 3-6

OLID552 - Independent Research: Instructional Technology Selection, investigation and writing of a research topic under the personal supervision of the instructor. Maximum three hours toward a Master's degree. Permission: Special approval by instructor. Credit Hours: 3

OLID553 - Practicum: Instructional Technology Practical application of advanced theory, professional consultation or attachment, program development implementation and evaluation in federal or learning organizations, centers of learning and research, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. Maximum nine hours toward a Master's degree. Permission: Special approval by instructor. Credit Hours: 3-9

OLID554 - Internship: Instructional Technology Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating learning organization or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. Maximum eight hours toward a Ph.D. or specialist degree. Permission: Special approval by instructor. Credit Hours: 3-8

OLID555 - Workshop: Instructional Technology Critical evaluation of innovative programs and practices. Students will be acquainted with the theories, practice, and methods of implementing new instructional technologies into practices. Maximum of six hours toward a master's degree. Permission: Special approval by instructor. Credit Hours: 3-6

OLID590N - Independent Readings: Instructional Technology Directed readings in literature and research. Maximum three hours toward a Master's degree. Permission: Special approval by instructor. Credit Hours: 3

OLID593N - Independent Research: Instructional Technology Selection, investigation and writing of a research topic under the personal supervision of the instructor. Maximum three hours toward a Master's degree. Permission: Special approval by instructor. Credit Hours: 3

OLID597A - Doctoral Seminar in Organizational Learning, Innovation, and Development Designed to provide doctoral students the opportunity to discuss trends, issues, and requirement of job application, teaching, research, publication, and professional practice in the field. Restricted to doctoral students in OLID or consent of program. Credit Hours: 1-3

OLID599 - Thesis Restricted to OLID majors or consent of program. Credit Hours: 3-6

OLID600 - Dissertation Restricted to OLID majors or consent of program. Credit Hours: 1-12

OLID601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Restricted to OLID majors or consent of program. Credit Hours: 1

OLID699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Restricted to OLID majors or consent of program. Credit Hours: 1

Organizational Learning, Innovation, and Development Faculty

Al-Asfour, Ahmed, Associate Professor, Educational Leadership, Ed.D., University of Wyoming, 2014, 2020. Qualitative research methods, developmental & organizational leadership, human resource development & management, and higher education student affairs & administration.
Bu, Lingguo, Professor, Mathematics Education, Ph.D., Florida State University, 2008; 2008. Modeling, instructional design, and curricular development in STEM education.
Fadde, Peter J., Professor, Instructional Research and Design, Ph.D., Purdue University, 2002; 2003. Online and blended learning, interactive multimedia, expert performance.
Hunter, Yvonne, Associate Professor, Ph.D., University of South Florida, 2012; 2015. Adult education emphasis in human resource development.
Loh, Christian Sebastian, Professor, Instructional Technology, Ph.D., University of Georgia, 2004; 2004, Serious games analytics (SGA) and Artificial Intellilgence (AI) for expertise development, performance improvement & assessment.
Zhong, Lin, Associate Professor, Ph.D., University of Southern Mississippi, 2015; 2016. Instructional technology; instructional design; multimedia platforms; digital leadership; digital technology.

Emeriti Faculty

Anderson, Marcia, Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1975; 1970.

Bailey, Larry J., Professor, Emeritus, Ed.D., University of Illinois, 1968; 1969.

Bortz, Richard F., Professor, Emeritus, Ph.D., University of Minnesota, 1967; 1977.

Buila, Theodore, Associate Professor, Emeritus, Ph.D., Cornell University, Ithaca, NY, 1968; 1968.

Gooch, Bill G., Professor, Emeritus, Ed.D., University of Tennessee, 1973; 1973.

Hagler, Barbara, Professor, Emerita, Ph.D., Arizona State University, 1991; 1987.

Putnam, Alvin R., Associate Professor, Emeritus, Ed.D., Oklahoma State University, 1978; 1997.

Reneau, Fred W., Professor, Emeritus, Ed.D., Virginia Polytechnic Institute and State University, 1979; 1979.

Ridley, Samantha Sue, Assistant Professor, Emerita, M.S., Southern Illinois University Carbondale, 1959; 1964.

Rosenbarger, Maxine, Associate Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1970; 1973.

Shields, Bill, Assistant Professor, Emeritus, M.S., Southern Illinois University, 1962. 1962.

Stadt, Ronald W., Professor, Emeritus, Ed.D., University of Illinois, 1962; 1967.

Stitt, Thomas R., Professor, Emeritus, Ph.D., Ohio State University, 1967; 1967.

Sullivan, James A., Professor, Emeritus, Ed.D., West Virginia University, 1967; 1968.

Washburn, John S., Professor, Emeritus, Ed.D., University of Illinois, 1977; 1986.

Philosophy

The School of History and Philosophy offers a wide range of advanced courses in the major areas within the field leading to the M.A. and Ph.D. in Philosophy degrees. Students are offered a curriculum that is not dominated by one school of thought or method. The range of specializations represented by the faculty exposes students to a variety of aspects of philosophy and, at the same time, permits them to concentrate on their own particular area of interest. Graduate-level courses in such allied fields as the natural and social sciences, the arts, linguistics, and law offer supplements to the philosophy curriculum.

Graduate courses in philosophy may be used as a minor in programs leading to the Master of Arts or Master of Science in Education degrees. Students who do not plan to continue work in philosophy beyond the master's degree level are encouraged to elect a graduate minor or to combine philosophy with another subject in a 40-credit hour double major.

All graduate students in philosophy are expected to have some supervised experience in teaching, either through regular teaching assistantships or through special assignments.

Admission

Admission to the philosophy graduate program requires the following:

1. An online application form needs to be completed.
2. Official transcripts of each school attended to be sent to the School of History and Philosophy.
3. A sample of written work, e.g., a term paper written for an undergraduate or graduate class.
4. Three letters of recommendation from individuals familiar with the student's work should be requested by the applicant to be sent to the program's director of graduate studies.
5. Graduate Record Examination verbal and quantitative scores are not required to be submitted to the program. TOEFL scores of at least 550 (paper score) or 220 (computer score) are required for all foreign students. These scores should be sent directly to the School of History and Philosophy. Scores for the Test of Spoken English are strongly recommended for foreign students applying for teaching assistantships.

Applicants for Graduate School and Morris Fellowships should send these applications to the School of History and Philosophy by February 1 of the academic year preceding that for which application is made. While there is no guarantee that admission to the M.A. or the Ph.D. program will come with a program graduate assistantship, graduate assistantships are offered to as many M.A. and Ph.D. students as are available.

Entry into the Ph.D. in Philosophy Program

There are multiple pathways by which a student may enter the Philosophy Ph.D. program. A common one is by completion of a M.A. degree in Philosophy at an accredited institution, but a M.A. in Philosophy is not required for entry into the Ph.D. program. It is possible to be admitted into the Philosophy Ph.D. program with a B.A. in Philosophy or with a B.A. or B.S. in another field. Regardless of pathway, each applicant's materials are carefully and holistically reviewed by the Graduate Committee.

Accelerated Entry

A student enrolled in the M.A. in Philosophy program may, after one semester in residence, petition the program's faculty for accelerated entry into the Ph.D. in Philosophy program. Petitions are reviewed by the Graduate Committee.

Master of Arts (M.A.) in Philosophy

The M.A. in Philosophy is for students who wish to pursue advanced study in Philosophy, but who are not yet prepared to pursue the Ph.D. Valuable for its own sake, the M.A. is also good preparation for students who wish to continue on to a Ph.D. in Philosophy. In order to earn the M.A. in Philosophy, the student must fulfill the following requirements:

1. Complete 30 credit hours of course work in philosophy or allied fields, six of which may be credited toward preparation of a thesis. Fifty percent of the course work must be at the 500 level or above. An overall grade point average of 3.0 or above (A=4.00) on the entire last undergraduate GPA earned at the time of application is required for the M.A. degree.
2. Fulfillment of a research writing requirement:
    a. Presentation of an acceptable thesis, 40-60 pages in length (approximately), to be written under the direction of a faculty member of the program, in addition to consultation with the thesis committee during the writing process. Six thesis credit hours is the maximum number of hours that can count for credit for the Master's in Philosophy degree. A preliminary draft stating the thesis title, describing the problem to be investigated, the method to be used, the outline of the study, and a preliminary bibliography must be prepared in advance for the thesis advisor. Instructions that specify the proper form for these documents are to be obtained from the SIUC Graduate School.
    b. With a minimum of three members of the graduate faculty, a student will sit for an oral defense and oral comprehensive examination covering the thesis and the student's graduate course work. Before the oral defense and examination can be scheduled, it is required that all members of the thesis committee agree that the student's thesis is formally adequate: proper formatting, polished writing, and complete citations. Only members of the thesis committee may vote and make recommendations concerning acceptance of the thesis and examination. A student will be recommended for the degree only if the members of the committee, with at most one exception not to include the committee chair, judge both the thesis and the performance at the oral examination to be satisfactory. In cases where a committee of more than three has been approved, the requirement of not more than one negative vote will still apply.
    c. In general, this requirement should be met no later than the end of one's second year of residence.

Doctor of Philosophy (Ph.D.) in Philosophy

The Ph.D. degree in Philosophy is designed to prepare students for college teaching and for research in their area of specialization. In order to earn the Ph.D. in Philosophy degree the student must fulfill the following requirements:

1. Completion of 30 credit hours of course work, not including course work for a M.A. in Philosophy and not including the minimum 24 credit hours for the dissertation.
2. Each doctoral candidate must take a preliminary examination after they have accumulated between 24 to 30 credit hours and before they begin work on the dissertation. Note that students who have current incompletes may not take this examination; students are expected to make up incomplete grades within one month of completion of the course in which the incomplete was assigned. In addition, students who have less than a 3.5 grade point average are not permitted to take this examination. A requirement of the Philosophy program's standard for satisfactory progress in the Ph.D. program is a grade point average of 3.5 or above.
   The preliminary examination consists of the submission of two highly polished papers. These are near publishable quality article-length papers (approximately 6,000-12,000 words in length including references), and should be prepared accordingly (i.e., formatting, grammar, footnotes, etc.). It is advisable to work with a member of the Philosophy Faculty in preparing a paper, especially if it is based on a paper written for the faculty member's course. Students are also encouraged to take the Research Seminar to assist in the preparation of their papers. The preliminary examination papers will be read by the entire voting membership of the Philosophy Faculty. The readers will meet as a committee and make a determination of pass or fail for each student's pair of submitted

papers. In the case of a failing grade, the student will not be permitted to advance to candidacy for the Doctorate of Philosophy in Philosophy.
Students are encouraged to consider their likely field of research for their dissertation as well as desired fields of teaching specialization when choosing topics for their preliminary examination papers.

3. Fulfillment of a research tool requirement, such as, for example:
    a. By demonstrating reading competence in one language other than English, such as, for example, by having a B.A. in Spanish.
    b. By completing graduate-level courses in a research-related area, such as Psychology, Statistics, History, Africana Studies, Sociology, Political Science, etc.
    c. By doing archival work in Special Collections under the supervision of a faculty member.
    d. Note that these are provided as examples, and are not intended as an exhaustive list. There are other acceptable ways of fulfilling the research tool requirement. Students should consult their advisor and the Director of Graduate Studies about the course work that they plan to take for their research tool. Approval from the Director of Graduate Studies is required.

   Note that there should be alignment between one's research tool and one's dissertation project; one's research tool should support and help facilitate one's research. Fulfillment of these requirements does not necessarily count toward the completion of the required 30 credit hours of Ph.D. course work.
4. Admission to Candidacy – After 30 credit hours of Ph.D. course work have been completed, the research tool obtained, and the preliminary examination passed, the Director of Graduate Studies must file an Admit to Candidacy form with the Graduate School. This form is to be filed at least six months before the expected date of graduation. The student is responsible for seeing whether this form has, in fact, been filed. The student must have obtained the agreement of a faculty member to serve as dissertation director.
5. Dissertation
    a. The dissertation director is responsible for selecting a dissertation committee in consultation with the student. The committee shall consist of five graduate faculty members, at least one of whom shall be from a graduate program outside the student's academic unit. The program allows for the possibility of faculty from other institutions to serve on the student's committee. Once the dissertation director has been chosen and the committee formed, any subsequent changes to the dissertation directorship position must be approved by the Director of Graduate Studies. The appropriate change form must be sent to the Dean of the Graduate School for approval.
    b. In preparation for the writing of the dissertation, the candidate must have a prospectus review. The Director of the dissertation is responsible, in consultation with the candidate, for determining what appropriate background reading is necessary for beginning the dissertation and for the initial formulation of the project. The candidate will proceed to generate a prospectus explaining their project and defending its contemporary significance in their field of research. A prospectus should be approximately 10-20 pages in length; it should also include a proposed outline for the dissertation and a working bibliography. The Director of the dissertation will appoint a committee (four professors from the program and one professor from outside the program) that will convene for the review of the prospectus. The review will help the candidate in the final formulation of the project before proceeding with the writing of the dissertation. The committee members will fill out a comment sheet for the candidate.
    c. While working on the dissertation, the student must register for the course numbered PHIL 600. The student is to devote at least one academic year of full-time work to complete the dissertation and will register for 24 credit hours of dissertation credit (students may sign up for from 1 to 16 hours of PHIL 600 per semester). For example, the student wishing to complete the dissertation in one year may register for 12 credit hours of dissertation credit for each of two terms. Students who have registered for 24 credit hours of dissertation credit and have not completed the doctoral dissertation are subject to the continuing enrollment requirement course number PHIL 601. Students are required to complete 24 credit hours of PHIL 600. The student may take only six of these 600-level credit hours prior to formal admission to candidacy, and only six of these credit hours will count towards the residency requirement.
    d. Students who have completed all but the dissertation requirements, but who have previously enrolled for the minimum number of research, thesis, or dissertation credit hours required of the degree, must enroll every semester for at least one credit hour until all degree requirements have been completed (Summer sessions exempt). Whether in residence or not, students are required to enroll in Continuing Enrollment (PHIL 601 - 1 credit hour

per semester) if not otherwise enrolled. Concurrent registration in any other course is not acceptable. See the Graduate Catalog for more specific details, under the heading GENERAL REGULATIONS AND PROCEDURES.

e. The candidate will do the required research and write the dissertation. There is no set length for a dissertation, but 150 to 250 pages is the average length of a philosophy dissertation.
f. The candidate and the dissertation director should work together until the document is ready to receive critical input from the committee. When the dissertation director indicates that the dissertation is ready for defense, it shall be required of the dissertation director to submit to each committee member a copy of the dissertation for the members' examination. This must be delivered at least two months in advance of the anticipated and tentative date of the defense. The committee must then decide whether the dissertation is acceptable for defense.
g. The candidate shall conduct an oral defense of the dissertation and related topics in the field before the dissertation committee. The oral defense is open to the public. Only the committee members vote or make recommendations concerning the acceptance of the dissertation and final examination. At the discretion of the dissertation director, guests may be permitted to ask questions of the candidate after the committee members have conducted the examination. A student will be recommended for the degree of Doctor of Philosophy in Philosophy only if the members of the committee judge both the dissertation and the performance at the final oral examination to be satisfactory. One dissenting vote is permitted.

Philosophy Courses

PHIL405 - Democratic Theory (Same as POLS 405) An examination of various aspects of democratic thought, including the liberal tradition and its impact upon the United States. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Prerequisite: POLS 114 or consent of instructor. Credit Hours: 3

PHIL410 - Philosophy of Language (Same as LING 410) A survey and introduction to theories on the nature of "truth" and "meaning" and their relationship to natural language. Potential topics include: reference, definite descriptions, externalism, modality and possible worlds. Credit Hours: 3

PHIL415 - Logic of Social Sciences (Same as SOC 415) An examination of the theoretical structure and nature of the social sciences and their epistemological foundations. The relationship of social theory to social criticism; theory and praxis. Historical experience and social objectivity. Social theory as practical knowledge. Credit Hours: 3

PHIL417 - History and Philosophy of Science An exploration of historical and philosophical perspectives on the theories, methods, practices, and institutions of the sciences, including the natural and social sciences, mathematics, medicine, and engineering. Topics may include the nature of the scientific process and scientific method, the origins and historical development of the sciences, theory change, experiments, models, objectivity, scientific realism, and the role of values in science. Credit Hours: 3

PHIL433 - Post-Colonialism Philosophy This course focuses on African, Caribbean, and Latin American philosophers who have and continue to contribute to the development of post-colonial philosophy. In this class we will examine how post-colonial thinkers challenge and rework some of the main areas of philosophy, such as epistemology, political philosophy, ethics, philosophy of language, etc., by decentering the colonial assumptions that underpin these areas and their development. This class explores what this decentering means, not only for postcolonial theory, but also for how we think of race, class, gender and other forms of oppression and liberation, globally. Restricted to 3rd Year standing. Credit Hours: 3

PHIL434 - Media Ethics (Same as JRNL 434) Explores the moral environment of the mass media and the ethical problems that confront media practitioners. Models of ethical decision-making and moral philosophy are introduced to encourage students to think critically about the mass media and their roles in modern society. Credit Hours: 3

PHIL435 - Environmental Philosophy This class explores the relationship between human beings, globalization, and the natural world. It will use both classical and contemporary literature on nature and address such topics as climate change, deep ecology, colonialism, third world ecofeminism, indigenous environmentalism, environmental racism, and eco-genocide. Credit Hours: 3

PHIL441 - Philosophy of Politics (Same as POLS 403) The theory of political and social foundations; the theory of the state, justice, and revolution. Classical and contemporary readings such as: Plato, Aristotle, Hobbes, Locke, Rousseau, Marx, Dewey, Adorno and others. Prerequisite: PHIL 340 or PHIL 102 or consent of instructor. Credit Hours: 3

PHIL445 - Philosophy of Law Study of contemporary philosophical essays on topics at the intersection of law and philosophy, such as abortion on demand, capital punishment, plea bargaining, campus speech codes, legalization of addictive drugs, and animal rights, and what systematic philosophers, such as Thomas Hobbes, John Locke, John Stuart Mill, Karl Marx, and H.L.A. Hart, have written about the nature of a legal system and the appropriate realm of legal regulation. Credit Hours: 3

PHIL446A - Feminist Philosophy (Same as WGSS 456A) A general survey of feminist theory and philosophical perspectives. Credit Hours: 3

PHIL446B - Topics in Feminist Philosophy (Same as WGSS 456B) A special area in feminist philosophy explored in depth, such as Feminist Ethics, French Feminism, Feminist Philosophy of Science, etc. Credit Hours: 3

PHIL446C - Women Philosophers (Same as WGSS 456C) Explores the work of one or more specific women philosophers, for example Hannah Arendt, Simone DeBeauvoir, etc. Credit Hours: 3

PHIL450 - American Transcendentalism This course will study the rise of Transcendentalism as a philosophical movement in early Nineteenth Century New England. Focus will be on Ralph Waldo Emerson and Henry David Thoreau with possible attention to Margaret Fuller and other figures like Hedge, Parker and Brownson. Credit Hours: 3

PHIL451 - History of African American Philosophy (Same as AFR 499A) A survey of major thinkers and themes in the history of African American Philosophy from colonial times to the 20th century. Prerequisite: at least one previous course in either Philosophy or Africana Studies with a grade of C or better. Credit Hours: 3

PHIL455 - Philosophy of Race (Same as AFR 499B) A survey and critical examination of a range of theories on the nature and meaning of "race," the intersection of race with class and gender, and the promotion of racial progress. Such theories include racial realism and idealism, racial biologism, cultural race theory, social constructivist theory, integrationism, separatism, racial eliminativism, cosmopolitanism, and especially critical race theory. Prerequisite: at least one previous course in Philosophy or Africana Studies with a minimum grade of C. Credit Hours: 3

PHIL459 - Topics in Africana Philosophy (Same as AFR 499C) A seminar on varying topics, themes, and figures in African, African American, and/or Caribbean Philosophy, e.g., "W.E.B. Du Bois and His Contemporaries," "Pan-Africanism," "Philosophies of Liberation," "Black Feminism," "Contemporary African Philosophy," "Philosophies of the Caribbean." Prerequisite: At least one previous course in Philosophy or Africana Studies with a minimum grade of C. Credit Hours: 1-6

PHIL460 - Philosophy of Art We will examine several important theories that define art by focusing in on only one aspect, for example, imitation, expression, form, institutional setting, or even indefinability. What role does imagination play in each of these accounts, and does this tell us something important about how people experience their world? Credit Hours: 3

PHIL468A - Kant-Theoretical Philosophy Credit Hours: 3

PHIL468B - Kant-Practical Philosophy Credit Hours: 3

PHIL468C - Kant-Aesthetics, Teleology and Religion Credit Hours: 3

PHIL470A - Greek Philosophy-Plato (Same as CLAS 470A) Survey of Plato's dialogues mostly selected from those of the middle period (Meno, Phaedo, Symposium, Republic, Phaedrus), perhaps along with

some from the early period (especially Protagoras) and late period (Sophist, Timaeus). Prerequisites: PHIL 304A or CLAS 304A, and PHIL 304B or CLAS 304B with minimum grades of C, or consent of instructor. Credit Hours: 3

PHIL470B - Greek Philosophy-Aristotle (Same as CLAS 470B) A general survey of the Aristotelian philosophy including the theory of nature, metaphysics, ethics, and political philosophy. Readings will consist of selections from the corpus. Prerequisites: PHIL 304A or CLAS 304A, and PHIL 304B or CLAS 304B with minimum grades of C, or consent of instructor. Credit Hours: 3

PHIL471A - History of Medieval Philosophy An examination of some of the most important figures and themes in medieval philosophical thought. Medieval debates in the area of metaphysics, natural philosophy, epistemology, ethics and politics will be explored in reading the works of such figures as Augustine, Boethius, Abelard Avicenna, Averroes, Maimonides, Bonaventure, Thomas Aquinas, Duns Scotus, Ockham and Nicholas of Cusa. Credit Hours: 3

PHIL471B - The Medieval Thinker An examination of the thought of one of the central and most influential figures of the medieval world. Possible subjects of the course are Augustine of Hippo, Al-Ghazali, Moses Maimonides, Bonaventure, Thomas Aquinas, Duns Scotus, Dante Alighieri or William Ockham. Credit Hours: 3

PHIL472 - The Rationalists Study of the philosophy of one or more of Descartes, Spinoza, Leibniz, Malebranche, Wolff. Prerequisite: PHIL 305A or B or consent of instructor. Credit Hours: 3

PHIL473A - The Empiricists-Locke Study of the principles of British empiricism as represented by Locke. May also include study of Berkeley. Prerequisite: PHIL 305 or consent of instructor. Credit Hours: 3

PHIL473B - The Empiricists-Hume Study of the principles of British empiricism as represented by Hume. May also include study of Berkeley. Prerequisite: PHIL 305 or consent of instructor. Credit Hours: 3

PHIL474 - Aristotle's Ethics This course will focus on reading Aristotle's Nicomachean Ethics. Topics will include: the idea of a well-lived life (happiness), the relation of reason and desire, character formation, deliberative and moral reasoning, the types of human excellence, friendship and the role of philosophy in a well-lived life. Readings may include: Greek drama (e.g., Antigone, Medea), Aristotle's Politics, and contemporary writers in "virtue ethics." Credit Hours: 3

PHIL478 - Buddhist Philosophy An examination of several major philosophical traditions or figures in Buddhism, such as Madhyamika, Yogacara, Zen, Mind-Only, and the Kyoto School, emphasis on their social and historical contexts. Credit Hours: 3

PHIL482 - Recent European Philosophy Philosophical trends in Europe from the end of the 19th Century to the present. Phenomenology, existentialism, the new Marxism, structuralism, and other developments. Language, history, culture and politics. Credit Hours: 3

PHIL485 - The Presocratics The course will survey the Presocratic movement from the Milesians, Heraclitus and the Pythagoreans to the Eleatics, Empedocles, Anaxagoras and Democritus. Topics will include: the idea of nature, origin/source/principle (arche), the mathematical and nature, Being, pluralism and monism, the atomic theory. Some attention may be paid to the Sophists and the Epicureans. Credit Hours: 3

PHIL486 - Early American Philosophy From the Colonial Era to the Eve of World War I. This course will trace the transplantation of European philosophy to the New World and watch its unique process of development. Movements such as Puritanism, the theory of the American Revolution, the philosophical basis of the Constitution, transcendentalism, idealism, Darwinism and pragmatism and such figures as: Jonathan Edwards, Thomas Jefferson, James Madison, Ralph Waldo Emerson, Josiah Royce, Charles Sanders Peirce, and William James. Credit Hours: 3

PHIL487 - Recent American Philosophy From World War I to the Present. The major American philosophers of the 20th Century, covering such issues as naturalism, emergentism, process philosophy,

and neopragmatism. Figures include: John Dewey, George Herbert Mead, George Santayana, Alfred N. Whitehead, C. I. Lewis, W. V. Quine, and Richard Rorty. Credit Hours: 3

PHIL500 - Metaphysics Seminar focusing on readings taken from major classical to contemporary writings in the subject of metaphysics (e.g., Aristotle's Metaphysics, Descartes' Principles, Whitehead's Process and Reality, etc.) or on special movements or on problems in the subject (e.g., substance, causation, reductionism, etc.). Credit Hours: 3

PHIL501 - Philosophy of Religion Analysis of a problem in philosophical theology or the phenomenology of religion or of the work of a particular thinker. Credit Hours: 3

PHIL502 - Formal Semantics (Same as LING 500) Discussion of the formal mechanisms used to encode meaning in natural language. Potential topics include: predication, definiteness, quantification, and semantic modeling. Credit Hours: 3

PHIL530 - Theory of Knowledge Seminar focusing on readings taken from major classical to contemporary writings in the theory of knowledge (e.g., Plato, Theaetetu; Aristotle, De Anima; Locke, Essay Concerning Human Understanding; Quine, Ontological Relativity; Rorty, The Mirror of Nature, etc.) or on movements or on problems in the subject (the object of knowledge, justification, method, etc.). Credit Hours: 3

PHIL535 - Philosophy of Science Seminar focused on one or more advanced topics in the Philosophy of Science, such as the role of values in science, public trust in science, scientific realism, philosophy of quantum physics, philosophy of biology. Credit Hours: 3

PHIL542 - Political and Legal Philosophy Relations of law, morality, and politics, and consideration of problems and issues in philosophy of law. Credit Hours: 3

PHIL545 - Ethics An examination of the fundamental assumptions underlying twentieth century British and American moral theory. Special attention is given to recent attempts to develop a psychologically realistic moral philosophy that avoids both moral absolutism and extreme forms of relativism. Credit Hours: 3

PHIL551 - Introduction to Teaching and the Profession Introduction to the methodology and ethics of teaching philosophy; supervision of teaching assistants. Restricted to philosophy graduate students on assistantship contract. Credit Hours: 1

PHIL552 - Teaching Practicum Ongoing supervision of teaching assistants and discussion of pedagogical, ethical and professional issues. Prerequisite: PHIL 551. Credit Hours: 1

PHIL553 - Supervision of Teaching for Graduate Assistants Instruction in the methods of teaching philosophy and direct supervision of course teaching. Prerequisite: PHIL 551. Credit Hours: 1

PHIL559 - Topics in Africana Philosophy A seminar on varying topics, themes, and figures in African, African American, and/or Caribbean Philosophy, e.g., "W.E.B. Du Bois and His Contemporaries," "Pan-Africanism," "Philosophies of Liberation," "Black Feminism," "Contemporary African Philosophy," "Philosophies of the Caribbean. Credit Hours: 3-6

PHIL560 - Aesthetics Selected topics or writings. Credit Hours: 3

PHIL562 - Philosophy of Human Communication (See CMST 562) Credit Hours: 3

PHIL563 - Philosophy of Nietzsche A reading of Nietzsche's works and critical discussion of his major themes in light of their historical and contemporary reception. Credit Hours: 3

PHIL564 - Frankfurt School Critical Theory An examination of the conceptual foundations and historico-philosophical theories of the Institute for Social Research School, known as critical theory, covering one or more of the major first- and second-generation thinkers: Horkheimer, Adorno, Marcuse, Habermas. Credit Hours: 3

PHIL565 - Continental Feminist Philosophy (Same as WGSS 565) An examination of major figures and problems in continental feminism, focusing on metaphysical, ethical, political, and aesthetic theories in the works of Beauvoir, Kristeva, Iragaray, Butler, and Kofman. Credit Hours: 3

PHIL566 - Psychoanalysis An examination of psychoanalytic theory in the context of continental philosophy, studying the foundation of psychoanalysis and major developments since Freud, including French psychoanalytic theory, the British School, and developments in American psychoanalysis. Credit Hours: 3

PHIL570 - American Idealism One or more American idealists. Recent seminars have been devoted to the thought of Brand Blanshard and Peter A. Bertocci. Credit Hours: 3

PHIL577A - Classical American Philosophy-Peirce A focused study of various aspects of Peirce's philosophy such as his pragmatism and semiotics. Credit Hours: 3

PHIL577B - Classical American Philosophy-James A critical examination of James' pragmatism, radical empiricism and pluralism. Credit Hours: 3

PHIL577C - Classical American Philosophy-Dewey An examination of such themes in Dewey's philosophy as the influence of Darwin, nature and experience, aesthetics, technology and democracy. Credit Hours: 3

PHIL577D - Classical American Philosophy-Mead A critical examination of Mead's theories regarding the social self and social life. Credit Hours: 3

PHIL578 - Husserl A careful and systematic reading of Husserl's major works or treatment of important themes throughout his writings, such as, the problem of evidence, perception and rationality, time-consciousness, phenomenology of association, or the lifeworld. Credit Hours: 3

PHIL579 - Heidegger This course features a close reading of Heidegger's masterwork, BEING AND TIME, supplemented by selected later essay and secondary literature as suggested by the instructor. Credit Hours: 3

PHIL580 - The Pre-Socratics The emergence of Greek philosophy in the sixth century B.C., the Milesians, Heraclitus and the Pythagoreans; the Eleatic movement and Parmenides, and the critical systems of Empedocles, Anaxagoras, and atomism; concluding with a discussion of the Sophistic movement and Socrates. Epic, lyric and dramatic literature of the period may be examined as well as philosophical writings. Credit Hours: 3

PHIL581 - Plato Intensive reading of selected texts focusing on some aspect of Plato's thought or on Platonism as a movement. Credit Hours: 3

PHIL582 - Aristotle Intensive reading on several texts, analyzing selected portions of Aristotle's thought. Credit Hours: 3

PHIL583 - Merleau-Ponty This course will focus on a major work by Merleau-Ponty (such as the Phenomenology of Perception), or will develop a major theme (perception, aesthetics, politics) in his thought by consulting several of his works. Credit Hours: 3

PHIL584 - Levinas This course will be devoted to a detailed and systematic study of one of Levina's major works, such as Totality and Infinity or Otherwise than Being, or to a survey of key elements of his thought contained in his many important essays. Credit Hours: 3

PHIL587 - Kant Credit Hours: 3

PHIL588 - Hegel Credit Hours: 3

PHIL589 - Scheler This course is devoted to a systematic reading of Scheler's works that concern any one of the many dimensions of his thought, for example, the nature of "person", ethics and value theory, the philosophy of religion, the sociology of knowledge, or politics. Credit Hours: 3

PHIL590 - General Graduate Seminar Selected topics or problems in philosophy. Repeatable for 12 hours per term, 30 hours toward degree. Credit Hours: 1-12

PHIL591 - Readings in Philosophy Supervised readings for qualified students. Prerequisite: Students must have written permission from the Graduate Director to register for more than six hours at each level. Credit Hours: 1-16

PHIL595 - Research Methods in Philosophy This seminar provides a focus on philosophical research methods and philosophical writing. This course is particularly appropriate for students working to prepare their preliminary examination papers, to polish a paper for publication as a journal article, or otherwise working to enhance their research and writing skills. Credit Hours: 3

PHIL599 - Thesis Minimum of four hours to be counted towards a Master's degree. Credit Hours: 2-6

PHIL600 - Dissertation Repeatable for 16 hours per term, 30 hours toward degree. Credit Hours: 1-16

PHIL601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

PHIL699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Philosophy Faculty

Brown, Matthew J., Professor, Boydston Chair of American Philosophy, Ph.D., University of California San Diego, 2009; 2022. Pragmatism, American philosphy, John Dewey, history and philosophy of science, political philosophy, philosophy of mind/cognitive science, comics studies.

Frankowski, Alfred, Associate Professor, Ph.D., University of Oregon, 2012.

Stikkers, Kenneth W., Professor, Ph.D., DePaul University, 1982; 1997. American philosophy, continental philosophy, ethics, Scheler, James.

Youpa, Andrew, Professor, Ph.D., University of California, Irvine, 2002; 2003. History of modern philosophy, contemporary moral philosophy, and ancient philosophy.

Emeriti Faculty

Alexander, Thomas, Professor, Emeritus, Ph.D., Emory University, 1984; 1985.

Beardsworth, Sara, Associate Professor, Emerita, Ph.D., University of Warwick, 1994; 2004.

Clarke, David S., Jr., Professor, Emeritus, Ph.D., Emory University, 1964; 1966.

Gatens-Robinson, Eugenie, Associate Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1983; 1974.

Gillan, Garth J., Professor, Emeritus, Ph.D., Duquesne University, 1966; 1969.

Hahn, Robert, Professor, Ph.D., Yale University, 1976; 1982. Greek philosophy, philosophy and history of science, Kant.

Hickman, Larry A., Professor, Emeritus, Ph.D., University of Texas at Austin, 1971; 1993.

Kelly, Matthew J., Associate Professor, Emeritus, Ph.D., University of Notre Dame, 1963; 1966.

Manfredi, Pat A., Associate Professor, Emeritus, Ph.D., University of Notre Dame, 1983; 1994.

Schedler, George, Professor, Emeritus, Ph.D., University of California, San Diego, 1973, J.D., Southern Illinois University, Carbondale, 1987; 1973.

Steinbock, Anthony J., Professor, Emeritus, Ph.D., State University of New York, Stony Brook, 1993; 1995.

Tyman, Stephen, Associate Professor, Emeritus, Ph.D., University of Toronto, 1980; 1980.

Public Health and Population Health

The School of Human Sciences offers graduate programs leading to a Ph.D. in Population Health, a Master of Public Health (M.P.H.), an M.P.H./M.D. (must first be admitted to the SIU School of Medicine), and a Graduate Certificate in Public Health with two track options. Persons interested in pursuing any of these degrees should initially consult the Director of Graduate Studies regarding appropriate courses and assignment to an advisor.

Application/Admission

Requirements for admission to the Ph.D. in Population Health or the M.P.H. program are:

1. Completion and submission of Graduate School admission application; a nonrefundable $65 application fee must be submitted with the application for those applying for the Ph.D. in Population Health degree or the Master of Public Health degree. Applicants must pay this fee by credit card.
2. Submission of three letters of recommendation to the School of Human Sciences Director at Human.Sciences@siu.edu (for Ph.D. only).
3. Submission of all official transcripts for previous undergraduate and graduate work.
4. Submission of supplemental essays (for Ph.D. only).
5. Submission of a CV/resume.

Whereas applications are reviewed continuously throughout the year, actual admissions for the M.P.H. program occur 5 times per year, while the Ph.D. in Population Health admissions occur only for the fall semester. Some exceptions to this timeframe can occur under special circumstances. Contact the School of Human Sciences Director for more information at Human.Sciences@siu.edu.

Master of Public Health (M.P.H.) in Public Health

Automatic Admission

1. 3.00 minimum cumulative GPA for undergraduate coursework with or working towards awarded degree.
2. Graduate coursework credit hours of 9 or more requires a 3.00 or better minimum cumulative GPA, which supersedes undergraduate GPA.
3. A completed program application, all undergraduate and graduate college transcripts, a current resume and valid identification

Conditional Admission

Applicants with an undergraduate overall GPA between 2.70 and 2.99 (and no applicable graduate coursework) will be required (in addition) to submit a Letter of Interest (500-700 words) stating their desire for admission and explaining how it aligns with their career goals. These applications will be evaluated by the MPH program for admission decisions.

If approved for conditional admission, students will have one term to achieve the required 3.00 GPA and are expected to maintain that GPA through both terms (one full semester). If conditions are met as stated, the student will be allowed to continue studies in the program.

Required Majors (MUST be printed on transcripts):

- Public Health
- Community Health
- Exercise Science
- Health Education
- Nursing

- Nutrition
- Pharmacy
- Psychology
- Social Work
- Sociology
- Other*

*If an applicant does not/will not have an awarded degree from one of these Majors but otherwise meets the program requirements, they should select “Other” when applying. Applicant would not be eligible for Automatic Admission and would need to follow the guidelines for “Conditional Admission”.

Graduate overall GPA’s must meet the SIU Graduate School requirement of 3.00 or better for at least 9 credit hours of graduate coursework to be considered for admission.

All auto-admitted applications will be reviewed by the program for veri#cation of stated program requirements. The program reserves the right to disallow admission if an applicant has not met all standards for admission to the program.

Non-Declared Status

“Nondeclared” hours from the MPH program can be counted towards the degree. The M.P.H. program offers 5 admission points (eg., SP1, SP2, Summer, Fall1, Fall2).

Taking MPH courses as a non-declared graduate student does not auto-admit students into the MPH program. While students will receive credit for any courses taken that are required for the MPH degree, the Graduate School requirement of a maintained 3.0 GPA must be met in order to get into the program. Additionally, non-declared students must follow the same requirements/listed criteria as any applicant initially applying to the MPH program.

Degree Requirements

A student must complete a minimum of 42 credit hours consisting of at least the following courses:

- PH 505: Foundations of Public Health Knowledge (3 CH)
- PH 506: Communicating Public Health (3 CH)
- PH 507: MPH Experiential Learning Seminar (1 CH)
- PH 508: Leadership in Public Health (2 CH)
- PH 512: Public Health Program Planning (3 CH)
- PH 513: Public Health Analytics I (3 CH)
- PH 514: Public Health Analytics II (3 CH)
- PH 525: Applied Theoretical Foundations of Public Health (3 CH)
- PH 526: Evidence-based Research and Evaluation in Public Health (3 CH)
- PH 532: Public Health Administration: Principles and Practices (3 CH)
- PH 583: U.S. Health System: Organization, Delivery, and Policy (3 CH)
- PH 593: Principles of Epidemiology in Public Health (3 CH)
- PH 598: Grant Writing in Public Health (3 CH)
- PH 599A: MPH Applied Practical Experience (APE) Seminar (1 CH)
- PH 599B: MPH Applied Practical Experience (APE) (2 CH)
- PH 599C: MPH Integrative Learning Experience (ILE) (3 CH)

M.P.H./M.D. Concurrent Degrees

Applicants may apply for a concurrent degree in Medicine and Public Health (must first be admitted to the SIU School of Medicine). Applicants for the Master of Public Health (M.P.H.) degree must have earned a grade point average (GPA) of 3.00 or better (A = 4.00) on the entire last undergraduate GPA earned at the time of application to be admitted in good standing. MPH/MD students must start in the summer.

Concurrent Degree Requirements

For the medical degree, all students must complete all requirements outlined by the SIU School of Medicine. For the M.P.H. degree, a student must complete a minimum of 42 credit hours with the following courses being required during the first year:

- PH 505: Foundations of Public Health Knowledge (3 CH)
- PH 506: Communicating Public Health (3 CH)
- PH 507: MPH Experiential Learning Seminar (1 CH)
- PH 508: Leadership in Public Health (2 CH)
- PH 512: Public Health Program Planning (3 CH)
- PH 513: Public Health Analytics I (3 CH)
- PH 514: Public Health Analytics II (3 CH)
- PH 525: Applied Theoretical Foundations of Public Health (3 CH)
- PH 526: Evidence-based Research and Evaluation in Public Health (3 CH)
- PH 532: Public Health Administration: Principles and Practices (3 CH)
- PH 583: U.S. Health System: Organization, Delivery, and Policy (3 CH)
- PH 593: Principles of Epidemiology in Public Health (3 CH)
- PH 598: Grant Writing in Public Health (3 CH)

In addition, the student must complete the following courses during the fifth year:

- PH 599A: MPH Applied Practical Experience (APE) Seminar (1 CH)
- PH 599B: MPH Applied Practical Experience (APE) (2 CH)
- PH 599C: MPH Integrative Learning Experience (3 CH)

Required:

- Population Health Leadership, 1 week/hour, SIU-SOM
- Clinical Epidemiology, 2 weeks/hours, SIU-SOM
- Emerging Trends in Public Health, 1 week/hour, SIU-SOM
- Clinical Rotations

Optional:

- All Hazards Preparedness and Response, 1 week/hour, SIU-SOM
- Cancer Health Disparities,1 week/hour, SIU-SOM
- Advancing Health Equity in Clinical Practice, 1 week/hour, SIU-SOM
- Parenting and Child Health, 2 weeks/hours, SIU-SOM
- Health Policy Government Relations, 1 week/hour, SIU-SOM
- Social Life of Food, 1 week/hour, SIU-SOM
- Social Innovation in Medicine, 1 week/hour, SIU-SOM
- Addressing Health Disparities: Improving the Health of Populations, 2 weeks/hours, SIU-SOM

Doctor of Philosophy (Ph.D.) in Population Health

The Ph.D. in Population Health in the School of Human Sciences at SIUC is distinguished by its interdisciplinary approach to graduate education. The program will prepare professional leaders in academic, clinical, professional and research settings. The doctoral program will also prepare graduates to develop and implement innovative solutions to population health issues. The Population Health Ph.D. comprises foundational courses, research/scholarly or practice innovation courses, directed mentorship, and dissertation/professional product development exemplifying transition to career independence.

Doctoral students will identify a primary area of emphasis within the School of Human Sciences and a secondary area of emphasis, which is used to inform the program of study and research experience. Each student’s primary and secondary areas of emphasis will be identified in consultation with their dissertation chair/advisor during their first semester.

Degree Requirements

Core (22 CH)

- PH 603: PhD Seminar (a minimum of 3 credit hours – one credit per semester)
- PH 533B: Foundations of Public Health II (4 CH) or equivalent
- PH 598: Grant Writing or equivalent (3 CH)
- PH 513: Public Health Analytics I (3 CH)
- PH 514: Public Health Analytics II (3 CH)
- 6 additional credit hours of statistics or qualitative data analysis

Primary Emphasis Area

- 9 credit hours of coursework

Secondary Emphasis Area

- 6 credit hours of coursework

Dissertation (24 CH)

- Original research based on emphasis areas [requires the submission (not necessarily publication) of 3 articles to respected peer-reviewed journals beyond what is required for the comprehensive exam; the final dissertation product will include 5 chapters, where chapter 1 includes an introduction to the three papers], chapters 2-4 include three distinct research projects, and chapter 5 includes a summarization/discussion of the three papers).

Additional Requirements

Preliminary/Comprehensive Examinations – competency based (complete 4 of the options below):

- CTE teaching micro credential completion
- Present (orally or via a poster) original research at a national conference
- Grant application, ideally suited for the student's dissertation (submitted to a federal [e.g., NIH, NSF, DoD], state [e.g., IDPH, IDHS], foundation [e.g., RWJF], or internal [e.g., SIU] source)
- Manuscript peer-review (journal editor-in-chief letter verification)
- Service to the university and profession (service on at least 1 school, college, or university level committee and proof of membership in a professional organization)
- Leadership certificate

Inquiries regarding application should be directed to the director of doctoral studies for Population Health.

Certificate in Gerontology

The School of Human Sciences offers a Certificate in Gerontology interdisciplinary program. PH 440, Health Issues in Aging, is a Certificate requirement for the certificate program. For more information on this Certificate program, please see the Post-Baccalaureate Certificate Programs tab.

Certificate in Public Health

Requirements for the Certificate in Public Health (either track) include:

- 3.0 GPA or higher in undergraduate work or 3.0 GPA or higher in 9 credit hours of graduate coursework. Graduate coursework overrides undergraduate coursework.
- Resume/CV
- One of the following declared majors on transcripts:
  - Public Health
  - Community Health
  - Exercise Science

- Health Education
- Nursing
- Nutrition
- Pharmacy
- Psychology
- Social Work
- Sociology
- Other*

*If other, a letter of interest (500-700 word) stating desire to earn the certificate and how it aligns with career goals is required.

The School of Human Sciences offers two tracks leading to a Certificate (post-baccalaureate) in Public Health requiring 15 credit hours in the following MPH courses:

Epidemiology/Biostatistics Track:

- PH 505: Foundations of Public Health Knowledge (3 CH)
- PH 513: Public Health Analytics I (3 CH)
- PH 514: Public Health Analytics II (3 CH)
- PH 526: Evidence-based Research and Evaluation in Public Health (3 CH)
- PH 593: Principles of Epidemiology in Public Health (3 CH)

Community Health Track:

- PH 505: Foundations of Public Health Knowledge (3 CH)
- PH 512: Public Health Program Planning (3 CH)
- PH 525: Applied Theoretical Foundations of Public Health (3 CH)
- PH 526: Evidence-based Research and Evaluation in Public Health (3 CH)
- PH 593: Principles of Epidemiology in Public Health (3 CH)

For more information on this certificate program, please see the Post-Baccalaureate Certificate Programs tab.

Public Health and Population Health Courses

PH402 - Death Education Designed to prepare educators to conduct learning experiences about death and dying in a variety of school, college, medical care, and community settings. Stress will be placed on developing brief, functional curricula and usable, imaginative, teaching-learning materials and on evaluating resource materials for use in educating at various levels of maturity. Credit Hours: 3

PH403 - Health Advocate Training Provides students with knowledge and skills in the areas of peer health education, health advocacy, and referral. Instruction includes health care information from a wellness point of view. Prepares students for practicum in health advocate program. Credit will not count toward a master's degree in health education. Special approval needed from the instructor. Credit Hours: 3

PH407 - Substance Use Prevention Designed to prepare educators to plan, implement and evaluate substance use prevention programs. Emphasizes incidence/prevalence, etiology, risk factors, short- and long-term effects of substance use. Key elements of effective prevention programs are reviewed. Meets requirements of Illinois state law concerning drug education. Credit Hours: 3

PH410 - Human Sexuality (Same as WGSS 411) Provides detailed information on dimensions of sexuality; characteristics of healthy sexuality; anatomy and physiology; gender roles; relationships; sexually transmitted infections/diseases; contraceptive issues and concerns; sexual victimizations; and sexuality through the life cycle. Credit Hours: 3

PH411 - Emergency Medical Technician in the Wilderness Placement of trained emergency medical technicians into a wilderness situation and having them adopt previously learned skills and newly developed skills. Prerequisite: PH 334 or PH 434. Credit Hours: 6

PH412S - Driving Task Analysis: An Introduction An introductory course that deals with the highway transportation system, traffic problems, the driving task, perception and implementation of the driver education classroom program. Observation of a teaching environment is included. A valid driver's license is required. Credit Hours: 3

PH413S - Injury Prevention and Safety Introduces the concepts and topics of injury prevention and safety. Course areas include: school, farm, consumer, fire, home, traffic, occupational, recreational, and disaster. Credit Hours: 3

PH414 - Sexuality Education Focuses on knowledge/skills needed to address complex issues of sexuality education. Discussion will include challenges/resources for all health education settings and related disciplines. Purposes/goals, the nature of sexuality education teachers/learners, and "best practice" will be covered. Emphasis on developing competencies essential for professional practice. Credit Hours: 3

PH415 - Health Counseling This course teaches basic communication skills and intervention strategies for helping people make positive health related lifestyle changes. It is not a course in therapeutic counseling; it focuses on helping average people to function in the healthiest way possible. Credit Hours: 3

PH430 - Health and Injury Control in a Work Setting Assesses the health and injury control programs present in a work setting. Emphasis given to employee programs in health, wellness, and injury control that are effective. Field trips to work sites are included. Credit Hours: 3

PH434 - Advanced First Aid and Emergency Care Meets the needs of those in positions where advanced first aid and emergency care is required. A nationally recognized First Aid and CPR "First Responder" certification may be obtained with successful completion of the course. Purchase of first aid kits and protective equipment are necessary. Prerequisite: PH 334 or consent of instructor. Students will be required to pay a laboratory fee of $20. Credit Hours: 4

PH435 - Work Site Safety and Health Evaluation This course covers methods of inspecting and evaluating health and safety hazards at a work site including analysis of specific job assignments. It also introduces the student to injury and incident investigation techniques. The course will include hands-on work site evaluation. Credit Hours: 2

PH440 - Health Issues in Aging (Same as GRON 440) Course content includes demographic trends; physiological changes associated with aging; health care and consumer challenges; cultural differences; psychological effects of aging; housing; long-term care; retirement; care giving; and formal, informal, and community-based support systems. Credit Hours: 3

PH441 - Women's Health The course deals with a wide variety of health concerns of American women as consumers in the current health marketplace. Major categories of topics include health products, health services, and sources of health information of particular interest to women. Emphasis is also placed on current health related issues of women. The major purpose of the course is to provide a basis for informed decision-making by the female consumer. Credit Hours: 3

PH442S - Developing Vehicle Operational Skills: Driver Education Laboratory Experiences Learning activities will focus on preparing the prospective driver educator to conduct activities that develop operational skills for a novice driver. Emphasis is placed on laboratory organization and administration, maintaining a learning environment, developing laboratory instructional modules, and conducting learning experiences. Prerequisite: PH 412S. Credit Hours: 3

PH443S - Developing Classroom Skills: Driver Education Classroom Experience Learning activities will focus on preparing the prospective driver educator with the skills to teach in the driver education classroom with application to classroom organization, maintaining a safe learning environment, developing instructional modules, and conducting learning experiences. Prerequisite: PH 412S with a grade of C. Credit Hours: 3

PH445 - Advanced Driver Education Instructor Training Prepares prospective instructors of advanced driving techniques. Emphasis is placed upon safe driving practices, vehicle dynamics, emergency vehicle operation, in-car response to simulated driving emergencies, and instructional techniques. Special approval needed from the instructor. Credit Hours: 3

PH461 - Health Education Workshop A different focal theme each year; e.g., mood modifying substances, ecology, human sexuality, emotional and social health dimensions. Information, ideas, and concepts are translated into teaching-learning materials and approaches; continuing opportunity for interaction between prospective and experienced teachers. Credit Hours: 1-12

PH470S - Highway Safety as Related to Alcohol and Other Drugs Relationship between alcohol and other drugs and traffic accident causes. A review of education programs designed to minimize drug related accidents. Restricted to advanced standing or consent of instructor. Credit Hours: 3

PH471 - Public Health Instructional Strategies This course is designed for graduate students who are teaching assistants in Public Health. The purpose of the course is to enhance professional skills of those who are responsible for teaching health education, general education, and first aid. Credit Hours: 2

PH476 - Stress Management A study of the physiological, emotional and sociological stressors and their underlying mechanisms in states of disease and health. Particular emphasis is placed upon prevention and control of stress via self assessment techniques and proficiency in self control techniques such as biofeedback, autogenic training, meditation and progressive muscle relaxation. Credit Hours: 3

PH480S - Traffic and Driver Education Program Development Acquaints students with curriculum innovation, current philosophy, learning and teaching theories, and instructional designs. Students will develop learning packages and modules. Prerequisite: PH 443S or consent of instructor. Credit Hours: 3

PH484 - Preventing Violence in Educational Settings Designed to prepare educators, administrators, and other professionals to plan, implement, and evaluate violence prevention, conflict resolution, and crisis intervention programs in educational settings. Incidence/prevalence, etiology, and risk/protective factors related to youth violence will be examined. Current theories and models related to program planning and implementation will be applied to design coordinated, integrated school/community programs. Based on current research, key elements of effective curricula and other program components will be reviewed. Credit Hours: 3

PH490A - Field Experiences in Schools, Community Health Field observation, participation, and evaluation of current school or community health education or safety programs in agencies relevant to student interests. Prerequisite: all required health education courses. Special approval needed from the instructor. Credit Hours: 2-12

PH490B - Advanced Field Experience in School, Community Health or Injury Prevention Education Advanced field observation, participation and evaluation of current school or community health education or injury prevention programs in agencies relevant to student interests. Prerequisite: grade of B or better in PH 490A. Special approval needed from the instructor. Credit Hours: 2-6

PH491 - Health Teaching/Learning: School and Community Teaching and learning strategies at secondary school levels and in other community group settings. Opportunities to examine and observe a variety of educational strategies applicable to health education. Credit Hours: 3

PH496 - Industrial Hygiene Provides a background in the recognition, evaluation, and control of toxic materials and hazardous physical agents in the work environment. Special approval needed from the instructor. Credit Hours: 4

PH499 - Rx: Education in Health Care Settings Designed for members and potential members of the health care team to explore educational concepts and strategies applicable to a variety of health care settings. Includes rights and responsibilities of consumer and professional, determinants of health behavior, contrasting models of health care, communication skills, media and materials and planning, implementing and evaluating educational programs. Open to medical and dental personnel, nurses, health educators, dietitians, therapists, pharmacists, social workers, and related professionals. Credit Hours: 3

PH505 - Foundations of Public Health Knowledge This course provides an overview of the interdisciplinary field of public health. History and ongoing evolution of public health services and delivery systems in the U.S., essentials of public health practice, and federal, state, and local public health functions are considered. Emerging health problems, changing population dynamics, and global health context will be examined. Credit Hours: 3

PH506 - Communicating Public Health This course assists students in developing skills and identifying opportunities for communicating public health messages through the preparation of technical papers for public health, other health science-related, area-specific, and cross-disciplinary journals, as well as communicating other professional and lay publications. Additional skills relate to the development of press releases, letters to the editor, preparation of posters, development of oral presentations for diverse audiences, estimating readability of written materials, assessing health literacy, preparing pamphlets and other written materials, designing messages for distribution by mass media, including but not limited to social media and social marketing. Credit Hours: 3

PH507 - MPH Experiential Learning Seminar This course will introduce Master of Public Health (MPH) students to public health resource identification and utilization to understand and engage in public health fieldwork and service. MPH students will develop a professional portfolio to build upon through the tenure of the program. Credit Hours: 1

PH508 - Leadership in Public Health This course provides an overview of the core principles in Public Health Leadership. Major theories and concepts in leadership and methods for applying these to public health will be discussed. Credit Hours: 2

PH512 - Public Health Program Planning This course will present theories/models for health promotion program planning and implementation in community/public health settings. Steps to program planning, including: logic models, needs assessment, community organizing, evaluation/assessment, and social marketing will be addressed. Credit Hours: 3

PH513 - Public Health Analytics I An introduction to biostatistics; examination of theories of population projections; collection, organization, interpretation, summarization, and evaluation of data relative to public health happenings with emphasis on graphic presentation. Credit Hours: 3

PH514 - Public Health Analytics II The application of technology to engage communities and individuals in behavioral and environmental change processes. The course will focus on the use of technology to describe the magnitude of health problems and their sources; analyze risk factors; identify community strengths from which strategies may be defined and tools created to intervene, prevent problems, and promote health and well-being; and continuously evaluate, refine, and implement what works. Prerequisite: PH 513 with a grade of B or better or consent of instructor. Credit Hours: 3

PH515 - Contemporary Issues in Health-Related Fields This course is designed to expand the conceptual framework for health education research, practice, and professional development by examining contemporary issues in health and related fields. It includes reading, analyzing, interacting, and reflecting about selected critical issues and future concerns as they relate to the health education profession as well as individual, community, and societal health-related needs. Credit Hours: 3

PH520 - Special Topics/Independent Study An area of study to be determined by students in consultation with the health education faculty that goes beyond the current health education course offerings. 1-3 credits; may be repeated twice for maximum of 6 hours. Special approval needed from the instructor. Credit Hours: 1-3

PH525 - Applied Theoretical Foundations of Public Health Examines health-related motivation and behavior through the study of relevant psychological, sociological, and educational theory and research. Emphasis is on application of behavioral and behavior-change theories and constructs in designing effective health education and promotion programs. Credit Hours: 3

PH526 - Evidence-based Research and Evaluation in Public Health Introduction to research and evaluation. Includes survey and analyses of health testing and research/evaluation procedures, uses and limitations of knowledge and attitude tests, behavioral inventories, checklists, questionnaires, interviews, and other techniques. Credit Hours: 3

PH530S - Research in Traffic Safety A study of unique problems related to traffic safety and a review and evaluation of contemporary studies. Restricted to graduate standing or consent of instructor. Credit Hours: 3

PH532 - Public Health Administration: Principles and Practices This course is designed to provide a broad overview of key administrative issues in public health, including building and sustaining a public health workforce, disease control and prevention, emergency preparedness, legal issues, and financial considerations. Attention will be given to the application of management concepts and principles related to public health organizations at the national, state, and local levels. Credit Hours: 3

PH533B - Foundations of Public Health II This course will provide a broad overview of quantitative research in public health, including research designs, research questions, assumptions, limitations, data collection methods, sampling, instrument development, and data analysis and interpretation. Discussion of health-related theories/models and ethical considerations will be integrated throughout the course. Credit Hours: 4

PH536 - Professional Preparation in Public Health Considers national, state and local factors influencing professional preparation, accreditation and certification processes. Emphasis upon influences of official and non-official agencies. Historical perspective, the present status, and future directions of the profession. Credit Hours: 3

PH541 - Issues in Health Care Examination of current and continuing issues in the provision, administration, financing, and regulation of health care services. Prerequisite: PH 583 with grade of C or better or consent of instructor. Credit Hours: 3

PH550S - Current Developments in Traffic and Safety Education Current problems, trends and research studies in traffic and safety education are reviewed, critiqued and evaluated. Restricted to graduate standing or consent of instructor. Credit Hours: 3

PH555 - Research in Population Health Plan, conduct, and report on research pertaining to population health. Doctoral students in the Population Health program may take this course for up to 9 credit hours in a semester. Credit Hours: 1-9

PH555S - Traffic Safety Management Course deals with highway safety legislation and other acts related to traffic safety. Application of safety management techniques, procedures and structure of federal and state agencies are emphasized. Special approval needed from the instructor. Credit Hours: 3

PH561 - Advanced Public Health Workshop A different focal theme each year; e.g., technology and health education; coordinated school health programs; social marketing; mental health. Information, ideas and concepts are translated into teaching/learning materials and approaches; continuing opportunity for interaction between prospective and experienced health educators. Credit Hours: 1-12

PH571 - Professional Development for Teaching Assistants This course is designed to assist graduate teaching assistants to develop and improve skills necessary for performing their responsibilities. Emphasis will be placed on teaching/learning processes; classroom strategies and skill development; responding to diverse student populations; communication across the curriculum; teaching outside the classroom; identifying campus and community resources, support services, media, and technologies; evaluation and assessment. Restricted to graduate teaching assistants. Special approval needed from the instructor. Credit Hours: 3

PH583 - U.S. Health System: Organization, Delivery, and Policy This course examines dynamics and trends in organization, financing, and delivery of health care in the United States. Specific current health policy issues and the political, social, and economic forces that affect them are analyzed. Practical implications for public health professionals will be considered. Credit Hours: 3

PH585 - Global Health Issues This course is designed to introduce students to current health concerns in economically developing nations by examining socioeconomic, cultural, and political issues impacting health. Basic epidemiologic principles will be used to study disease and adverse health conditions in developing countries as well as understand and critique possible intervention strategies. Implications for health educators working in international settings will be discussed. Credit Hours: 3

PH588 - Current Issues in Environmental Health This course will address core principles and concepts of environmental health disciplines, analyze environmental factors impacting human and ecological health, and explore environmental health tools through their application to current issues of concern to government agencies. Credit Hours: 3

PH592 - Practicum in Safety and Industrial Health Students are assigned full-time to a safety agency or industry for experience in either safety or industrial health. Restricted to those specializing in safety industrial health. Special approval needed from the instructor. Credit Hours: 8

PH593 - Principles of Epidemiology in Public Health This course will present principles and practices related to the study, prevention and control of health-related conditions in the human population. Emphasis will be placed on understanding the principal concepts of epidemiology, including aspects of disease distribution, epidemiologic methods, risk assessment of disease and injury, descriptive and analytic epidemiologic methods and study designs, and application of epidemiologic data to the prevention and control of disease and injury. Format for the class will include lecture and small group seminars. Credit Hours: 3

PH597 - Seminar in Public Health Advanced graduate students discuss individual health projects and present research problems. Each will present a dissertation prospectus. The course will cross two semesters. The first semester will require class attendance. The second will require attending dissertation prospectus and defense meetings and writing individual reports. Prerequisite: PH 533B. Credit Hours: 2

PH598 - Grant Writing in Public Health Consideration is given to funding sources, proposal guidelines, procedures for support, budgetary requirements and evaluation procedures. Students examine different types of funded projects, develop a research proposal and analyze the art of grantsmanship and political action. Credit Hours: 3

PH599 - Thesis Credit Hours: 1-6

PH599A - MPH Applied Practical Experience (APE) Seminar The purpose of the MPH Applied Practice Experience Seminar is to prepare students for their applied practice experience and for a future as a public health professional. This seminar serves as one of the prerequisites for enrolling in the MPH Applied Practical Experience (PH 599B). Through this semester, students will prepare the components of the applied practice experience learning agreement. This seminar provides students with useful skills needed to complete an applied practice experience and to work in a public health or community setting. Students will have a specific topic, project(s) and/or site in mind prior to taking this course, which is typically taken in the second semester of Year 1. Prerequisite: PH 507 with a grade of B or better. Credit Hours: 1

PH599B - MPH Applied Practical Experience (APE) Master of Public Health (MPH) students will demonstrate competency attainment through applied practice experiences. All MPH students are required to complete a 240-hour experience with a community-based component. The Applied Practice Experience (APE) provides a practical experience in a public health setting where students apply skills and knowledge they gained during didactic courses to attain at least five competencies. Dual degree students have opportunities to integrate and apply their learning from both degree programs through applied practice experiences. Students meet the APE requirements by supporting the Program's mission and students' career goals, to the extent possible. Prerequisite: PH 599A with a grade of B or better. Credit Hours: 2

PH599C - MPH Integrative Learning Experience During the final semester(s) of study, students are required to complete an integrative learning experience (ILE) that demonstrates synthesis of foundational and program competencies. ILEs require two products: 1) a high-quality written product and 2) a presentation on the ILE. Prerequisite: PH 599B with a grade of B or better. Credit Hours: 3

PH600 - Dissertation Credit Hours: 1-16

PH601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or

research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

PH603 - Ph.D. Seminar in Population Health This course is a discussion of current topics and literature in Population Health. Provides a forum for PhD students and faculty presentations and review of current research efforts. Encourages integration of content knowledge to prepare for careers in the field. Restricted to admission to PhD program in Population Health or consent of instructor. Credit Hours: 1

PH699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Public Health and Population Health Faculty

Jayawardene, Wasantha, Assistant Professor, Ph.D., Indiana University, 2014; 2022.

McDaniel, Justin T., Associate Professor, Ph.D., Southern Illinois University Carbondale, 2016; 2017.

Emeriti Faculty

McDermott, Robert J., Professor, Emeritus, PhD, University of Wisconsin-Madison, 1981; 2017.

Physician Assistant Studies

The Physician Assistant (PA) graduate programs are offered through the Department of Physician Associate Medicine in the School of Medicine.

Master of Science Physician Assistant (M.S.P.A.) in Physician Assistant Studies

The physician assistant is often the first health care provider to see a patient and perform a variety of tasks, including collecting historical and physical examination data from the patient and ordering appropriate laboratory and diagnostic tests. The physician assistant synthesizes patient information and participates in formulating and executing a treatment plan to meet the patient's needs. A physician assistant can evaluate psychological aspects of a patient's health, counsel when appropriate, and teach patients about primary health problems. The physician assistant makes referrals when indicated and can perform procedures, such as EKGs, venipuncture, casting, suturing, and injections. The physician assistant prescribes medications. Graduates of the PA Program are trained as primary care providers and awarded the Master of Science in Physician Assistant Studies (M.S.P.A.) degree.

The program utilizes a problem-based learning curriculum and clinical rotations to prepare primary care physician assistants to practice medicine with physician supervision.

Admission

To be considered for the enrollment in the Physician Assistant program prospective students must have a 3.4 GPA or above on the entire last undergraduate GPA earned at the time of application, science, prerequisite GPAs and complete the program prerequisites and other requirements.

This program requires a nonrefundable $65 application fee (subject to change without notice by the SIU Board of Trustees) that must be submitted with the application for admissions to graduate study in the Physician Assistant program. We ask that you do not apply to the graduate school unless you are invited to interview.

Accepted applicants will be required to submit a nonrefundable enrollment deposit to reserve a position in the class. The deposit is due within 10 days of the program's invitation to the applicant. The deposit

will be applied to the student's Bursar account two weeks after matriculation. If an applicant, who has accepted an offer for admission, decides to drop, the enrollment deposit will not be refunded.

M.S.P.A. students will not receive the border state decrease adjustment to their tuition and fees. Therefore, all out-of-state students will pay a higher tuition rate. No advanced placement is awarded towards completion of M.S.P.A. courses, even if the applicant is licensed as a medical doctor.

Degree Requirements

Prospective students must have completed all of the following prerequisite courses before matriculation:

- Medical Terminology - one semester or proficiency
- Chemistry with labs - two semesters (select from General, Inorganic, Organic, or Biochemistry)
- Psychology - one semester
- Human Physiology - one semester (upper level preferred)
- Human Anatomy – one semester (upper level with cadaver lab preferred)
- Microbiology with lab – one semester
- General Biology for science majors, - one semester (may also select from Genetics or Cell and Molecular Biology)
- Statistics – one semester -AND-
- English Composition - one semester

All prerequisite courses must be completed by the end of the fall semester (12/31) in an application cycle. *We allow two exceptions to this: Students may complete one remaining prerequisite course (with a grade of A or B) and Medical Terminology (Pass or A/B) during the Spring semester prior to matriculation.*

Students who have completed or will soon complete a Bachelor's degree and prerequisite course requirements should contact the program's admissions advisor or consult the program website for the most current application information.

Enrollment in the M.S.P.A. program is limited and based on a competitive process. Applicants will be evaluated on the overall submitted application package, including overall, science, and prerequisite GPAs that must each be a 3.2 on a 4.0 scale, academic potential, motivation, familiarity with the PA role, oral and written communication skills, interpersonal skills, and potential for success in the SIU Carbondale M.S.P.A. program and the PA profession. Students will be selected by the Admissions Committee for an interview with a maximum of 40 being admitted to the professional sequence. The M.S.P.A. program is extremely rigorous and outside employment while in the program is discouraged.

Students selected for the professional sequence will begin study in the summer session. Those accepted into the M.S.P.A. program will be notified of acceptance by the spring semester prior to the summer of entry. The curriculum is a 26-month sequence with the first 12 months (Phase I) consisting of problem-based learning activities, basic science and clinical medicine courses, and clinical experiences. The next 14 months consist of clinical rotations with seminars (Phase II) and a summer preceptorship (Phase III). All students complete a Master's Project before graduation. During the clinical rotation phase, students may be required to relocate to other locations or Hubsites throughout Illinois and one in Southeast Missouri. More information on deadlines or other requirements can be obtained from the M.S.P.A. program's admissions advisor at: paadvisement-L@listserv.siu.edu. All courses are restricted to students in the M.S.P.A. program.

First Year Sequence (Phase I) - 54 credit hours

PA 500, PA 501, PA 502, PA 503, PA 504, PA 505, PA 506, PA 507, PA 511, PA 512, PA 513, PA 514, PA 515, PA 521, PA 522, PA 523, PA 524, PA 525, PA 531, PA 532, PA 533, PA 534, PA 535, PA 536, PA 547, PA 550, PA 599

Second Year (Phase II & Phase III) - 36 credit hours

PA 545, PA 551, PA 580, PA 581, PA 582, PA 583, PA 596, PA 599
Total - 90 credit hours

Curricular Guide

Phase I

- **Semester 1 – Summer (Unit 1) – 10 Credit Hours**
  - PA 500: Introduction to the Profession (1 CH)
  - PA 501: PBL, Unit 1 (3 CH)
  - PA 511: Pharmacology I (1 CH)
  - PA 521: Clinical Anatomy and Integrated Sciences I (2 CH)
  - PA 531: Patient Evaluation I (2 CH)
  - PA 547: Research Methods (1 CH)
- **Semester 2 – Fall (Units 2 & 3) – 22 Credit Hours**
  - PA 502 -AND- PA 503: PBL, Units 2 and 3 (3 CH each)
  - PA 506: Patient Education/Behavioral Science (1 CH)
  - PA 507: Diversity in Medical Practice (1 CH)
  - PA 512 -AND- PA 513: Pharmacology II, III (1 CH each)
  - PA 522 -AND- PA 523: Clinical Anatomy and Integrated Sciences II, III (2 CH each)
  - PA 532 -AND- PA 533: Patient Evaluation II, III (2 CH each)
  - PA 550: Clinical Mentoring - Phase I (2 CH)
  - PA 599: Master's Seminar (2 CH)
- **Semester 3 – Spring (Units 4 & 5) – 22 Credit Hours**
  - PA 504 -AND- PA 505: PBL, Units 4 and 5 (3 CH each)
  - PA 506: Patient Education/Behavioral Science (1 CH)
  - PA 514 -AND- PA 515: Pharmacology IV, V (1 CH each)
  - PA 524 -AND- PA 525: Clinical Anatomy and Integrated Sciences IV, V (2 CH each)
  - PA 534: Clinical/Procedural Skills (2 CH)
  - PA 535: ACLS/EKG (2 CH)
  - PA 536: Introduction to the Surgical Setting (1 CH)
  - PA 550: Clinical Mentoring – Phase I (2 CH)
  - PA 599: Master's Seminar (2 CH)

Phase II

- **Semester 4 – Summer – 6 Credit Hours**
  - PA 551: Clinical Mentoring – Phase II (1 CH)
  - PA 580: PBL Tutor Group – Phase II (1 CH)
  - PA 581: Clinical Rotations I (3 CH)
  - PA 599: Master's Seminar (1 CH)
- **Semester 5 – Fall – 12 Credit Hours**
  - PA 551: Clinical Mentoring – Phase II (2 CH)
  - PA 580: PBL Tutor Group – Phase II (2 CH)
  - PA 582: Clinical Rotations II (6 CH)
  - PA 599: Master's Seminar (2 CH)
- **Semester 6 – Spring – 12 Credit Hours**
  - PA 551: Clinical Mentoring – Phase II (2 CH)
  - PA 580: PBL Tutor Group – Phase II (2 CH)
  - PA 583: Clinical Rotations III (6 CH)
  - PA 599: Master's Seminar (2 CH)

Phase III

- **Semester 7 – Summer – 6 Credit Hours**
  - PA 545: Health Care Systems (3 CH)
  - PA 596: Preceptorship (3 CH)

A limited number of electives are also accepted:

PA Elective Courses:

- PA 508: Holistic Medicine (1-3 CH)
- PA 585: Independent Study (1-6 CH)

PA Continuing Enrollment:

- PA 601: (1 CH)

Used to complete the M.S.P.A. project if all other program requirements are met.

For more information on the M.S.P.A. degree offered by the Physician Assistant Program, visit our web site at: siumed.edu/paprogram or email the Program's Admissions Advisor.

Physician Assistant Studies Courses

PA500 - Introduction to the PA Profession This course is designed to provide students with an understanding of professional issues of the Physician Assistant. Students are introduced to physician assistant history, standards of quality assurance, credentialing and licensure, regulations governing practice, business issues, and contract negotiation. Students explore opportunities in professional organizations and ways to strengthen their professional development. Credit Hours: 1

PA501 - Problem Based Learning Group, Unit 1 This course is designed to focus on medical topics in cardiology and gastroenterology. Problem-based learning is utilized with emphasis on expanding the student's knowledge base, enhancing the student's clinical reasoning skills and self-directed learning, and improving interpersonal communication skills among students and patients. Limited to six to nine students per section. Credit Hours: 3

PA502 - Problem Based Learning Group, Unit 2 This course is designed to focus on internal medicine topics in respiratory medicine, dermatology, urology, and infectious disease. Problem based learning is used with emphasis on expanding the student's knowledge base, enhancing clinical reasoning skills and self-directed learning, and improving interpersonal communication skills among students and patients. Credit Hours: 3

PA503 - Problem Based Learning Group, Unit 3 This course is designed to focus on internal medicine topics in neurological and psychiatric diseases. Problem-based learned is utilized with emphasis on expanding the student's knowledge base, enhancing the student's clinical reasoning skills and self-directed learning, and improving interpersonal communication skills among students and patients. Credit Hours: 3

PA504 - Problem Based Learning Group, Unit 4 This course is designed to focus on health concerns, physiological and psychosocial issues of obstetrics, gynecology, urology, and pediatric gastroenterology. Problem based learning is utilized in expanding the student's knowledge base, clinical reasoning skills, self-directed learning, and improving interpersonal communication skills. Credit Hours: 3

PA505 - Problem Based Learning Group, Unit 5 This course is designed to focus on medical topics related to endocrinology, renal disease, and metabolism. Problem-based learning is utilized with emphasis on expanding the student's knowledge base, enhancing the student's clinical reasoning skills and self-directed learning, and improving interpersonal communication skills among students and patients. Credit Hours: 3

PA506 - Behavioral Science/Patient Education This course explores behavioral science and patient education as it applies to the practice of medicine, as well as maintenance of health and prevention of illness. Credit Hours: 1

PA507 - Diversity in Medical Practice Students examine issues that arise when delivering medical services to persons of diverse cultures, ethnicity, race, sexual orientation, gender, and socioeconomic

status. Implications for providing medical services to persons who have experienced discrimination and disadvantage will be discussed. Credit Hours: 1

PA508 - Holistic Medicine This course is designed to explore the current research, practice and applications of Mind-Body-Spirit Medicine (MBSM). Students will explore the use of various techniques for use in clinical and therapeutic settings as well as for maintaining their own personal health. Credit Hours: 1

PA511 - Pharmacology I This course introduces students to the therapeutic agents most commonly used for treatment of disorders of the cardiovascular and gastrointestinal systems. The practical aspects of dosage, schedules, therapeutic effect, adverse reactions, metabolism, mechanism of action and excretion are investigated. Credit Hours: 1

PA512 - Pharmacology II This course introduces students to the therapeutic agents most commonly used involving the pulmonary and integumentary systems, as well as those medications used in infectious disease. The practical aspects of dosage, schedules, therapeutic effect, adverse reactions, metabolism, method of action and excretion are investigated. Credit Hours: 1

PA513 - Pharmacology III This course introduces students to the therapeutic agents most commonly used in neurology and psychiatry. The practical aspects of dosage, schedules, therapeutic effect, adverse reactions, metabolism, method of action and excretion are investigated. Credit Hours: 1

PA514 - Pharmacology IV This course introduces students to the therapeutic agents most commonly used in practice involving pregnancy, neonates, infants, sexually transmitted diseases, menopause, and prostate disorders. The practical aspects of dosage, schedules, therapeutic effect, adverse reactions, metabolism, method of action and excretion are investigated. Credit Hours: 1

PA515 - Pharmacology V This course introduces students to the therapeutic agents most commonly used in treating diabetes, thyroid disorders, renal disease, and fluid disorders. The practical aspects of dosage, schedules, therapeutic effect, adverse reactions, metabolism, method of action and excretion are investigated. Credit Hours: 1

PA521 - Clinical Anatomy and Integrated Sciences I This course involves the study of anatomical structures with cadaveric materials, clinical applications, physiology and pathophysiology of selected systems. Radiology, microscopy, and embryology issues will be included. Credit Hours: 2

PA522 - Clinical Anatomy and Integrated Sciences II This course involves the study of anatomical structures with cadaveric materials, clinical applications, physiology and pathophysiology of selected systems. Radiology, microscopy, and embryology issues will be included. Credit Hours: 2

PA523 - Clinical Anatomy and Integrated Sciences III This course involves the study of anatomical structures with cadaveric materials, clinical applications, physiology and pathophysiology of selected systems. Radiology, microscopy, and embryology issues will be included. Credit Hours: 2

PA524 - Clinical Anatomy and Integrated Sciences IV This course involves the study of anatomical structures with cadaveric materials, clinical applications, physiology and pathophysiology of selected systems. Radiology, microscopy, and embryology issues will be included. Credit Hours: 2

PA525 - Clinical Anatomy and Integrated Sciences V This course involves the study of anatomical structures with cadaveric materials, clinical applications, physiology and pathophysiology of selected systems. Radiology, microscopy, and embryology issues will be included. Credit Hours: 2

PA531 - Patient Evaluation I This course is designed to prepare the Physician Assistant student in taking a patient history and performing portions of the physical exam. Interview and communication skills, medical terminology, and recording patient information are also explored. Credit Hours: 2

PA532 - Patient Evaluation II This course is designed to build on student's knowledge of pertinent physical exam skills, and increase knowledge regarding the medical history and clinical procedures. Students continue to improve skills in areas of the patient interview, medical terminology, and recording patient information. Credit Hours: 2

PA533 - Patient Evaluation III This course is designed to build on students' knowledge of physical exam skills, introduce new systems, and improve skills in areas of the patient interview, medical terminology, and recording patient information. Credit Hours: 2

PA534 - Clinical Procedural Skills Students develop and expand their skills in performance of clinical procedural skills needed for competency in office and hospital-based practice. Topics will include central line placement, IV therapy, EKG, lumbar puncture, venipuncture, casting, suturing, and thoracentesis. Credit Hours: 2

PA535 - EKG and Advanced Cardiac Life Support (ACLS) EKG/ACLS is designed to provide the knowledge and skills needed to read EKGs and to evaluate and manage the first ten minutes of an adult ventricular fibrillation/tachycardia arrest. Students learn to manage ten core ACLS cases, a respiratory emergency, four types of cardiac arrest, four types of pre-arrest emergencies, and stroke. Credit Hours: 2

PA536 - Introduction to the Surgical Setting During this course, the student will be exposed to the various aspects of the general surgical setting. Fundamentals to be introduced include pre- and post-operative care, sterile technique, gowning and gloving, and the identification of surgical instruments. Credit Hours: 1

PA545 - Health Care Systems This course is designed to cover the following topics: delivery of health care, standards of care and guidelines as they affect practice issues, cost and effectiveness, economics of health care, insurance and health care, indigent medical care, the health workforce, access to care, health policy, and technology (electronic medical records, email, telemedicine). Credit Hours: 3

PA547 - Research Methods and Evidence Based Medicine (EBM) This course focuses on scientific inquiry within the Physician Assistant practice, covering the application of basic research methodology including problem formation, research designs, sampling, measurement, data analysis technical writing and dissemination of research results, and research ethics. Students will also focus on developing evidence-based medicine (EBM) skills. Credit Hours: 1-4

PA550 - Clinical Mentoring - Phase I Students gain clinical experience in the community setting by participating in a one-half day per week continuity clinic in Family Medicine with a designated mentor. Students register for this course during the first fall semester of the program. They register again for this course in the spring semester, until Phase II. Credit Hours: 1-2

PA551 - Clinical Mentoring - Phase II Students continue to gain clinical experience in the community setting by participating in a one-half day per week continuity clinic in Family Medicine with a designated mentor. Students register for this course during the second summer semester of the program. They register again for this course in subsequent semesters, until the Preceptorship. Maximum hours per term are 2. Credit Hours: 1-2

PA580 - Problem Based Learning (PBL) Group Phase II Phase II students participate in a one-half day per week problem based learning tutor group, in which they engage in the Barrowsian method of problem-based learning at respective Hubsites. This course is designated to foster independence in clinical reasoning and knowledge synthesis by working through patient problems, as well as improving the application of knowledge to clinical practice. Credit Hours: 1-2

PA581 - Clinical Rotations I This is the first (summer semester) in a three course sequence of supervised clinical experience in a variety of settings and nine specialty areas. Credit Hours: 3

PA582 - Clinical Rotations II This is the second course (fall semester) in a three course sequence of supervised clinical experience in a variety of settings and nine specialty areas. Credit Hours: 6

PA583 - Clinical Rotations III This is the third course (spring semester) in a three course sequence of supervised clinical experience in a variety of settings and nine specialty areas. Credit Hours: 6

PA585 - Independent Study Directed independent study in selected areas of Physician Assistant studies. Credit Hours: 1-6

PA596 - Preceptorship The eight week preceptorship simulates the role of the Master's prepared graduate Physician Assistant, with supervision by the clinical preceptor. This is generally completed in a primary care area of medicine. Credit Hours: 3

PA599 - Master's Seminar This is a longitudinal course taken over several semesters in which students work on proposal design, development, construction, research, writing, and project presentation. The Master's Seminar culminates in defense of a Grand Rounds Presentation, Community Project Presentation, or a published Problem-Based Learning Module and Tutor Guide. Restricted to Physician Assistant majors. Credit Hours: 1-8

PA601 - Continuing Enrollment For graduate students who have not completed the program and are in the process of their Master's Project. The student must have completed all other program requirements to be eligible to register for this course. Concurrent enrollment in any other courses is not permitted. S/U or DEF grades only. Prerequisite: Completion of all Program coursework except PA 599. Credit Hours: 1

Physician Assistant Studies Faculty

Master of Science Physician Assistant (M.S.P.A.) in Physician Assistant Studies Faculty

Arnold, Angela, Assistant Professor of Family and Community Medicine, Doctor of Medical Science, PA-C, Southern Illinois University Carbondale, 2022; 2022.

Barke, Halley, Assistant Professor of Family and Community Medicine and Director of Clinical Education-Physician Assistant Program, Doctor of Medical Science, PA-C, Southern Illinois University Carbondale, 2022; 2017.

Bueza, Jesse Paul, Assistant Professor of Family and Community Medicine, Doctor of Medical Science, PA-C, Southern Illinois University Carbondale, 2022; 2023.

Diemer, Donald, Professor and Chair, Department of Physician Associate Medicine, Doctor of Health Sciences, PA-C, A.T. Still University, 2011; 2011.

Diemer, Joeli, Assistant Professor of Family and Community Medicine and Academic Coordinator, Doctor of Medical Science, PA-C, Southern Illinois University Carbondale, 2023; 2021.

Hagerman, Daniel, Assistant Professor of Family and Community Medicine, Doctor of Medical Science, PA-C, Southern Illinois University Carbondale, 2022; 2019.

Henson, Macy, Assistant Professor of Family and Community Medicine, Doctor of Medical Science, PA-C, Southern Illinois University Carbondale, 2018; 2019.

Ledbetter, Courtney, Assistant Professor of Family and Community Medicine, Doctor of Medical Science, PA-C, Southern Illinois University Carbondale, 2022; 2020.

McLain, Deedra, Assistant Professor of Family & Community Medicine and Medical Director, MD, Southern Illinois University, 1999; 2020.

Reaney (Wittnam), Amanda, Assistant Professor of Family and Community Medicine, Doctor of Medical Science, PA-C, Southern Illinois University Carbondale, 2022; 2018.

Reichert, Rob, Instructor of Family and Community Medicine, Doctor of Pharmacy, RPh, St. Louis College of Pharmacy, 2011; 2015.

Schloemann, L. Kristen, Assistant Professor of Family and Community Medicine, MSPA, PA-C, Southern Illinois University Carbondale, 2012; 2020.

Scott, M. Kate, Associate Professor and Program Director, Physician Assistant Studies, Doctor of Medical Science, PA-C, University of Lynchburg, 2021; 2016.

Waldyke, Kathryn, Assistant Professor of Family and Community Medicine, M.D., Michigan State University, 1990; 2011.

Physics and Applied Physics

The School of Physics and Applied Physics offers graduate programs leading to the Master of Science degree with a major in Physics and to the Doctor of Philosophy degree in Applied Physics.

This program requires a $65 application fee that must be submitted with the application for Admissions to Graduate Study in Physics. Applicants must pay this fee by credit card.

Master of Science (M.S.) in Physics

Requirements

In order to be considered for admission into the M.S. in Physics program, students must have a baccalaureate degree in Physics or equivalent. The applicant must have earned a grade point average (GPA) of 2.70 or better (A=4.00) on the entire last undergraduate GPA earned at the time of application. Applicants for admission to the M.S. in Physics program are strongly encouraged to submit GRE scores together with other application materials.

In addition to the general requirements of the Graduate School for the M.S. in Physics degree, the student must complete PHYS 500A (or mathematics equivalent), PHYS 510, PHYS 520A, PHYS 520B, and PHYS 530A, PHYS 530B.

For the M.S. in Physics, a thesis is required, based upon not more than six nor less than three hours of PHYS 599-level credit. The PHYS 599 credit requirement is in addition to the minimum 15-credit hour requirement at the 500 level as stated in this catalog and should be distributed preferably over several terms of enrollment.

Each candidate for an M.S. in Physics degree is required to pass an examination, written or oral or both, covering graduate work including the thesis; the examination is administered by the student's thesis committee.

Each candidate for an M.S. in Physics degree is required to earn one credit in PHYS 581 by lecturing in the graduate seminar. An oral thesis defense satisfies this requirement.

Non-Thesis/Research Paper Option

In order to be considered for admission into the M.S. in Physics Non-Thesis Option program, students must have a baccalaureate degree in Physics, or equivalent.

In addition to the general requirements of the Graduate School for the M.S. in Physics Non-Thesis Option degree, the student must complete PHYS 425, PHYS 450, PHYS 500A (or mathematics equivalent), PHYS 510, PHYS 520A, PHYS 520B and PHYS 530A. Those students enrolled in the M.S. in Physics Non-Thesis Option who have taken PHYS 425 and/or PHYS 450 as part of their undergraduate curriculum may replace those courses with any other 500-level course (after consulting with their respective advisory committee).

An advanced experimental or computational, or theoretical project resulting in a research paper is required, based upon not less than four credit hours of PHYS 598. The research paper has to be completed by the end of the second year in the program. It should be written as a standard scientific text (i.e., with appropriate referencing), and it should be between 15 and 20 pages in length. The research paper should explain in detail the project undertaken by the student enrolled in the M.S. in Physics Non-Thesis Option and must contain background and motivation (with proper literature review), and problem statement and goals of the project, results, a discussion related to the work undertaken in accomplishing the goals and objectives, conclusions and plans for future work. The style that should be used is that appropriate for a manuscript submitted to Physical Review.

Further, it is also noted that the outcome of the project (in the form of the research paper) has to be approved by the student's advisory committee. Once the research paper is approved, an electronic version of the research paper must be filed in the Graduate School by submission at Open SIU.

Other specific requirements for the M.S. in Physics Non-Thesis Option are as follows: Each candidate for an M.S. in Physics Non-Thesis Option degree is required to have a CGPA of 3.0 (in 4.0 scale) throughout the program.

Doctor of Philosophy (Ph.D.) in Applied Physics

Program Description and Objectives

The School of Physics and Applied Physics offers a graduate program at the doctoral level leading to the Ph.D. in Applied Physics. The Applied Physics doctoral program is designed to provide advanced studies both in the application of the concepts and methods of physics to various research areas, including: materials, nanoscience and nanotechnology, quantum computing, quantum error correction, quantum optics and information, computational materials physics, biomedical physics, condensed matter physics, magnetism, thin films, and in the application of the methods and techniques of physics to the study of industrial processes and products. The Ph.D. in Applied Physics provides students with broad, in-depth knowledge of the fundamentals of those areas of physics relevant to applications, as well as with advanced specialized knowledge in applied areas. The ultimate goal of this program is to produce graduates that are competent scientific researchers in Applied Physics, i.e., researchers that are capable of initiating and completing an independent investigation in a specific sub-field of Applied Physics. The graduates of this program will be able to fill the needs of academia, industry and government in the area of Applied Physics.

Admissions

Applicants will be admitted into the Ph.D. in Applied Physics following one of three routes:

1. **Direct admission**: this option requires the applicant to have completed a Bachelor's degree in Physics (or its equivalent) with a grade point average of at least 3.25 (in exceptional cases, the School may solicit the Graduate School to waive this requirement).
2. **Accelerated admission**: students are admitted into the Master's degree program and after one semester they can be considered for admission into the doctoral program if they show exceptional research potential and have accumulated a GPA of 3.25.
3. **Regular admission**: for students who have completed a M.S. in Physics or equivalent and have accumulated a GPA of 3.25 in graduate level courses (in exceptional cases, the School may solicit the Graduate School to waive this requirement). The students obtaining their M.S. in Physics at SIUC will have satisfied most of the core course requirements for the Ph.D. in Applied Physics.

All applicants for admission to the doctoral program in Applied Physics must submit Graduate Record Examination (GRE) scores together with other required application materials.

Course Requirements

In addition to the general requirements of the Graduate School, the student must complete a sequence of Required Basic Core Courses, and Elective Courses that includes:

Required Basic Core Courses

- PHYS 500A: Mathematical Methods in Physics (3 CH)
- PHYS 510: Classical Mechanics (3 CH)
- PHYS 520A, PHYS 520B: Electromagnetic Theory (6 CH)
- PHYS 530A, PHYS 530B: Quantum Mechanics II (6 CH)

In addition, students are required to complete one additional course (3 CH only) from those in the following list:

Elective Courses

- PHYS 550: Computational Physics (3 CH)

- PHYS 545A: Statistical Mechanics II (3 CH only)
- PHYS 565A: Solid State Physics II (3 CH only)
- SCI 501A, SCI 501B: Research Transmission Electron Microscopy (4 CH)
- SCI 502A, SCI 502B: Research Scanning Electron Microscopy (4 CH)
- PHYS 575: Special Topics in Physics: Magnetism and Magnetic Materials (1 to 4 CH)
- PHYS 575: Special Topics in Physics (1 to 4 CH)
- PHYS 575: Special Topics in Physics: Spectroscopy of Materials (1 to 4 CH)
- PHYS 575: Special Topics in Physics: Surface Science (1 to 4 CH)
- PHYS 575: Special Topics in Physics: Quantum Computing (1 to 4 CH)
- PHYS 575: Special Topics in Physics: Hybrid Materials (1 to 4 CH)
- PHYS 575: Special Topics in Physics: Advanced Optics (1 to 4 CH)

The following courses are not allowed to count as electives: PHYS 599 (Thesis), PHYS 600 (Dissertation), and PHYS 601 (Continuing Enrollment).

Starting no later than the beginning of the third semester in the program, students will be required to enroll for two consecutive semesters in PHYS 570, a 3-credit hour per semester Special Project course.

In addition to the above-described coursework, while working on their dissertation, the students must complete 24 credit hours of PHYS 600 (Dissertation) in no less than two academic years of full-time work.

Admission to Candidacy

To be admitted to candidacy, the prospective doctoral candidate must satisfactorily complete the Qualifying Procedure. The Qualifying Procedure includes:

1. Three written examinations
2. A research proposal
3. The student's performance in Required Basic Core courses
4. The recommendation of the research advisor (if the student has a research advisor).

1. Three written examinations:

The students will take three written exams. The exams are chosen by the student from the following five possible topics: Quantum Mechanics, Classical Mechanics, Statistical Mechanics, Electromagnetic Theory and Solid State Physics.

The students will have to select three out of the five exams to take (i.e., they will not be allowed to pick the best three out of four or five).

The students will have to pass the three exams, as evaluated and determined by the Graduate Committee.

These written exams will be prepared at the undergraduate level. That is, at a level that is consistent with the corresponding courses at the 200-, 300-, 400- level at SIUC.

The level will be specified by the corresponding textbooks used in these courses at SIUC.

For Classical Mechanics, Halliday and Resnick (or equivalent) specifies the 200- level and Symon or Thornton and Marion specifies the 300- and 400- level;

For E+M Theory, Halliday and Resnick (or equivalent) specifies the 200- level and Lorrain and Corson, or Griffiths or equivalent specifies the 300- and 400- level;

For Statistical Mechanics, at the 400-level only, "Thermal Physics" by Kittel and Kroemer specifies the level;

For Quantum Mechanics at the 300-level "Modern Physics" by Serway, Moser, and Moyer or equivalent, specifies the level, and "Introduction to Quantum Mechanics" (Second Edition), by David J. Griffiths specifies the 400 level.

For Solid State Physics, at the 400-level, only "Introduction to Solid State Physics" by Kittel specifies the level.

The written exams will consist of a set of questions from which the students will get to choose a subset that they will answer. Where it is applicable (i.e., for Classical Mechanics, E+M and Quantum), some of the questions will be at the 200- level and others at the 300- and 400- level.

The written exams will be held one per day over the course of a week.

2. A written research proposal:

The research proposal has to be completed by the end of the second year in the program.

It should be written as standard scientific text (i.e., with appropriate referencing), and it should be between 10 and 15 pages in length.

The style that should be used is that appropriate for a manuscript submitted to Physical Review.

3. Course performance:

The course performance of the student in the required classes for the program has to be completed. (Must have a grade point average of 3.25 (out of 4) in the basic core curriculum in Applied Physics).

4. Research:

If the student is engaged in research by the end of the first year in the program, the recommendation of the research advisor pertaining to research progress.

General Considerations

Students are expected to have completed the Qualifying Procedure by the end of the fourth semester in the doctoral program.

Students are required to take the exam at the end of their first Spring semester in the program.

The written exam portion of the Qualifying Procedure will be prepared and administered by an examination committee appointed by the Chair.

The written exam portion of the Qualifying Procedure will be held on a yearly basis, generally in early August.

Students will be allowed to participate in the exam portion of the qualifying procedure twice. The one exception to the above rule is that students who so desire can have a “free trial” at the Qualifying Examination by taking it at the beginning of their first semester in the program without this instance counting as one of the two allowed opportunities to take the exam. Students are encouraged to attempt the written exam portion of the Qualifying Procedure as early as the beginning of their first semester in the program in order to make use of the free option.

Students will be allowed to change one exam area (of the three) per each time they take the exams. This adds up to a maximum total of two changes, if the student takes the exams in the free trial. Note that what is limited to two times (or to three times, if the student takes advantage of the free trial) is the number of times the student can participate in the qualifying exam procedure; i.e. it is not that the student can repeat two times each individual exam. The students can participate in the exam process twice (or three times with the free trial) and must pass three exams at the end of their tries.

Those students who start at SIUC in the Spring semester will have their free trial at the beginning of the following Fall; they will be required to take this free trial.

Students who complete the M.S. in Physics degree at SIUC and then proceed to the Ph.D. in Applied Physics will be considered as incoming doctoral students for the purpose of the free trial exam. They will, however, be required to take this free trial.

Those students who begin at SIUC in the Fall can have their free trial only in the Fall in which they start.

The Graduate Committee will evaluate all four points of the Qualifying Procedure for each student applicant and will decide on admission to candidacy for each applicant. The Graduate Committee will decide on what weight will be given to the different portions of the Qualifying Procedure.

Upon successful completion of the Qualifying Procedure, the School will request the Graduate School to admit the student to candidacy for the doctoral degree, once the applicant has completed the required 24 credit hour residency period.

Dissertation Committee and Dissertation Examination

No later than six months after admission to candidacy, the student will request the appointment of a dissertation committee to supervise the student's dissertation. This committee will include five faculty members, with at least one from outside the School of Physics and Applied Physics, at least one doing research in theoretical physics, and at least one doing research in experimental physics. The majority of the committee shall consist of faculty members from the School of Physics and Applied Physics. The committee will be chaired, in most cases, by the student's dissertation supervisor. The committee will meet within two months after its formation to determine if any specific coursework, beyond the core curriculum, is to be required of the student, and to determine if any special requirements might be appropriate for the student's particular research area. At this time (i.e., no later than eight months after admission to candidacy), the committee will be given a formal, written dissertation proposal and an oral presentation on the proposed research by the student.

Dissertation Defense

Upon completion of a dissertation demonstrating the student's ability to conduct independent research, the dissertation committee will administer a final oral examination. This oral examination shall consist of a defense of the dissertation. Upon the satisfactory completion of both the dissertation and the final examination, the committee will recommend the student for the doctoral degree.

Physics and Applied Physics Courses

PHYS420 - Electricity and Magnetism II Induced electromotive force, quasisteady currents and fields, Maxwell's equations, electromagnetic waves and radiation, with applications. Prerequisite: PHYS 320 with grade of C or better. Credit Hours: 3

PHYS424 - Electronics for Scientists Coordinated two-hour lecture and four-hour laboratory study of electronics. Emphasis is on overall modern electronics and its applications in the experimental research laboratory setting. Topics include DC and AC circuit theory, measurement techniques, semiconductor active devices, operational amplifiers and feedback, digital circuits, Boolean algebra, microprocessors and large scale integration, digital to analog/analog to digital conversion, and data acquisition. Prerequisite: PHYS 203B or 205B and MATH 111 with a grade of C or better. Credit Hours: 4

PHYS425 - Solid State Physics I Structure of a crystalline solid; lattice vibrations and thermal properties; electrons in metals; band theory; electrons and holes in semiconductors; opto-electronic phenomena in solids; dielectric and magnetic properties; superconductivity. Prerequisite: PHYS 310, 320, and 430 with grade of C or better. Credit Hours: 3

PHYS428 - Modern Optics and Lasers Properties of electromagnetic waves in space and media, polarization and interference phenomena and devices, electro- and magneto-optic effects, optical gain, and lasers. Prerequisite: PHYS 420 with grade of C or better. Credit Hours: 3

PHYS430 - Quantum Mechanics I An introduction to quantum phenomena, wells, barriers, Hydrogenic atoms, angular momentum and identical particles. Prerequisite: PHYS 305, 310, and 320 with a grade of C or better. Prior or concurrent enrollment in PHYS 420 is desirable. Credit Hours: 3

PHYS431 - Atomic and Molecular Physics I Atomic spectra and structure; molecular spectra and structure. Prerequisite: PHYS 430 with a grade of C or better. Credit Hours: 3

PHYS432 - Nuclear Physics I Basic nuclear properties and structure; radioactivity, nuclear excitation, and reactions, nuclear forces; fission and fusion. Prerequisite: PHYS 305 with a grade of C or better. Credit Hours: 3

PHYS440 - Applications of Quantum Mechanics Applications of quantum mechanics to include time-independent and time-dependent perturbation theory, variational methods, introduction to solid-state physics and materials. Prerequisite: PHYS 430 with grade of C or better. Credit Hours: 3

PHYS445 - Thermodynamics and Statistical Mechanics Laws of thermodynamics; Principles and Applications of Classical and Quantum Statistical Mechanics; Introduction to Phase Transitions. Prerequisites: PHYS 305 and PHYS 301 both with a grade of C or better; MATH 251 with a grade of C or better. Credit Hours: 3

PHYS450 - Advanced Laboratory Techniques Introduces students to experimental research and encourages them to develop and carry out experiments. Prerequisite: PHYS 305 and PHYS 355 with a grade of C or better. Lab fee: $50. Credit Hours: 3

PHYS458 - Laser and Optical Physics Laboratory Properties of laser beams and resonators, fluorescence and two photon spectroscopy, diffraction, Fourier transformation and frequency filtering, electro- and magneto-optic modulation, fiber propagation and related experiments. Prerequisite: PHYS 428 with grade of C or better. Credit Hours: 2

PHYS470 - Special Projects Each student chooses or is assigned a definite investigative project or topic. Prerequisite: PHYS 310, 320 or consent of instructor. Credit Hours: 1-3

PHYS475 - Special Topics in Physics These courses are advanced special topics in physics designed to enable undergraduate and graduate students to become well-versed in a particular and current research area of physics with the intention of preparing them for future research and/or industrial applications. They are offered as the need arises and interest and time permit. Students are required to give presentations. Special approval needed from the instructor. Credit Hours: 3-6

PHYS476B - Introduction to Biological Physics This course provides an introduction to how physics principles and techniques are applied to study and describe complex and emergent processes found at the biological and biomolecular level. This course combines several topics not usually covered in standard undergraduate science courses to qualify and quantify cell structure, mechanics, dynamics, self-assembly, and biological functionality. Prerequisites: Two semesters of an introductory physics sequence (PHYS 203A,B or PHYS 205A,B) with minimum grades of C, MATH 150 or concurrent enrollment. Credit Hours: 3

PHYS476C - Introduction to Computational Physics This course provides foundational knowledge in the usage of computers for solving natural problems in different types of physical systems. The class will give a thorough understanding of various numerical techniques such as interpolating/extrapolating data, integrating ordinary and partial differential equations, and solving linear algebra problems. Students will be guided to write programs for solving several applied physics problems in classical and modern physics. A brief survey of High Performance Computing will also be presented giving students a working knowledge of scientific computing. Prerequisites: Two semesters of an introductory physics sequence (PHYS 203A,B or PHYS 205A,B), with minimum grades of C and concurrent enrollment in PHYS 305. PHYS 301, PHYS 310 and PHYS 320 are not required but recommended. Credit Hours: 3

PHYS476M - Introduction to Materials Science and NanoPhysics This course will serve as an introductory course in Materials Science and Nanoscale Physics. Topics to be covered include: The need for studying Materials Science, classification of materials, advanced concepts in materials manufacturing, modern materials, nanoscale materials, electrical, thermal, magnetic and optical properties of materials, tailoring materials for application development, Techniques of Materials characterization, Nanomaterials and Nanotechnology, and Societal Impact. Prerequisites: Two semesters of an introductory physics sequence (PHYS 203A,B or PHYS 205A,B), with minimum grades of C, MATH 150 or concurrent enrollment. Credit Hours: 3

PHYS476Q - Quantum Entanglement This course provides an introduction to the theory of quantum entanglement and its use in quantum information science, especially for the task of communication. Topics include quantum teleportation, entanglement measures, and nonlocality. Prerequisite: MATH 221 with a grade of C or better. Credit Hours: 3

PHYS500A - Mathematical Methods in Physics Vector spaces and operators in physics. Hilbert spaces and complete orthonormal sets of functions. Elements and applications of the theory of analytic functions. Methods for the solution of partial differential equations of physics. Credit Hours: 3

PHYS500B - Mathematical Methods in Physics Vector spaces and operators in physics. Hilbert spaces and complete orthonormal sets of functions. Elements and applications of the theory of analytic functions. Methods for the solution of partial differential equations of physics. Credit Hours: 3

PHYS510 - Classical Mechanics Generalized coordinates and forces. Lagrangian, Hamiltonian, and variational formulations of mechanics. Noether's Theorem. Central forces, oscillations. Credit Hours: 3

PHYS520A - Electromagnetic Theory Determination of static, electrostatic, and magnetostatic fields. Microscopic and macroscopic theory of insulators and conductors. Maxwell's equations; radiation, propagation and scattering of electromagnetic waves. Electrodynamics and special theory of relativity. Selected topics. Credit Hours: 3

PHYS520B - Electromagnetic Theory Determination of static, electrostatic, and magnetostatic fields. Microscopic and macroscopic theory of insulators and conductors. Maxwell's equations; radiation, propagation and scattering of electromagnetic waves. Electrodynamics and special theory of relativity. Selected topics. Credit Hours: 3

PHYS530A - Quantum Mechanics II Basic principles; the harmonic oscillator and the hydrogen atom; scattering; approximation and perturbation methods; spin, statistics. Credit Hours: 3

PHYS530B - Quantum Mechanics II Basic principles; the harmonic oscillator and the hydrogen atom; scattering; approximation and perturbation methods; spin, statistics. Credit Hours: 3

PHYS531A - Advanced Quantum Mechanics Quantum theory of radiation; applications of field theory to elementary particles; covariant quantum electrodynamics; renormalization; special topics. Content varies somewhat with instructor. Prerequisite: PHYS 530. Special approval needed. Credit Hours: 3

PHYS535A - Atomic and Molecular Physics II Recent experimental methods in atomic and molecular spectroscopy with applications. Detailed quantum mechanical and group theoretical treatment of atomic and molecular systems. Reactions between atomic systems. Special approval needed from the instructor. Credit Hours: 3

PHYS545A - Statistical Mechanics II Principles of classical and quantum equilibrium statistics; fluctuation phenomena; special topics in equilibrium and non-equilibrium phenomena. Credit Hours: 3

PHYS545B - Statistical Mechanics II Principles of classical and quantum equilibrium statistics; fluctuation phenomena; special topics in equilibrium and non-equilibrium phenomena. Credit Hours: 3

PHYS550 - Computational Physics Using modern computers to solve physics problems. Integration of ordinary and partial differential equations, interpolation and extrapolation, finite element analysis, linear and nonlinear equations, eigensystems, optimization, root finding, Monte Carlo simulations, etc. Credit Hours: 3

PHYS560A - Nuclear Physics II Fundamental properties and systematics of nuclei, scattering theory, nuclear two-body problem, nuclear models, nuclear many-body problem, electromagnetic properties of nuclei, radioactivity, nuclear reactions. Prerequisite: PHYS 530. Special approval needed from the instructor. Credit Hours: 3

PHYS565A - Solid State Physics II Fundamental concepts in solid state physics. Lattice vibrations, band theory of solids, the Fermi surface, dynamics of electrons. Transport, cohesive, optical, magnetic and other properties of solids. Special approval needed from the instructor. Credit Hours: 3

PHYS565B - Solid State Physics II Fundamental concepts in solid state physics. Lattice vibrations, band theory of solids, the Fermi surface, dynamics of electrons. Transport, cohesive, optical, magnetic and other properties of solids. Special approval needed from the instructor. Credit Hours: 3

PHYS570 - Special Projects in Physics Each student works on a definite investigative topic under the supervision of a faculty sponsor. The projects are taken from the current research in the department. Resourcefulness and initiative are required. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-9

PHYS575 - Special Topics in Physics The courses reflect special research interests of the faculty and current developments in physics. They are offered as the need arises and interest and time permit. Students are required to give presentations. Special approval needed from the instructor. Credit Hours: 1-4

PHYS576A - Introduction to Astrophysics This course provides an introduction to the modern scientific study of the universe. The laws of physics will be used to explore a wide range of astrophysical processes, including comparative planetology, orbital dynamics, stellar evolution, and cosmology. Credit Hours: 3

PHYS581 - Graduate Seminar Lectures on special topics by students, faculty, or invited scholars; participation is required of all graduate students. For credit each student may present a seminar in the form of a lecture on a theoretical or experimental topic, a demonstration experiment or apparatus critique. Graded S/U only. Credit Hours: 1

PHYS598 - Research Maximum credit 50 hours. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-9

PHYS599 - Thesis Credit Hours: 1-6

PHYS600 - Dissertation Minimum 24 credit hours required for Ph.D. degree. Special approval needed from the instructor. Credit Hours: 1-30

PHYS601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

PHYS699 - Postdoctoral Research One credit hour per semester. Concurrent enrollment in any other course is not permitted. Must be a Postdoctoral Fellow. Credit Hours: 1

Physics and Applied Physics Faculty

Brevik, Corinne, Associate Professor and Undergraduate Advisor, Physics, Ph.D., University of Colorado, Boulder, 2004; 2022, Astrophysics and Planetary Science, Heliophysics, Light Pollution, Physics and Astronomy Education.

Byrd, Mark, Professor, Physics, Ph.D., University of Texas at Austin, 1999; 2003. Theoretical quantum computation and quantum error correction.

Jayasekera, Thushari, Associate Professor, Physics, Ph.D., University of Oklahoma, Norman, 2005; 2011. Engineering electron structure, electron transport, and heat transport in low-dimensional nanostructures for device applications.

Lee, Bumsu, Assistant Professor, Physics, Ph. D., Rutgers, The State University of New Jersey, 2012; 2019. Quantum optics and experimental condensed matter physics for solid-state quantum materials.

Mazumdar, Dipanjan, Associate Professor, Physics, Ph.D., Brown University, 2008; 2014. Condensed matter experiment, materials physics, electronic properties of novel materials and heterostructures, emphasis on exploring the interplay between spin, charge, lattice and orbital degrees of freedom.

Oh, Sangchul, Assistant Professor, Physics, Ph. D., Pohang University of Science and Technology, 1996; 2023. Quantum computing, quantum information science, quantum machine learning, artificial intelligence, and theoretical physics.

Sivakumar, Poopalasingam, Associate Professor, Physics, Ph.D., University of Oklahoma, 2009; 2015. Soft condensed matter experiments, biophysics, laser spectroscopy and optical physics of biomolecules.

Talapatra, Saikat, Professor and Chair of Physics, Ph.D., Southern Illinois University, Carbondale. 2002; 2007. Condensed matter experiment, materials physics, nanoscale materials and structures, electronics and photo electronics, energy storage/conversion in nanomaterials, interdisciplinary nanotechnology.

Emeriti Faculty

Ali, Naushad, Professor, *Emeritus*, Physics, Ph.D., University of Alberta, Canada, 1984; 1986.

Cutnell, John D., Professor, *Emeritus*, Physics, Ph.D., University of Wisconsin, 1967.

Gruber, Bruno J., Professor, *Emeritus*, Physics, Ph.D., University of Vienna, Austria, 1962.

Henneberger, Walter C., Professor, *Emeritus*, Physics, Ph.D., Gottingen University, Germany, 1959.

Johnson, Kenneth W., Professor, *Emeritus*, Physics, Ph.D., Ohio State University, 1967.

Malhotra, Vivak, Professor, *Emeritus*, Physics, Ph.D., Indian Institute of Technology, Kanpur, 1978.

Masden, J. Thomas, Associate Professor, *Emeritus*, Physics, Ph.D., Purdue University, 1983.

Migone, Aldo D., Professor, *Emeritus*, Physics, Ph.D., Pennsylvania State University, 1984; 1986.

Sanders, Frank C., Associate Professor, *Emeritus*, Physics, Ph.D., University of Texas, 1968.

Plant Biology

The School of Biological Sciences offers graduate programs leading to a Master of Science in Plant Biology, Master of Science in Biological Sciences, and the Doctor of Philosophy in Plant Biology. The first master's degree was granted in 1948, and the first Ph.D. degree in 1965.

An advisory committee of faculty members from plant biology as well as other programs helps design individualized programs to meet the specific educational goals and career aspirations of each student. The broadly diversified faculty of the program provide research emphases in ecology and environmental science, systematics and biodiversity, and molecular biology and physiology. Graduate degrees in plant biology will be awarded to students in recognition of their ability to do independent research as evidenced by the acceptance of a thesis or dissertation and the demonstration of competent scholastic ability.

The Plant Biology graduate program is housed in various major teaching and research facilities on the campus of Southern Illinois University Carbondale (SIUC) including Life Science II and Life Science III. Faculty members provide research and laboratory facilities for students. The program supplies centralized facilities including laboratories for basic specialized computing, a core facility for nutrient analyses, and molecular biology, as well as herbaria, growth chambers, field sites and greenhouses. Excellent cooperative research arrangements are available for activities including electron microscopy, chemical analyses and research photography. Southern Illinois University Carbondale is strategically located in the transition zones of several North American biomes and is within a one hour drive to spectacular natural areas including Pine Hills Research Natural Area, Cypress Creek Bioreserve, Garden of the Gods, and Little Grand Canyon.

Admission

Applications should be completed online, addressed to the Director of Graduate Studies of the program, and must include a completed application form, three letters of recommendation, official transcripts of all institutions of higher learning attended, and grade point average. Students must meet both Graduate School and program admission requirements. Financial assistance is available on a competitive basis. To be considered for financial support a financial assistance form must also be submitted. Acceptance to the program is contingent on availability of faculty to advise the student, research space and facilities, and satisfactory evidence of funding to complete the degree program (e.g., teaching assistantship, research assistantship, or fellowship). International students whose native language is not English must have a minimum of 80 on the internet-based TOEFL test or equivalent per Graduate School requirements.

This program requires a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in Plant Biology. Applicants must pay this fee by credit card.

Applicants must have a Bachelor's Degree (or equivalent) in a life science. A student who does not meet these requirements may petition for admission to the program, or register as a regular nondeclared graduate student. Either prior to admission or during their programs, students must complete a course in each of the following categories: 1) plant systematics or plant diversity; 2) plant physiology, cell biology or molecular biology; and 3) plant ecology or environmental science. A course in plant morphology or

plant anatomy is strongly recommended. A student who does not meet these requirements may petition for admission to the program. All deficiencies, as determined by the student's advisory committee, must be removed during the first year by taking appropriate courses (graduate or undergraduate) with grades of *B* or better in each course. Criteria for admission include GPA (3.25/4.00 or higher) on the entire last undergraduate GPA earned at the time of application, letters of recommendation, transcripts and availability of faculty, space and facilities. To be admitted into the program, at least one faculty member must be willing to serve as major advisor or co-advisor if the student desires to work in the Forestry or Plant, Soil and Agricultural Systems programs. Students desiring financial assistance for Fall semester admission should consult the Plant Biology website for the deadline. Application forms are available from the Director of Graduate Studies of Plant Biology or the Plant Biology website.

Accelerated Entry into the Doctoral Program

A student who enters a master's program in plant biology may, if deemed capable, be permitted to apply to be accelerated into a program leading directly to a Ph.D. in Plant Biology degree, subject to the following conditions and specifications. In order to qualify for consideration, each endorsed student must: (a) have been in the SIUC plant biology graduate program no less than one or more than two academic terms when proposed; (b) have a graduate grade point average of 3.75 or better; (c) have no grade in any course (conditional or otherwise) in his/her graduate record of less than *B*; and (d) be deemed by the Evaluation and Awards Committee as having superior capabilities.

Once advanced into the doctoral program by the Graduate School, the student shall be eligible to qualify for graduate assistance totaling no more than 60 months. Once in the doctoral program, the student is subject to all of the academic, retention, and exit requirements for a regular doctoral program.

If for any reason, a student who has been admitted into the accelerated entry program fails to complete the doctoral program successfully, that student shall not automatically be re-admitted into the master's program.

Advisement

Following admission to the program and before registration for course work, the student must consult a staff member representing the field of major interest or, if this is unknown, the Director of Graduate Studies of the program, for assistance in planning the first registration. At registration, deficiencies and specific program requirements must be considered first.

Within the first semester of the program, the student must select a faculty member who is willing to serve as the major adviser. The major adviser in consultation with the student will then select appropriate faculty members to comprise the advisory committee. For the M.S. in Plant Biology degree program, a minimum of three people shall make up the advisory committee, two of whom must be voting members of the Plant Biology program. The advisory committee for the Ph.D. in Plant Biology degree program will be composed of at least five people, three of whom must be voting members of the plant biology faculty and one who must be from outside the program. The Director of Graduate Studies is an ex-officio member of each graduate advisory committee. The duties of the advisory committee are to:

1. plan, approve and file with the Director of Graduate Studies the program of study, and advise the student on his/her research program especially during the first semester of the student's program;
2. read, evaluate and file with the Director of Graduate Studies the student's research prospectus by the end of the second semester of the student's program;
3. monitor the student's progress and make any necessary changes in the program, while providing advice and direction on the student's research problem;
4. annually assess the student's progress and file recommendations as to retention or dismissal from the program with the Evaluation and Awards Committee;
5. participate in and grade the written and oral preliminary examinations for the Ph.D. in Plant Biology degree;
6. read and evaluate the student's thesis or dissertation and make suggestions for improvement; and
7. administer the defense and final examination of the thesis or dissertation.

In either degree program, following establishment of the advisory committee and before advance registration for the second term, the student must meet with the advisory committee to discuss the program of courses for the degree and plans for research. In this regard, the committee is empowered to require work in areas with which the student's interests are allied. The advisory committee will advise

the student on the selection of readings on general and historical topics of importance that may not be encountered in formal courses. Copies of the approved program of courses and the plans for research must be placed in the program files by the beginning of the second semester of study. An approved research prospectus must be completed and filed with the Director of Graduate Studies by the end of the second semester.

Research and Training Assignments

Research is required of each student in the program. In addition, each term the student must be engaged in a training assignment which supplements formal course work through professional activities such as research or teaching. The assignment varies according to the needs, professional goals, and competencies of the student, and increases in responsibility as the student progresses. The assignments require from 10 to twenty hours of service per week.

Academic Retention

The general regulations of the Graduate School with respect to academic retention shall be followed. In addition, no course in which the grade is below *C* shall count toward the degree or fulfillment of any requirement, but the grade will be included in the grade point average. No more than five credit hours of *C* work in graduate courses will count toward the degree.

All students are subject to regular review by the program's Evaluation and Awards committee. Those not attaining the minimum acceptable academic standards or who in any way fail to meet any other scheduled requirements or standards may be dropped from the program.

Appeals

Appeals for variations from the graduate program must be presented in writing to the plant biology graduate faculty meeting as a committee of the whole. Appeals must receive approval from a majority of the total plant biology graduate faculty.

Appeals for changes in the student's graduate advisory committee or changes in the original program must be approved in the following order: (1) approval from advisor; (2) approval from the remaining members of the student's advisory committee. Student appeals for change of major advisor must be presented in writing to the plant biology graduate faculty meeting as a committee of the whole. Appeals must receive approval from the Evaluation and Awards Committee.

Master of Science (M.S.) in Plant Biology

A minimum of 30 hours of graduate credit is required beyond the bachelor's degree. Fifty percent of courses counted towards the degree must be at the 500-level. Those 30 credit hours should include:

1. a minimum of 22 hours of graded credit hours in Plant Biology or related disciplines (nine of these 22 credit hours may be graded individualized instruction courses)
2. seminars as specified below (generally four credit hours)
3. at least four (maximum six) credit hours of thesis (PLB 599)

All M.S. in Plant Biology degree students must earn a minimum of two credit hours in graduate seminars during each year of residence. Students may take any seminar course approved by their committee, with the following constraints:

1. student must take PLB 590 their first fall term
2. student must take PLB 580 each spring semester of residency.

A graduate minor of at least 10 graduate credit hours may or may not be required; this is to be determined by the student and the advisory committee.

As noted in the admission requirements, students will take, either prior to or during their program, at least one course in each of the following categories:

1. plant systematics

2. plant physiology, cell biology, or plant molecular biology
3. ecology or environmental science

Courses in plant anatomy and genetics are strongly recommended also if they have not been taken prior to the program.

A program of study must be approved by the student's advisory committee and be submitted to the Director of Graduate Studiesby the end of the first semester of the student's program. Changes made after the first semester of the student's program must be approved by the student's advisory committee.

At the time of completion of the thesis, the student must schedule a public seminar presentation of the thesis material and a comprehensive examination over the thesis and related subject matter.

Doctor of Philosophy (Ph.D.) in Plant Biology

Course work for the Ph.D. in Plant Biology degree shall include:

1. a minimum of 20 graded credit hours in plant biology or related disciplines
2. minimum of two tools courses (generally 6 to 12 graded credit hours)
3. seminar credits as specified below (generally 8 to 10)
4. minimum of 30 credit hours of dissertation research (PLB 600)

All Ph.D. in Plant Biology students must earn a minimum of two credit hours in graduate seminars each year until they advance to candidacy. Students may take any seminar course approved by their committee, with the following constraints:

1. student must take PLB 590 their first fall term
2. student must take PLB 580 each spring semester until they advance to candidacy

As noted in the admission requirements, students will take, either prior to or during their program, courses in all of the following categories:

1. plant systematics
2. plant physiology; cell biology or plant molecular biology
3. ecology or environmental science

Courses in plant anatomy and genetics are strongly recommended if they have not been taken prior to starting the program.

A program of study must be approved by the student's advisory committee and be submitted to the Director of Graduate Studies by the end of the first semester of the student's program. Changes made after the first semester of the student's program must be approved by the student's advisory committee.

Tools

The Ph.D. in Plant Biology student shall demonstrate knowledge in two research tools approved by the student's advisory committee. A tool is defined as training in laboratory (or field) methods, instrumentation, technology, or communication skills including languages that are integral to the pursuance of research. Specific tool requirements will be determined by the student's advisory committee. Courses used to satisfy tools requirements shall not be applied toward the total number of credit hours required for the degree. A foreign language tool can be met by earning a grade of *B* or better in appropriate 400-level course (Latin, French, German, Spanish or Russian). The tool can also be met by passing an Educational Testing Service (ETS) examination in French, German, Spanish or Russian. The ETS passing level for French and German is 465 and for Russian and Spanish it is 440. A statistical tool requirement can be satisfied by earning a *B* or better in one or more graduate level statistics courses. Course recommendations for statistical tools include Biostatistics (PLB 557) and Advanced Biostatistics (PLB 558). Other courses can be used to satisfy a statistical tool requirement if deemed acceptable by the student's advisory committee. Tool requirements other than language or statistics may be completed by earning a *B* or better in courses approved by the student's advisory committee, including courses from outside the program.

Concentration in Ecology

Students opting to declare ecology as a concentration shall follow the same program as students in the Ph.D. in Plant Biology degree program that do not declare a concentration, subject to the following courses: Course work for the concentration in ecology shall consist of a minimum of 20 credit hours at the seminar, readings, research, dissertation, and research tool requirements. The Seminar in Plant Biology Ecology (PLB 589A) or equivalent must be taken every Fall and Spring semester until student achieves candidacy. The student's advisory committee shall consist of at least five members with a majority from Plant Biology and at least two members from outside of Plant Biology. For the preliminary examination, the field of expertise shall be ecology. One of the two research tools will be statistics, and the other should demonstrate knowledge defined as training in laboratory (or field) methods, instrumentation, technology, or communication skills including language that is integral to the pursuance of ecological research.

Preliminary Examination

The preliminary examination will consist of two parts: a written examination and an oral examination. The written and oral examinations shall emphasize competence in:

1. One of the fields of expertise within the Program: plant systematics and plant diversity; plant physiology, cell biology and molecular biology; or ecology.
2. The student's designated area of specialization (as determined by the advisory committee), and
3. The student's research tools (see above) and a basic, general knowledge of Plant Biology (as defined by the PLB Faculty).

These three components of the written examination will be administered as separate entities. Subject matter covered in the two specialization examinations may be excluded from the general component at the discretion of the advisory committee.

The student, with the approval of his/her graduate advisory committee, will register with the Director of Graduate Studies to take the examination. The Director of Graduate Studies will then appoint a faculty member who is not on the student's advisory committee to chair the examination committee (EC) and administer both the written and oral examinations. The Chair of the examination committee will solicit questions from the student's advisory committee and from the faculty at large. Upon receipt of these questions, the Chair of the examination committee will call the committee together to construct and plan the written part of the examination. The student will be allocated one eight-hour block of time to complete each of the three components of the examination. The student may request additional time.

The student must pass all parts of the written examination to proceed to the oral examination. Pass means that the student has demonstrated through clear written statements a clear understanding of the topics presented in the written examination. A vote of the EC to pass or fail must be taken immediately following the grading of the written examination. Passing of the written examination will be determined by simple majority vote of the EC. If the student fails one or more of the three components of the examination, he/she must be reexamined on the failed components. If the student fails any part(s) of the general examination, he or she must be reexamined on the failed part(s). In consultation with the advisory committee, the EC chair will schedule and administer the reexamination. The reexamination may not be taken during the same academic term. The student must pass the written examination by the second attempt to continue in the program.

Following passage of the written portion of the examination, the EC chair will schedule and administer the oral portion of the examination. The oral examination must be scheduled not sooner than 10 working days nor more than 30 working days from the completion date of the written examination. The EC chair will not participate in the questioning of the student and does not have a vote regarding the proceedings. The oral preliminary examination must be announced at least 10 working days before the examination is to be given. The examination may only be scheduled when classes are in session, including finals week. The examination shall last at least two hours and not more than four hours and should be scheduled to allow attendance of a maximum number of faculty members from the student's program and all of the preliminary examination committee members. The student's answers to the written examination will be made available to the graduate faculty (upon request) before the oral part of the preliminary examination. All attending graduate faculty members will be given the opportunity to express their opinion on the examination. A vote on performance in the oral examination must be taken immediately following completion of the examination. A pass requires a vote with no more than one dissenting member of the

preliminary examination committee, and may have conditions. If the vote is pass, then two levels may be recognized: Pass and Pass with Distinction. A student will be allowed two attempts to pass the oral preliminary examination. Should a student fail a second attempt to pass the preliminary examination, he/she will be dropped from the program. Doctoral students entering the program with a master's degree must take the preliminary exam by the end of 30 months and must pass the preliminary examination and be admitted to candidacy by the end of 36 calendar months after first registering in the doctoral program.

Final Examination (Dissertation Defense)

The final examination will be oral. It must be preceded during that semester by a public seminar on the student's research findings. The student's advisory committee will notify the Director of Graduate Studies of its recommendation for the date of the final examination at least two weeks prior to the seminar. The seminar and examination must be announced at least 10 working days before the seminar and examination. The seminar and examination must be held when classes are in session, including finals week. The final examination shall last for no more than three hours. It is to cover the dissertation and related subject matter. Passage of the final oral examination should be construed to mean there shall be no more than one dissenting vote of the advisory committee. Should a student fail a second attempt to pass the final examination, they will be dropped from the program.

Plant Biology Courses

PLB400 - Plant Morphology and Anatomy This course is an introduction to the differentiation, diversification and structure of plant tissues, organs and external forms, with emphasis on seed plants. Laboratory will include instruction in basic techniques of microscopy used in the study of plant structure. Two lectures and two laboratories per week. Prerequisite: BIOL 213 or PLB 200 with grades of C- or better. Lab fee: $50. Credit Hours: 4

PLB401 - Curation of Collections This course will be an introduction to the curation of biological collections and strongly involve experiential learning through participatory activities with collections. This will involve an overview of museums, collection procedures, and the long-term features of high quality curation of specimens and will examine how a broad range of organisms is curated. Lab/Field trip fee: $50. Credit Hours: 2

PLB408 - Plant Systematics and Identification This course covers the principles of plant classification including history, nomenclature, specimen collection and preservation, current systematic methodologies, and a survey of major plant families. Two lectures and four hours of lab per week. Prerequisites: BIOL 213 or PLB 200 with grades of C- or better. Lab fee: $50. Credit Hours: 4

PLB416 - Limnology (Same as ZOOL 415) Lakes and inland waters; the organisms living in them, and the factors affecting these organisms. Two lectures and one 4-hour laboratory alternate weeks. Prerequisite: BIOL 307 with a grade of C- or better. Laboratory/Field Trip fee: $15. Credit Hours: 3

PLB419 - Plant Molecular Biology (Same as PSAS 419, CSEM 419) A survey of molecular phenomena unique to plant systems. Topics will include: genome organization and synteny between plant genomes, transcriptional and post-transcriptional control of gene expression, signal transduction, epigenetics, plant-pathogen interactions and responses to biotic- and abiotic-stresses. Prerequisite: BIOL 305 or CSEM 305. Restricted to 3rd Year standing. Credit Hours: 3

PLB425 - Advanced Plant Physiology and Ecophysiology Advanced topics in plant physiology. Abiotic factors such as light, water, temperature, and nutrients, as well as emerging man-made pollutants such as nanoparticle contamination. Biotic factors such as plant-microbe signaling and the rhizosphere microbiome, plant-plant signaling, and competition for resources. These topics are covered at molecular and organismal levels, as well as the physiological ecology of these processes on a larger scale. This course offers a perspective of how these processes work in nature, as well as how they are or might be manipulated for crop or agriculture practice improvement. Undergraduate Prerequisite: PLB 320 or PSAS 409. Lab fee: $35. Credit Hours: 5

PLB427 - Plant Biochemistry (Same as CSEM 427 and PSAS 427) Exploration of fundamental biochemical pathways in plants with an emphasis upon carbon and nitrogen metabolism. Prerequisite: PLB 320 or consent of instructor. Lab fee: $35. Credit Hours: 5

PLB433 - Introduction to Agricultural Biotechnology (Same as AGSE 433, ANS 433, CSEM 433, HORT 433, PSAS 433) This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene mapping, cloning, transfer, and expression will be derived. Credit Hours: 3-7

PLB435 - Pollination Ecology (Same as ZOOL 435) This course will be an evolutionary and ecological examination of the interactions between plants and pollinators. Topics include pollination syndromes, plant breeding systems, pollinator foraging, learning, and behavior, specialized vs. generalized relationships, coevolution/cospeciation, chemical ecology, honey beekeeping & agricultural pollination, and conservation implications of pollinator relationships. Labs will provide hands-on experience in methods of investigating plant breeding systems, plant reproductive ecology, pollinator behavior and efficacy, pollen analysis, floral scent chemistry, and floral phenology. Prerequisite: BIOL 307 (General Ecology) with a grade of C- or better or equivalent. For graduate students and 4th Year students. Lab fee: $75. Credit Hours: 3

PLB438 - Plant and Animal Molecular Genetics Laboratory (Same as AGSE 438, CSEM 438, PSAS 438, ZOOL 438) Arabidopsis and Drosophila model organisms, lab-based training in laboratory safety, reagent preparation, phenotype analysis, genetics, DNA and RNA analysis, PCR, cDNA construction, cloning and sequencing of genes. Includes plant and bacterial transformation, and a population level analysis of genetic variation using RAPD markers in grasses and Alu insertion in humans. Two 2-hr labs and one 1-hr lecture per week. Prerequisite: BIOL 305 or equivalent or consent of instructor. Lab fee: $30. Credit Hours: 3

PLB440 - Grassland Ecology This course examines grassland structure and function in relation to various biotic and abiotic factors. Field trips will visit local grasslands. Two lectures and one 4-hour lab per week. Prerequisite: BIOL 307 or consent of instructor. Lab fee: $50. Credit Hours: 3

PLB444 - Ecological Analysis of Communities (Same as ZOOL 444) Includes concepts and methods pertaining to the analysis of ecological data. Approaches will include a variety of methods for analyzing multivariate ecology, diversity, pattern, and spatial data. Laboratory will include the computer application of these concepts and methods to field situations. Two lectures and one 4 hour lab per week. Prerequisite: PLB/ZOOL 360, BIOL 307. Lab fee: $15. Credit Hours: 4

PLB451 - Flora of Southern Illinois Exposure to the major upland and lowland communities of southern Illinois with an emphasis on the identification, distribution and ecology of the natural and introduced floristic components. This is a field-based course wherein the students travel to local areas for plant identification. Each week, 4-8 hours per weekly session is spent in field work and travel to specific field sites is required via a university vehicle. Prerequisite: PLB 408 with a grade of C- or better or consent of instructor. Field Trip fee not to exceed $160. Credit Hours: 3

PLB452 - Plant Population Ecology This course covers principles and research techniques of plant population ecology including the spatial, age, size and genetic structures of plant populations. The origin of these different aspects of population structure, their influences upon each other and their temporal dynamics are also examined. Two lectures and one 4-hour lab per week. Prerequisite: BIOL 307 or consent of instructor. Lab fee: $35. Credit Hours: 4

PLB471 - Introduction to Systems Biology (Same as ZOOL 472) The bioinformatic analysis of large genomic and post-genomic data sets. Integration of gene regulation, protein interaction, metabolite and hormonal signaling provides an understanding of basic cellular circuitry networks. Examine redundancy, robustness and decision making in biological systems. Lab includes databases, tools, and manipulation of large data sets. Prerequisite: BIOL 305 or CS 330. Lab fee: $15. Credit Hours: 3

PLB475 - Advanced Cell Biology Cell structure at molecular and cytological levels. Includes discussions of research methods, plasma membrane, cell exterior and recognition, the endomembrane system and related organelles, self-replicating organelles, the cytoskeleton, nuclear structure and function in cell

replication, cell differentiation and response, and eukaryotic cell evolution. Prerequisite: BIOL 306 or equivalent. Credit Hours: 3

PLB476 - Advanced Cell Biology Laboratory Laboratory course to accompany Plant Biology 475. Light and electron microscopy, cell culturing, biochemical methods, and experimental protocols are used to study the structure of cell membranes, intracellular organelles, including the Golgi apparatus, ER, mitochondria, plastids, lysosomes, the cytoskeleton, and nucleus. Prerequisite: PLB 475 or concurrent enrollment. Credit Hours: 2

PLB490 - Energetics, Food Webs, and Ecosystems (Same as ZOOL 490) This course places conservation of particular species into the context of community and ecosystem management. Approaches to quantifying energy needs of individual species will be extended to models of trophic networks among multiple species. Food web structure and function, species interactions, and resilience to species loss species invasions, and environmental changes will be examined in light of landscape processes. Prerequisite: BIOL 307 or consent of instructor. Credit Hours: 3

PLB492 - Honors in Plant Biology Individual research problems available to qualified 3rd Year and 4th Year students. Special approval needed from the department chair. Credit Hours: 2-6

PLB493A - Research Topics in Plant Biology-Ecology Individual laboratory or field research under supervised direction. Does not count for thesis (PLB 599) or dissertation (PLB 600) credit. Special approval needed from the departmental chair. Credit Hours: 1-4

PLB493B - Research Topics in Plant Biology-Systematics Individual laboratory or field research under supervised direction. Does not count for thesis (PLB 599) or dissertation (PLB 600) credit. Special approval needed from the departmental chair. Credit Hours: 1-4

PLB493C - Research Topics in Plant Biology-Physiology/Molecular Biology Individual laboratory or field research under supervised direction. Does not count for thesis (PLB 599) or dissertation (PLB 600) credit. Special approval needed from the departmental chair. Credit Hours: 1-4

PLB501A - Research Transmission Electron Microscopy (See SCI 501A) Credit Hours: 2

PLB501B - Research Transmission Electron Microscopy (See SCI 501B) Credit Hours: 2

PLB502A - Research Scanning Electron Microscopy (See SCI 502A) Credit Hours: 2

PLB502B - Research Scanning Electron Microscopy Lab (See SCI 502B) Credit Hours: 2

PLB520 - Plant Growth and Development (Same as PSAS 520) Physiological control of developmental processes. Emphasis on exogenous growth-regulating compounds and their behavior in plants. Prerequisite: PLB 320 or consent of instructor. Credit Hours: 3

PLB524 - Gene Regulatory Networks (Same as PSAS 524) An examination of the integration of genes into networks including developmental, abiotic stress response, metabolic and photoreceptor gene regulatory networks. Includes motif discovery, cis-regulatory elements, discussion of transcription factor families, RNA interference, network theory, feedback loops, cytoplasmic inheritance, maternal effect, post-transcriptional and post-translational regulation. Includes 2 lectures and a 2 hr computational bioinformatics lab per week. Prerequisite: PLB 471 or permission of instructor. Credit Hours: 3

PLB525 - Cell Biology Research Techniques A special techniques course designed for graduate students specializing in cell studies. Provides instrumentation training, with emphasis on application of the method to a research project. (a) Quantitative Cytology. (b) Immuno-Labelling and Qualitative Histochemistry. (c) Deep Etching Techniques in Electron Microscopy. (d) Cell Fractionation and Biochemical Techniques. Course fee: $50. Credit Hours: 2-4

PLB525A - Cell Biology Research Techniques-Quantitative Cytology A special techniques course designed for graduate students specializing in cell studies. Provides instrumentation training, with emphasis on application of the method to a research project. Credit Hours: 2-4

PLB525B - Cell Biology Research Techniques-Immuno-Labeling and Qualitative Histochemistry A special techniques course designed for graduate students specializing in cell studies. Provides

instrumentation training, with emphasis on application of the method to a research project. Credit Hours: 2-4

PLB525C - Cell Biology Research Techniques-Deep Etching Techniques in Electron Microscopy A special techniques course designed for graduate students specializing in cell studies. Provides instrumentation training, with emphasis on application of the method to a research project. Credit Hours: 2-4

PLB525D - Cell Biology Research Techniques-Cell Fractionation and Biochemical Techniques A special techniques course designed for graduate students specializing in cell studies. Provides instrumentation training, with emphasis on application of the method to a research project. Credit Hours: 2-4

PLB542 - Evolution in the Anthropocene This graduate level course focuses on our contemporary understanding of the impacts of expanding urban and agricultural environments, climate change, and other major components of the Anthropocene on the evolution of wild populations. It is more critical than ever for scientists to examine how anthropogenic factors impact natural populations. This is a conceptually broad course which covers topics ranging from landscape genetics, ecological genetics, evolutionary ecology, and phylogenetics. Credit Hours: 3

PLB547 - Tropical Studies in Costa Rica Credit for field courses taken under the jurisdiction of the Organization for Tropical Studies in Costa Rica. Courses and credits will vary. Prerequisite: approval of OTS Advisory Committee at Southern Illinois University Carbondale. Credit Hours: 3-8

PLB554 - Evolution Seminar (Same as ANTH 554) Advanced topics in evolutionary biology including genetics & development, evolutionary ecology, phylogeny, paleontology, biogeography, population genetics, molecular ecology, speciation, molecular evolution, and macroevolution. Topics will vary each semester. Seminar format group discussions and student presentations. Graded S/U. Special approval needed from the instructor. Credit Hours: 1

PLB556 - Phylogenetics (Same as ANTH 556, MBBS 556, ZOOL 556) An advanced introduction to modern methods of phylogenetic inference, emphasizing both theoretical background concepts and numerical approaches to data analysis. Topics include properties of morphological and molecular characters, models of character evolution, tree estimation procedures, and tree-based testing of evolutionary hypothesis. Special approval needed from the instructor. Credit Hours: 3

PLB557 - Biostatistics (Same as ZOOL 557) Basic biostatistical procedures used by researchers in life sciences and related fields. Topics include descriptive statistics, probability and distributions, statistical models, likelihood methods, experimental design, analysis of variance, regression, correlation, and the use of statistical software. Credit Hours: 4

PLB558 - Advanced Biostatistics (Same as ZOOL 558) Advanced biostatistical procedures used by researchers in life sciences and related fields. Topics include multiple and logistic regression, randomization tests, jackknife and bootstrap. Mantel tests, BACI designs, MANOVA, repeated measures analysis, and the use of statistical software. Prerequisite: PLB 557 or equivalent, ZOOL 557. Credit Hours: 4

PLB570 - Graduate Readings in Plant Biology A course of individually assigned readings in botanical literature. Every semester. Special approval needed from the instructor. Graded S/U only. Credit Hours: 2-3

PLB571 - Genomics of Eukaryotes: Bioinformatics (Same as PSAS 571) Genomics, Proteomics and Bioinformatics are rapidly making important contributions to the Life Science through biotechnology. An appreciation of the genomic tools is important to all in agriculture and biology. The relationships between molecular biology bioinformatics and the biotechnology industry will be explored. Short independent practical projects in genomics, proteomics or bioinformatics will be pursued. Credit Hours: 4

PLB578 - Population Genetics (Same as ZOOL 578) Genetic structure of populations, factors causing changes and principles governing rate and direction of change. Three lectures per week. Prerequisite: BIOL 304 and BIOL 305. Credit Hours: 3

PLB580 - Departmental Seminar Student presentations and critiques of original research, including presentations by occasional invited speakers. Graded S/U only. Required of all graduate students in residence, when offered. Credit Hours: 1-6

PLB589A - Seminars in Plant Biology-Ecology (Same as ZOOL 576) Discussions of current and historical research and literature in various subject areas of plant biology. Graded S/U only. Credit Hours: 1

PLB589B - Seminars in Plant Biology-Molecular and Biochemical Physiology Discussions of current and historical research and literature in various subject areas of plant biology. Graded S/U only. Credit Hours: 1

PLB589C - Seminars in Plant Biology-Systematics and Biodiversity Discussions of current and historical research and literature in various subject areas of plant biology. Graded S/U only. Credit Hours: 1

PLB590 - Introduction to Research General introduction to research and graduate program policies. Guest presentations by department faculty. Fall only. Graded S/U only. Required of all graduate students during their first year in residence, when offered. Credit Hours: 1

PLB591A - Research-Anatomy Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department. Credit Hours: 2-9

PLB591B - Research-Bryology Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department. Credit Hours: 2-9

PLB591C - Research-Ecology Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department. Credit Hours: 2-9

PLB591D - Research-Morphology Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department. Credit Hours: 2-9

PLB591E - Research-Mycology Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department. Credit Hours: 2-9

PLB591F - Research-Paleobotany Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department. Credit Hours: 2-9

PLB591G - Research-Pathology Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department. Credit Hours: 2-9

PLB591H - Research-Photography Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department. Credit Hours: 2-9

PLB591I - Research-Phycology Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department. Credit Hours: 2-9

PLB591J - Research-Physiology Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department. Credit Hours: 2-9

PLB591K - Research-Systematics Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department. Credit Hours: 2-9

PLB599 - Thesis Course to be taken in the preparation of the Master's thesis. Every semester. Special approval needed from the instructor. Graded S/U only. Credit Hours: 2-9

PLB600 - Dissertation Course to be taken in the research for and in writing of the doctoral dissertation. Every semester. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-12

PLB601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

PLB699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Plant Biology Faculty

Anterola, Aldwin M., Associate Professor, Ph.D., Washington State University, 2001; 2005. Metabolic pathways, medicinal compounds, nutraceuticals, biosynthesis of natural products.

Da Cunha Leme Filho, Jose F., Assistant Professor, Ph.D., Virginia Polytechnic Institute and State University, 2020. Controlled environment agriculture, vertical farm, cannabis biology, plant physiology, secondary metabolites, plant biostimulants.

Gage, Karla L., Associate Professor, Ph.D., Southern Illinois University Carbondale, 2013; 2015. Weed science, weed ecology, agroecology, integrated pest management, herbicide resistance, invasive species.

Garwood, Nancy, Adjunct Professor, Ph.D., University of Chicago, 1979; 2005. Tropical botany, including community ecology, seed germination, seedling morphology, and systematics.

Geisler, J.B. Matthew, Associate Professor, Ph.D., The Ohio State University, 1999; 2006. Gene expression and protein interaction patterns, mathematical gene modeling, arabidopsis, yeast and drosophila interactomes.

Geisler-Lee, Jane, Adjunct Assistant Professor, Ph.D., The Ohio State University, 2002; 2007. Systems biology, cell wall, suberin, onoclea sensibilis, genomics, transcriptomics, metabolic pathways, sporogenesis, rhizome development.

Jayakody, Lahiru N., Assistant Professor, Ph.D., Kagoshima University, 2014; 2019. Biotechnology, molecular biology, metabolic engineering, synthetic microbiology, systems biology.

Neubig, Kurt M., Associate Professor, Ph.D., University of Florida, 2012; 2015. Plant systematics, phylogenetics, floristics, DNA barcoding and pollination biology.

Petri, Laís., Assistant Professor, Ph.D., University of Michigan, 2023; 2025. Plant community ecology, invasion biology.

Sipes, Sedonia D., Associate Professor, Ph.D., Utah State University, 2001; 2001. Plant-insect interactions, evolutionary ecology, chemical ecology, and systematics.

Weber, Jennifer., Assistant Professor, Ph.D., University of CA, Irvine, 2012; 2020. Evolutionary ecology, including breeding system evolution, pollination biology, population genetics and climate change biology.

Wood, Andrew J., Professor, Ph.D., Purdue University, 1994; 1996. Biotechnology, biochemistry, desiccation, drought, genetics, horticulture, plant physiology, stress.

Emeriti Faculty

Bozzola, John J., Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1975; 1983.

Crandall-Stotler, Barbara, Professor, Emerita, Ph.D., University of Cincinnati, 1968; 1970.

Gibson, David J., Distinguished Professor, Emeritus, Ph.D., University of Wales, 1985; 1992.

Matten, Lawrence C., Professor, Emeritus, Ph.D., Cornell University, 1965; 1965.

Mohlenbrock, Robert H., Distinguished Professor, Emeritus, Ph.D., Washington University, 1957; 1957.

Nickrent, Daniel L., Distinguished Research Professor, Emeritus, Ph.D., Miami University (Ohio), 1984; 1990. Distinguished research.

Renzaglia, Karen, Distinguished Research Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1981; 2005. Distinguished research.

Richardson, John A., Associate Professor, Emeritus, M.F.A., Ohio University, 1969; 1969.

Robertson, Philip A., Professor, Emeritus, Ph.D., Colorado State University, 1968; 1970.

Tindall, Donald R., Professor, Emeritus, Ph.D., University of Louisville, 1966; 1966.

Vitt, Dale H., Distinguished Research Professor, Emeritus, Ph.D., University of Michigan, 1970; 2000.

Yopp, John H., Professor, Emeritus, Ph.D., University of Louisville, 1969; 1970.

Plant, Soil, and Agricultural Systems

The School of Agricultural Sciences offers a Master of Science degree in Plant, Soil, and Agricultural Systems with a concentration in crop science, soil science, or horticultural science. Students can also take courses emphasizing environmental studies in agriculture through each of these three concentrations. The concentrations in crop, soil, and horticultural science can be pursued with either a thesis option or a research paper (non-thesis) option. We also offer graduate work in agricultural education and information and agricultural technologies.

Supporting courses in education, communication, engineering, plant biology, microbiology, chemistry, statistics, and other areas essential to research in the student's chosen field may be selected. Supporting courses are selected on an individual basis by the student and the advisory committee. Once the general field has been selected, the research and thesis may be completed in any one of the many divisions of that field. In field crops, the research may be directed toward crop production, management and precision farming, weeds and pest control, or plant breeding, genetics, and biotechnology; in horticulture, the research and thesis may be in landscape design, vegetables, tree fruits, small fruits, floricultural and ornamental plants, plant tissue culture, or turf management; in soils, the research may relate to soil fertility, soil physics, soil microbiology, soil chemistry, or soil and water conservation; in environmental studies, the research may be directed toward water pollution, reclamation of strip-mined soil, or agricultural chemical pollution problems. Often, two of these more restricted areas can be combined into one thesis/research problem.

Agricultural education coursework is designed for instructors in secondary schools, for students preparing for employment at junior colleges, and for those desiring to continue their education by obtaining a Ph.D. degree. Agricultural information coursework is designed to provide graduate training for extension agents, agricultural communication professionals, product-education specialists, and others who are interested in agricultural information processing and transfer to a variety of non-student clientele. Agricultural technologies coursework is designed to offer students interested in technology-based systems the opportunity to study one or more of the following areas: (a) power and machinery; (b) product handling, processing, and storage; (c) farm equipment evaluation; and (d) precision farming. Each of these areas offers application in agricultural environmental studies.

Students interested in plant, soil, and agricultural sciences at the doctoral level can apply to Ph.D. programs in Agricultural Sciences, Plant Biology, or Environmental Resources and Policy at SIUC.

Admission

Application for admission must include an online application available at gradschool.siu.edu, a statement of interest, college transcripts, and four letters of recommendation. Letters should be requested from four persons who can evaluate the student's academic ability. Final admission to the program and a particular concentration administered by the Plant, Soil, and Agricultural Systems program is made by the program. Minimal admission requirements to the program are: a) completion of the plant, soil, and agricultural

systems or agricultural systems undergraduate requirements and b) a minimal grade point average of 2.7 (*A* = 4.0) on the entire last undergraduate GPA earned at the time of application. The students who do not meet the requirement of completing the required courses in the undergraduate program in plant, soil, and agricultural systems or agricultural systems may apply to enroll as nondeclared students to make up these deficiencies. Undergraduate coursework taken to correct these deficiencies will not apply to the minimum requirements for the M.S. in Plant, Soil, and Agricultural Systems degree. Students entering the M.S. in Plant, Soil, and Agricultural Systems program with a GPA below 2.70 are accepted on a conditional basis and must enroll in 12 credit hours of structured courses at the 500 level and make a GPA of 3.0 or be suspended from the program.

This program requires a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in Plant, Soil, and Agricultural Systems. Applicants must pay this fee by credit card.

Master of Science (M.S.) in Plant, Soil, and Agricultural Systems

Program Requirements

The crop, soil, and horticultural science concentrations can be pursued as a 30-credit hour with thesis program or a 40-credit hour with a research paper (non-thesis) option. These are described below:

Thesis Option

If the student submits a thesis, the minimum coursework requirements for the M.S. in Plant, Soil, and Agricultural Systems degree may be fulfilled by satisfactory completion of 30 hours of graduate credit. At least 20 hours of that credit must be from structured courses. 50% of course credit hours are required at the 500 level, of which up to 10 credit hours may be from unstructured courses. A graduate seminar is required but is not a structured course. Overall, at least 15 credit hours must be from program courses.

Research Paper (non-thesis option)

If the student submits a research paper (non-thesis option), minimum coursework requirements for the M.S. in Plant, Soil, and Agricultural Systems degree may be fulfilled by satisfactory completion of 40 hours of graduate credit. At least 30 hours of that credit must be from structured courses. At the 500 level, 18 hours of course credit are required, of which up to 10 credit hours may be from unstructured courses. A graduate seminar is required but is not a structured course. Overall, at least 25 credit hours must be from program courses.

Students who wish to teach in agriculture education must complete a minimum of 15 credit hours in agriculture (including agricultural education), six credit hours of research methods or statistics, and six credit hours in education or community development. M.S. in Plant, Soil, and Agricultural Systems students usually take four to six credit hours of research or thesis and complete the additional hours by taking courses in education or agriculture.

Each student, whether in the thesis or non-thesis option, will be assigned a mutually agreed upon major professor to direct the program. The major professor will serve as chair of the student's advisory committee, which will consist of at least two members from within the program and may include one member from another program. Each M.S. in Plant, Soil, and Agricultural Systems degree candidate must pass a comprehensive oral examination covering graduate work, including the thesis or research paper.

PSAS 590 Readings and PSAS 592 Special Problems are available for students who have completed a course for another degree and need additional coursework to fulfill 30 credit hours.

Plant, Soil, and Agricultural Systems Courses

PSAS400 - Trends in Soil Science and Agronomy A discussion session format will be employed as a means of acquainting students with recent literature and allowing them to remain current with latest developments in their area of specialty. Special approval needed from the program. Credit Hours: 3

PSAS401 - Agricultural Plant Pathology A study of macro and micro-organisms and environmental factors that cause disease in plants of agricultural importance; of the mechanisms by which these factors induce disease in plants; and of the methods for managing diseases and reduce the damage they cause. Special approval needed from the program. Credit Hours: 2

PSAS402A - Problems in Agricultural Education Designed to improve the techniques related to award programs and application processes of agricultural education specialists through discussion, application, organization, and assignment to problems in the field of agricultural education. Emphasis will be placed on conceptual understanding of FFA and Agricultural Education award programs, applications, Supervised Agricultural Experience Program, and National Chapter Award Program, affiliated professional partnerships, and external sources for developing the entire Agricultural Education program. Credit Hours: 3

PSAS402B - Problems in Agricultural Technologies Designed to improve the techniques of agricultural mechanization workers through discussion, assignment, and special workshops on problems related to their field. Emphasis will be placed on new innovative and currently developed techniques for the field. A limit of six hours will be counted toward graduation in Master's degree program. Special approval needed from the program. Credit Hours: 1-6

PSAS403A - Field Crop Diseases A survey of major diseases of important field crops in the United States. Disease identification, cycles, and management strategies will be addressed. Special approval needed from the program. Credit Hours: 2

PSAS403B - Horticultural Crop Diseases A survey of major diseases of important horticultural crops in the United States. Disease identification, cycles, and management strategies will be addressed. Special approval needed from the program. Credit Hours: 2

PSAS403C - Turfgrass Diseases A survey of major diseases of important turfgrasses in the United States. Disease identification, cycles, and management strategies will be addressed. Special approval needed from the program. Credit Hours: 1

PSAS403D - Tree Diseases A survey of major diseases of important tree species in the United States. Disease identification, cycles, and management strategies will be addressed. Special approval needed from the program. Credit Hours: 1

PSAS404 - Writing Fact Sheets in Agronomy and Soil Science A thorough literature review, effective reading, evaluating facts, structuring a fact sheet, effective writing for layman audience, learning about writing a journal article, learning how to translate a journal article into an extension shorter version, and principles of PowerPoint presentation and teaching. Credit Hours: 2

PSAS405 - Plant Genetic Improvement The course focuses on the partitioning and manipulation of variation; different conventional and molecular selection methods; and the impact of plant improvement on agriculture, society, and environment. Prerequisite: CSEM 305 with a grade of C or better. Credit Hours: 3

PSAS408 - World Crop Production Problems Ecological and physiological factors influencing production in various areas of the world. Natural limitations on world crop production. Non-agricultural factors influence world crop output. Prerequisite: CSEM 200. Credit Hours: 3

PSAS409 - Crop Physiology Principles of basic plant physiology. Topics include cell structure, photosynthesis, respiration, water and mineral relations, vascular transport and plant growth regulators. Prerequisites: PLB 200, CHEM 140B. Course fee: $50. Credit Hours: 3

PSAS410 - Urban Horticulture This class will provide students an understanding of growing edible and ornamental plants in urban landscapes. This course will focus on the value of horticulture in urban

environments, and provide an overview of urban horticulture practices, with content focusing on the importance to ecosystem services and urban sustainability. The cultivation and management of both ornamental and edible plants will be discussed in context to using best management practices to create resilient urban ecosystems. Students will also learn the social and economic value of sustainable horticulture systems and implications of creating better communities through urban horticulture. A 3- to 4-day field trip will be required to observe and learn about various current horticulture practices in an urban setting. Prerequisite: HORT 220. Field trip and lab fee: $195. Credit Hours: 3

PSAS411 - Human Resource Development Programs in Agriculture Principles and procedures of human resource development (HRD) programs in agriculture with emphasis on program determination and methods. Special approval needed from the program. Credit Hours: 3

PSAS412 - Methods of Agriculture Mechanization Theory and use of educational materials and devices adaptable to the needs and interests of educators involved in agricultural mechanization laboratories. There is a $15 laboratory fee for this course. Credit Hours: 3

PSAS414 - Adult Education Procedures, Methods and Techniques Determining adult education needs and interests of the community. Securing and organizing the information needed for adult education programs and planning teaching activities. Credit Hours: 3

PSAS415 - Beginning Teacher Seminar The application in the professional field setting, of principles and philosophies of the education system. Includes application of principles of curricula construction, programming student and community needs. Special approval needed from the program. Credit Hours: 3

PSAS416 - Trends in Horticulture This course focuses on new emerging topics and trends in horticulture. Advances in technologies, cultivation and pest management practices, new variety development, new innovations, and other subject areas relevant to horticultural crop improvement and the horticulture industry will be discussed. A major part of this class will be student engagement in class discussion and presentations. Credit Hours: 3

PSAS417 - Horticulture Study Abroad Faculty led study abroad travel course designed to provide an international experience focused on horticulture. Students will gain hand-on learning experiences to directly observe, evaluate, and develop a better understanding of horticulture in another country. Students will be expected to analyze, critique, discuss, report, and describe their experiences. Oral and written documentation of the international horticultural experience will be required. Restricted to consent of instructor. Credit hours: 3. Credit Hours: 3

PSAS419 - Plant Molecular Biology (Same as PLB 419) A survey of molecular phenomena unique to plant systems. Topics will include: genome organization and synteny between plant genomes, transcriptional and post-transcriptional control of gene expression, signal transduction, epigenetics, plant-pathogen interactions and responses to biotic-and abiotic-stresses. Special approval needed from the program. Credit Hours: 3

PSAS420 - Crop Pest Control Study of field pests of forest, orchard, field and garden crops; pest control principles and methods; control strategy; and consequences of pest control operations. Special approval needed from the program. Lab fee: $35. Credit Hours: 4

PSAS421 - Turf Management Issues and Strategies Issues in environment, technology, management, society, politics, business, and sports that interact with turf management. Students will utilize periodicals and other references for preparing papers addressing these issues. Prerequisite: HORT 322 or permission of instructor. Lab fee: $25. Credit Hours: 3

PSAS422 - Turfgrass Science and Professional Management Basic concepts of physiology, growth, and nutrition of turfgrasses and their culture. Application of turfgrass science to management of special areas, such as golf courses, athletic fields, sod farms, and to the turfgrass industry. Prerequisite: CSEM 240 and HORT 322 or equivalent or consent of instructor. Lab fee: $50. Credit Hours: 3

PSAS423 - Greenhouse Management Principles of greenhouse management controlling environmental factors influencing plant growth; greenhouses and related structures; and greenhouse heating and cooling systems. Prerequisite: HORT 220 or consent of instructor. Laboratory fee: $40. Credit Hours: 3

PSAS424 - Floriculture Production, timing and marketing of the major floricultural crops grown in the commercial greenhouse. Each student will have an assigned project. Special approval needed from the program. Laboratory fee: $40. Credit Hours: 4

PSAS425 - Advanced Plant Physiology and Ecophysiology Advanced topics in plant physiology. Abiotic factors such as light, water, temperature, and nutrients, as well as emerging man-made pollutants such as nanoparticle contamination. Biotic factors such as plant-microbe signaling and the rhizosphere microbiome, plant-plant signaling, and competition for resources. These topics are covered at molecular and organismal levels, as well as the physiological ecology of these processes on a larger scale. This course offers a perspective of how these processes work in nature, as well as how they are or might be manipulated for crop or agriculture practice improvement. Undergraduate Prerequisite: PLB 320 or PSAS 409. Lab fee: $35. Credit Hours: 5

PSAS426 - Genomic and Bioinformatics The course is designed to introduce students from a variety of backgrounds and departments to the scope and methodology of genomic and bioinformatic sciences. Real problems and solutions from genome data analysis are studied in this course to see how high throughput genomics is driving bioinformatics, and changing the biological sciences in revolutionary ways. Special approval needed from the program. Credit Hours: 4

PSAS427 - Plant Biochemistry (Same as PLB 427) Exploration of fundamental biochemical pathways in plants with an emphasis upon carbon and nitrogen metabolism. Special approval needed from the program. Lab fee: $35. Credit Hours: 5

PSAS428 - Advanced Landscape Design I Development of the design process, graphics and verbal communication of landscape projects. Emphasis on large-scale projects and residential design. Special approval needed from the program. Laboratory fee: $50. Credit Hours: 3

PSAS429 - Advanced Landscape Design II Development of the design process, graphics and verbal communication of landscape projects. Emphasis on construction details, color rendering and portfolio development. Special approval needed from the program. Laboratory fee: $25. Credit Hours: 3

PSAS430 - Plant Propagation Fundamental principles of asexual and sexual propagation of horticultural plants. Actual work with seeds, cuttings, grafts and other methods of propagation. Prerequisite: HORT 220. Field trip costs approximately $5. Lab fee: $80. Credit Hours: 4

PSAS431 - Landscape Construction An introduction course in the basic elements of landscape construction dealing with wood, concrete, masonry and stone. Emphasis will be placed on safety, construction interpretation of construction drawings, specifications for specific structures, materials selection, cost estimation, site preparation, and construction techniques. Prerequisite: HORT 220. Laboratory fee: $170. Credit Hours: 4

PSAS432 - Garden Center and Nursery Management Principles and practices in both field and container production or ornamental landscape materials and the marketing of landscape plant materials at the nursery and retail garden center. Business management of both nurseries and garden centers will be included. Special approval needed from the program. Laboratory fee: $50. Credit Hours: 4

PSAS433 - Introduction to Agricultural Biotechnology (Same as ANS 433, PLB 433) This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene mapping, cloning, transfer, and expression will be derived. Credit Hours: 3-7

PSAS434 - Woody Plant Maintenance Care and management of ornamental shrubs and trees commonly used in the landscape. Topics to include trimming, pruning, fertilization, transplanting and diagnosis of woody plant problems. Special approval needed from the program. Credit Hours: 3

PSAS435 - Agricultural Molecular Biotechnology Seminar Molecular Biology is rapidly making important contributions to agricultural science through biotechnology. An appreciation of the techniques of molecular biology and their application to plant improvement is important to all in agriculture and biology. The relationships between plant molecular biology and the biotechnology industry will be discussed. Presentations on particular research problems will be made. Graded S/U only. Credit Hours: 1-4

PSAS436 - Successful Fruit Growing Learn how to grow and use temperate fruit trees for your pleasure and/or economic benefit. Learn to use the basic principles of plant-environment interaction to understand and solve common problems found in the culture of tree fruit crops in the landscape, garden or orchard. Master the secrets of fruit growing through emphasis on hands-on experiential laboratories. Focus on Midwest culture of tree fruit and nut crops. One-day field trip. Required textbooks mandatory. Special approval needed from the program. Laboratory fee: $135. Credit Hours: 4

PSAS437 - Vegetable Production Culture, harvesting, and marketing of vegetables; with morphological and physiological factors as they influence the crops. Special approval needed from the program. Laboratory fee: $25. Credit Hours: 4

PSAS438 - Plant and Animal Molecular Genetics Laboratory (Same as PLB 438, ZOOL 438) Arabidopsis and Drosophila model organisms, lab-based training in laboratory safety, reagent preparation, phenotype analysis, genetics, DNA and RNA analysis, PCR, cDNA construction, cloning and sequencing of genes. Includes plant and bacterial transformation, and a population level analysis of genetic variation using RAPD markers in grasses and Alu insertion in humans. Two 2-hr labs and one 1-hr lecture per week. Prerequisite: BIOL 305 or equivalent or consent of instructor. Lab fee: $30. Credit Hours: 3

PSAS439 - Introduction to Landscape Design Software Introduces students to a popular software program used to create landscape designs. Emphasis is on learning the software program rather than learning the design process. Prerequisite: HORT 328A and HORT 328B. Credit Hours: 3

PSAS440 - Applied Greenhouse Management (Same as HORT 440) Faculty led work experience at the SIUC Horticulture Greenhouses. The student can acquire practical professional training to complement their academic course work. Greenhouse management operations manual preparation will be a significant component of this course. Study will include: traditional greenhouse practices, green (living) walls & green roofs, nutrient film techniques, crop scheduling, biological pest control, pesticide application & safety. Prerequisite: HORT 423 or PSAS 423 with a grade of C or better or consent of instructor. HORT 423 or PSAS 423 may be taken concurrently. Lab fee: $75. Credit Hours: 3

PSAS445 - Irrigation Principles and Practices This course will cover basic principles of irrigation sciences; water requirements of crops; soil water relationship; water application methods including flooding, sprinkler and drip (or trickle) systems; water conveyance, distribution and measurement; evaluation of irrigation efficiency; and irrigation scheduling. Considerations will also include crop production effects and economic aspects of irrigation. Special approval needed from the program. Credit Hours: 3

PSAS446 - Soil and Water Conservation Covers the principles of hydrologic processes and soil erosion. Consideration will be given to the occurrence of soil erosion as it affects humans, food production and the environment. The methods and technologies for protecting against and controlling of erosion will also be discussed. Special approval needed from the program. Credit Hours: 3

PSAS447 - Fertilizers and Soil Fertility Recent trends in fertilizer use and the implications of soil fertility build up to sufficiency and/or toxicity levels; the behavior of fertilizer material in soils and factors important in ultimate plant uptake of the nutrients; the plant-essential elements in soils and ways of assessing their needs and additions; tailoring fertilizer for different uses and management systems; implication of excessive fertilization in our environment. Concurrent enrollment in PSAS 448 required. Special approval needed from the program. Credit Hours: 3

PSAS448 - Soil Fertility Evaluation A laboratory course designed to acquaint one with practical soil testing and plant analysis methods useful in evaluating soil fertility and plant needs. One hour lecture, two hours laboratory. Concurrent enrollment in PSAS 447 required. Special approval needed from the program. Laboratory fee: $15. Credit Hours: 2

PSAS450 - Controlled Environment Agriculture Students learn basics of intensive, high-value crop production such as cannabis in artificial/controlled growing environments (e.g., greenhouse, high tunnel, or other indoor environment). Course covers greenhouse structures, their basic operation & fundamental environmental management, plant growth & maintenance, diseases & pests, and crop scheduling & production of high value, intensively grown plants. Course fee of $142 is required for supplies associated

with hands-on laboratory exercises and travel expenses. Participation in six all-day Saturday field trip visits to industry production facilities is required. Credit Hours: 3

PSAS454 - Soil Microbiology (Same as MICR 454) A study of microbial numbers, characteristics and biochemical activities of soil microorganisms with emphasis on the transformation of organic compounds, nitrogen phosphorus, sulfur, iron and other plant essential nutrients. Prerequisite: CSEM 240 or MICR 301. Lab fee: $15. Credit Hours: 4

PSAS455 - Biology of Plant-Microbe Interactions The molecular basis of post-pathogen interactions and disease development in plants is examined with a critical review of original and current literature focusing on the mechanisms of pathogenesis, virulence, disease development and resistance, and response mechanisms in plants. Special approval needed from the program. Credit Hours: 3

PSAS463 - Agricultural Electrical Systems Electrical knowledge and basics skills are developed and implemented with practical exercises and projects. Electrical circuits will be planned and constructed, with emphasis on convenience, codes and safety. Laboratory fee: $40. Credit Hours: 3

PSAS466 - Vine and Small Fruit Culture Study of the developmental patterns and environmental responses of important vine and small fruit crops; strawberries, brambles, blueberries, grapes and exotic crops. Learn to adapt these crops to profitable culture for the amateur or professional with a Midwest focus. Practical hands-on experience in the classroom and the field. Two one-day field trips required. Required textbooks mandatory. Special approval needed from the program. Lab fee: $150. Credit Hours: 4

PSAS467 - Wines of the World Varieties, terroir, culture and connoiseurship. Study the impact of varieites, terroir and culture on important wines from regions around the world. Learn wine geography and its effect on wine character with practical hands-on experience and expand connoiseurship skills. A team approach to wine appellation presentations and a term project involved in the wine trade will teach industry production, marketing and networking skills. Meet once a week for 4 hours; 2 hr lecture, 2 hr lab. Meeting time arranged for convenience of majority interested in taking the class, with instructor approval. Prerequisite is successful completion of HORT 333, From the Vine to its Wine, with a grade of C or better. Must be 21 years of age prior to the beginning of class to enroll. Proof of age and signature on informed consent form required at first class meeting. Purchase and use of required textbook mandatory. Laboratory fee of $192. Credit Hours: 3

PSAS468 - Weeds - Their Control Losses due to weeds, weed identification and distribution, methods of weed dissemination and reproduction, mechanical, biological and chemical control of weeds. State and Federal legislation pertaining to weed control herbicides. Herbicide commercialization. Special approval needed from the program. Field Trips costing approximately $5. Credit Hours: 3

PSAS469 - Organic Gardening This class will focus on the philosophical background of organic farming, as well as the biological, environmental and social factors involved in organic food production. The student will learn the basic principles of successful organic gardening without the need to use man-made synthetic chemical sprays and fertilizers. Topics covered will include soils and organic fertilizers, composting and mulches, companion planting and crop rotation, organic cultivation of fruit, vegetable and ornamental flowers/shrubs, organic pest and disease control, permaculture, and organic garden planning design and maintenance. Credit Hours: 3

PSAS470 - Post Harvest Handling of Horticultural Commodities Fundamental principles of post harvest physiology, handling, and evaluation of horticultural commodities will be covered. Specific details will be given on vegetable, fruit, ornamental and floricultural commodities. Prerequisite: HORT 220 and PLB 320. Field trip costing approximately $30. Credit Hours: 2

PSAS472 - Precision Agriculture A study of the core components of Precision Agriculture including the Global Positioning System (GPS), multispectral and hyperspectral remote sensing technology, Geographic Information Systems (GIS), soil sampling, yield monitoring, and analysis & decision making systems applied for site specific management of production agriculture resources. Laboratory fee: $5. Credit Hours: 3

PSAS473 - Agricultural Automation This course introduces students to topics such as power distribution, programmable controllers, sensors and components, ladder control circuits and diagrams,

and motor controls. The lab will address automation issues for different industrial processes such as pasteurization. Lab fee: $20. Credit Hours: 3

PSAS475 - Golf Course Green Installation and Maintenance This course will mainly focus on the requirements, installation, care and maintenance of the rooting media of golf course putting green and turfgrass on disturbed soils. Prerequisite: CSEM 240. Credit Hours: 4

PSAS476 - Agricultural Safety and Health Analysis of safety and health issues important to managers and supervisors in agricultural operations. Topics include agricultural accident data, causes and effects of accidents, hazard identification, strategies for accident prevention, response to accidents and health risks and safeguards. Development and documentation of accident and illness prevention activities in the workplace. Special approval needed from the program. Credit Hours: 3

PSAS480 - Designing Outdoor Spaces This course will instruct and challenge the student to design outdoor spaces that cultivate a sense of place as related to the site and the user. The course will review fundamental landscape planning process including principles and elements of design with an emphasis on "green" decision making. Special approval needed from the program. Credit Hours: 3

PSAS481 - Cannabis Production Students will learn the entire process of cannabis production from seed, clone, or transplant to harvest. Also, students will gain an understanding of the cannabinoids and non-cannabinoids (terpenes and flavonoids) synthesis/degradation process. This course will also teach essential management techniques that will allow students to develop a solid understanding of the best practices for cannabis commercial production. Required field lab transportation and equipment/supply fee: $90. Credit Hours: 3

PSAS483 - Agricultural Processing Systems This course provides students with an understanding of the design principles, equipment, procedures and processes utilized in handling, processing and storing agricultural products. Prerequisite: AGSE 371. Credit Hours: 3

PSAS484 - Cannabis Supply Chain This course provides an in-depth exploration of the cannabis supply chain, focusing on the unique challenges and opportunities within the industry. Students will learn about the processing (harvest, drying, and curing), distribution, and retail aspects of the cannabis supply chain, as well as the legal and regulatory frameworks that impact its operations. The course will also teach essential management techniques that will allow students to develop a solid understanding of the best practices for cannabis commercial production and extraction. Prerequisite: PSAS 481 or consent of instructor. Lab fee: $90. Credit Hours: 3

PSAS486 - Invasive Plant Ecology and Management (Same as FOR 486) Ecology and evolution of invasive plant species, with a focus on land management, including characteristics and biology, introduction and spread, population dynamics, community impacts and ecological interactions, and invasive plant evolution and adaptation, as well as management techniques and considerations, including biological, chemical, and mechanical control. Prerequisite: BIOL 307 or consent of instructor. Restricted to junior standing. Credit Hours: 3

PSAS487 - Soil Health Soil Health is a hands-on training course which provides an understanding of soil physical, chemical, and biological properties of soil health and interpret the results. This course also discusses role of healthy soils in crop production, environment and farm economics and their tradeoffs. Prerequisite: Students must pass CSEM 240 prior to taking this course. Credit Hours: 3

PSAS488 - Food Engineering Technology This course introduces the basic principles of facilities planning for larger operations and complexes of the food processing industry, and to gain management/ technology insight in food engineering technology. Special approval needed from the instructor. Credit Hours: 3

PSAS495 - Food and Pharmaceutical Packaging Applied packaging and food engineering principles used in packaging, storing, preserving, and transporting food and drug products. Topics include packaging functions, graphic design, printing, sterilization, and food safety. Utilization of paper, glass, plastics, laminates, and metals. Applications of machinery and equipment. Prerequisite: AGSE 371. Credit Hours: 3

PSAS497 - Agricultural Operations Management A capstone course in product support, interpretation of financial reports, preparing and monitoring budgets, time and process management, critical thinking, advanced problem solving. Prerequisites: AGSE 318, 371, 375. Credit Hours: 3

PSAS499 - Agriculture Information for K-12th Grade Teachers A general inquiry into the agriculture literacy appropriate for K-12th grade students. A framework for evaluating content appropriate for K-12th grade students in the pursuit of agriculture literacy will be developed. Special approval needed from the instructor. Credit Hours: 3

PSAS500 - Agricultural Systems Research Methodology Research methodology for agricultural education and agricultural systems technology including defining research problems, preparing project proposals and sources of data. Special approval needed from the program. Credit Hours: 3

PSAS501 - Recent Research in Agricultural Education A study of recent research and development in agricultural education. The course includes an analysis of regional and national scholarly publications, procedures and products. Special approval needed from the program. Credit Hours: 3

PSAS507 - Science Writing and Scientific Communication Course will teach "survival skills" in scientific reading, writing, communicating, and publishing for new graduate students. Topics will include database search, analysis of journal articles, abstracts, figures, and tables, Powerpoint presentations, proposals, posters, thesis writing, and preparation of journal submissions. Enrollment is open to graduate students in agriculture and the sciences and is by permission of the instructor. Credit Hours: 2

PSAS518 - Principles of Herbicide Action Chemistry and mode of action of herbicides. Nature of herbicidal action. Illustrates the various types of chemical weed control procedures in current use. The physiology of herbicidal action examined using the different mechanisms established for various chemical groups of herbicides. Prerequisite: PSAS 468, PLB 320. Credit Hours: 3

PSAS520 - Growth and Development of Plants (Same as PLB 520) Physiological control of developmental processes. Emphasis on exogenous growth-regulating compounds and their behavior in plants. Special approval needed from the program. Credit Hours: 3

PSAS524 - Gene Regulatory Networks (Same as PLB 524) An examination of the integration of genes into networks including developmental, abiotic stress response, metabolic and photoreceptor gene regulatory networks. Includes motif discovery, cis-regulatory elements, discussion of transcription factor families, RNA interference, network theory, feedback loops, cytoplasmic inheritance, maternal effect, post-transcriptional and post-translational regulation. Includes 2 lectures and a 2 hr computational bioinformatics lab per week. Prerequisite: PLB 471 or permission of instructor. Credit Hours: 3

PSAS525 - Program Development in Agricultural Education Analysis and appraisal of current trends in agricultural education program development. Attention is given to implications for educators at the high school, post-secondary and in extension education positions. Offered each year, alternating spring and summer semesters. Credit Hours: 3

PSAS526 - Cytogenetics Special approval needed from the program. Credit Hours: 4

PSAS527 - Professional Development in Agricultural Education Recent developments and trends in agricultural education are presented for review and discussion. The role of the agricultural instructor in determining educational priorities is emphasized. Offered each year, alternating fall and summer semesters. Credit Hours: 3

PSAS531 - International Agricultural Systems Introduction to world agriculture, farming systems, world crops, agricultural trade, and food production and processing. Influence of population and climate. Ethical issues surrounding rain forests, global agriculture, finance, world trade, crops and livestock, and the environment. Appropriate technologies and their social and economic impact on developing countries. Special approval needed from the program. Credit Hours: 3

PSAS543 - Soil Geomorphology A study of the interactions between geomorphic and pedogenic processes. How geomorphology influences soil formation and how soils influence geomorphology as well as how soils can be used to interpret geomorphic history. Historical development of soil geomorphology

as a field. Prerequisite: CSEM 489, PSAS 589 or GEOL 489/589 with a grade of C or better. Credit Hours: 3

PSAS544 - Soils and Human Health Exploration of the ways that soils, and to a lesser extent air and water, influence human health both positively and negatively. Soil properties and processes that control this interaction. Techniques used to explore the soil-human health relationship and needs for future advancement. Prerequisite: CSEM 240 or GEOG 303I or FOR 352 with a grade of C or better. Credit Hours: 3

PSAS545 - History and Philosophy of Soil Science An in-depth examination of what soil science is, what makes it unique as a scientific discipline, and where it fits within the scientific world. History of soil science including major scientists who influenced soil science and major points in the discipline?s development. The role that soils play in addressing the world?s major challenges and ways for scientists to communicate with non-scientists. Restricted to graduate student status in an agricultural or science degree program or permission of the instructor. Credit Hours: 3

PSAS547 - Soil and Environmental Quality A study of the interaction between plants and soil-water, and their effects on soil and water pollution. Reactions and processes governing the solubility and mobility of metals, organic compounds and nutrients in soil, sustainable management practices, and soil/water resource remediation improving environmental quality will be discussed Prerequisite: CSEM 240 or consent of instructor. Credit Hours: 2

PSAS548 - Fundamentals in Urban Soils Study of the function, structure, and management of soils and engineered soils in the urban environment. Emphasis is on urban horticulture, turf, urban forests, landscape plants and urban settings. Course will focus on understanding and implementation of basic soil concepts, with an emphasis on sustainability and management of urban soils to minimize maintenance and maximize utility. Credit Hours: 2

PSAS550 - Plant Disease Management and Epidemiology This course will provide understanding of approaches to managing plant diseases, strategies for developing and implementing integrated disease management programs, and methods for monitoring and analyzing epidemics. Credit Hours: 3

PSAS551 - Plant Nematology This course will provide an understanding of plant parasitic nematode anatomy and morphology, identification, life cycles, and management strategies. Emphasis will be placed on practical or applied aspects of information presented. Special approval needed from the program. Credit Hours: 4

PSAS555 - Nanotechnology for Agricultural and Food Industries This course will cover fundamentals and application of nanotechnology applied to the agri-food sector. Novel techniques such as encapsulation and delivery of agricultural and food molecules, diagnostics and sensing for plant and animal health will be covered. Application in production, processing and packaging of food and feed, to improving safety, quality and security will also be covered by student participation and guest lecturers. Prerequisite: basic undergraduate physics and chemistry or consent of instructor. Credit Hours: 4

PSAS560A - Field Plot Technique Design of field plot and greenhouse experiments including appropriate statistical analyses for each of the designs. Data interpretation. Prerequisite: ZOOL 557 or PLB 360. Credit Hours: 3

PSAS560B - Field Plot Technique Each of the designs discussed in (A) will be illustrated with a type problem and solved by computer processes using primarily MINITAB and SAS software programs. Prerequisite: PSAS 560A or concurrent enrollment or consent of instructor. Credit Hours: 2

PSAS561 - Control Programming Course in the logic and procedures of computer programming for automating, controlling, and monitoring of agricultural processes. Students will analyze problems, design solutions, develop software and test solutions. Students will be expected to develop a control, monitoring, and automated data collection project related to their research interests. Special approval needed from the program. Laboratory fee: $10. Credit Hours: 3

PSAS562 - Sustainable Landscape Practices Landscape practices designed and maintained with respect to natural systems offer ecological benefits, functional solutions and aesthetic value to outdoor spaces. This course will introduce best practices and construction methods of sustainable landscape

features as green roofs, green walls, and permeable pavers with an emphasis on construction details, material selection and case studies. Students will expand critical thinking skills as applied to landscape planning. Credit Hours: 3

PSAS563 - Plants for the Ecological Landscape Introduction to alternative plant selections for the urban landscape associated with the use of native plants and creating edible landscapes. Emphasis is placed on site location, whether on the ground, in containers or on a green roof, to determine best practices and appropriate choices in urban environments. Credit Hours: 3

PSAS564 - Growing Fruit in the Urban Environment Learn why and how to grow perennial fruit crops in limited and special spaces in the urban environment. The potential uses of temperate perennial fruit plants in the urban landscape are examined. Theoretical obstacles to successful fruit growing are explored. The unique advantages and disadvantages of growing long-lived perennial plants in urban landscape are examined. Methods of developing practical crop scheduling for intended outcomes (low vs. high inputs) are talked about. Efficient utilization of urban meso-climate niches are covered. Credit Hours: 3

PSAS565 - Bee Management in Urban Spaces Study of the role of bees in the urban landscape. Behavior, biology and pests of bees will be examined. Practical management of bees will be explained in connection with maintaining healthy bee ecosystems. The demonstrator species will be the honey bee Apis mellifera. Credit Hours: 1

PSAS571 - Genomics of Eukaryotes: Bioinformatics (Same as PLB 571) Genomics, Proteomics and Bioinformatics are rapidly making important contributions to the Life Science through biotechnology. An appreciation of the genomic tools is important to all in agriculture and biology. The relationships between molecular biology bioinformatics and the biotechnology industry will be explored. Short independent practical projects in genomics, proteomics or bioinformatics will be pursued. Credit Hours: 4

PSAS572 - Current Research in Agricultural Systems A study and analysis of current problems, research findings and innovations in agricultural systems. Technical reports and journal articles will be discussed and analyzed. Students will select articles related to their own research interests and begin writing a thesis or research proposal. Special approval needed from the program. Credit Hours: 3

PSAS574 - Soil Physical Properties A study of the physical properties of soils with special emphasis on soil and water relationships, chemical transport, and methods of physical analysis. Prerequisite: CSEM 240 or GEOL 220 or FOR 352 with a grade of C or better. Credit Hours: 3

PSAS575 - Introduction to Agricultural Systems Operational functions and processes that are integrated to accomplish a designated, well-defined purpose in production and processing. Topics include planning and evaluating reliability, manpower, scheduling, economy, packaging, human and animal factors. Prerequisites: AGSE 318, 371, or instructor approval. Lab fee: $10. Credit Hours: 3

PSAS580A - Colloquium in Bioinformatics for Computer Engineers Bioinformatics makes important contributions to the Life Sciences through biotechnology. The use of Bioinformatics is important to all in agriculture, biology, computer engineering and computer science involved in the analysis of genes; proteins; and genomes by computers and networks. Short independent practical projects in bioinformatics or computer networking may be pursued. Graduate Student status required. Sections A, B, and C. May be taken online. Credit Hours: 3

PSAS580B - Colloquium in Bioinformatics for Computer Engineers Bioinformatics makes important contributions to the Life Sciences through biotechnology. The use of Bioinformatics is important to all in agriculture, biology, computer engineering and computer science involved in the analysis of genes; proteins; and genomes by computers and networks. Short independent practical projects in bioinformatics or computer networking may be pursued. Graduate Student status required. Sections A, B, and C. May be taken online. Credit Hours: 3

PSAS580C - Colloquium in Bioinformatics for Computer Engineers Bioinformatics makes important contributions to the Life Sciences through biotechnology. The use of Bioinformatics is important to all in agriculture, biology, computer engineering and computer science involved in the analysis of genes; proteins; and genomes by computers and networks. Short independent practical projects in bioinformatics

or computer networking may be pursued. Graduate Student status required. Sections A, B, and C. May be taken online. Credit Hours: 3

PSAS581 - Seminar Individual presentations on subjects and problems relating to soils, field and horticultural crops, education, information, and technologies and other phases of plant, soil and general agriculture. Graded S/U only. Credit Hours: 1-4

PSAS581A - Seminar Individual presentations on subjects and problems relating to soils, field and horticultural crops, education, information, and technologies and other phases of plant, soil and general agriculture. Graded S/U only. Credit Hours: 1-4

PSAS581B - Seminar Individual presentations on subjects and problems relating to soils, field and horticultural crops, education, information, and technologies and other phases of plant, soil and general agriculture. Graded S/U only. Credit Hours: 1-4

PSAS582A - Colloquium in Plant and Soil Science-Genetics and Plant Breeding Recent developments and trends in specialized areas of plant and soil science will be discussed in genetics and plant breeding. Credit Hours: 2

PSAS582B - Colloquium in Plant and Soil Science-Research Methods Recent developments and trends in specialized areas of plant and soil science will be discussed in research methods. Credit Hours: 2

PSAS582C - Colloquium in Plant and Soil Science-Physiology and Ecology Recent developments and trends in specialized areas of plant and soil science will be discussed in physiology and ecology. Credit Hours: 2

PSAS583 - Urban Ecological Landscape Practicum Critical analysis and innovative design/solutions of urban landscape practices and urban agriculture from an ecological perspective. This practicum culminates the objective of integrating natural systems in the design and practice of sustainable landscape systems including urban food production. Learning opportunities will be presented through site visits and case studies. Students will demonstrate practical application of theories and systems through discussions and presentations. Credit Hours: 3

PSAS588 - International Graduate Studies Residential graduate study programs abroad. Approval of program required both for the nature of program and number of hours of credit. Special approval needed from the program. Graded S/U only. Credit Hours: 1-8

PSAS589 - Soil Genesis, Morphology, and Classification Development, characteristics, and identification of soils, study of profiles, and interpretation and utilization of soil survey information in land use planning. Prerequisite: CSEM 240 or GEOL 220 or FOR 352 with a grade of C or better. Credit Hours: 3

PSAS590 - Readings Contemporary books and periodicals on selected subjects within the fields of plant, soil and agricultural systems. Special approval needed from the program. Credit Hours: 1-4

PSAS592 - Special Problems Directed study of specialized areas of crop production, horticulture, soils or agricultural systems depending on the program of the student. Discussion, seminars, readings and instruction in research techniques. Special approval needed from the program. Credit Hours: 1-3

PSAS593 - Individual Research Directed research on approved projects investigating selected fields of plant, soil and agricultural systems. Special approval needed from the program. Credit Hours: 1-6

PSAS595 - Agricultural Occupation Internship Prepares coordinators to fulfill their responsibilities in selected areas in agricultural related occupations through an internship in the area of specialization and through orientation to related technical information. Special approval needed from the program. Credit Hours: 1-4

PSAS599 - Thesis At least three hours of thesis credit is required for the Master's degree under the thesis option. Special approval needed from the program. Credit Hours: 1-6

PSAS601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Plant, Soil, and Agricultural Systems Faculty

Bond, Jason P., Professor, Ph.D., Louisiana State University, 1999; 2000. Nematology and plant pathology.

Choudhary, Ruplal, Professor, Ph.D., Oklahoma State University, 2004; 2008. Biosystems Engineering.

Fakhoury, Ahmad M., Professor, Ph.D., Purdue University, 2001; 2003. Molecular plant pathology and fungal genetics.

Gage, Karla, Assistant Professor, Ph.D., Southern Illinois University, 2006; 2013.

Henry, Paul H., Associate Professor, Ph.D., North Carolina State University, 1991; 1992. Ornamental horticulture.

Jones, Karen L., Professor and Chair, Ph.D., Texas A&M University, 1996; 1999.

Kantartzi, Stella, Professor, Ph.D., Aristotle University of Thessaloniki, 2006; 2008. Plant breeding and genetics.

Meksem, Khalid, Professor, Ph.D., University of Cologne, Germany, 1995; 2000. Genomics, plant genetics, plant molecular biology and biotechnology.

Midden, Karen L., Professor, M.L.A., University of Georgia, 1983; 1988. Landscape design and sustainable landscape practices.

Pense, Seburn L., Professor, Ph.D., Oklahoma State University, 2002; 2003. Agricultural education.

Sadeghpour, Amir, Assistant Professor, Ph.D., University of Massachusetts Amherst, 2008, 2014.

Still, Steven, Assistant Professor, Ph.D., University of Illinois, 2010; 2015. Agricultural Systems and Education.

Taylor, Bradley H., Associate Professor, Ph.D., Ohio State University, 1982; 1982. Fruit production.

Walters, S. Alan, Professor, Ph.D., North Carolina State University, 1997, 1998. Vegetable production.

Emeriti Faculty

Chong, She-Kong, Professor, Emeritus, Ph.D., University of Hawaii, 1979; 1979.

Diesburg, Kenneth L., Assistant Professor, Emeritus, Ph.D., Iowa State University, 1987; 1989.

Doerr, William A., Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1973; 1965.

Klubek, Brian P., Professor, Emeritus, Ph.D., Utah State University, 1977; 1978.

Legacy, James, Professor, Emeritus, Ph.D., Cornell University, 1976; 1977.

McGuire, James M., Professor, Emeritus, Ph.D., North Carolina State University, 1961; 1993.

Olsen, Farrel J., Professor, Emeritus, Ph.D., Rutgers University, 1961; 1971.

Preece, John E., Professor, Emeritus, Ph.D., University of Minnesota, 1980; 1980.

Schmidt, Michael, Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1994; 1979.

Shoup, W. David, Professor, Emeritus, Ph.D., Purdue University, 1980; 1999.

Stitt, Thomas R., Professor, Emeritus, Ph.D., Ohio State University, 1967; 1967.

Stucky, Donald J., Professor, Emeritus, Ph.D., Purdue University, 1963; 1970.

Tweedy, James A., Professor, Emeritus, Ph.D., Michigan State University, 1966; 1966.

Varsa, Edward C., Professor, Emeritus, Ph.D., Michigan State University, 1970; 1970.

Wolff, Robert L., Professor, Emeritus, Ph.D., Louisiana State University, 1971; 1972.

Political Science

The School of Anthropology, Political Science, and Sociology offers graduate work leading to M.A. and Ph.D. in Political Science degrees. The program endeavors to accommodate the special and general interests of students through a broad curriculum, individualized programs, and varied teaching and research assistantships. The program takes a personal interest in its students throughout their period of enrollment and assists them in finding satisfying professional employment upon graduation. Graduates now hold academic appointments in 60 American universities and colleges and more than a dozen foreign institutions of higher education. The professional interests of the faculty range across most fields of political science, and have resulted in significant scholarly publications and presentations at professional meetings.

Provisions of this publication are supplemented by policies made explicit in the regulations and procedures of the Political Science graduate studies program and made available to all graduate students.

Application Procedures

The Political Science graduate program and Graduate School applications form one combined application that should be submitted electronically. The link is available at the Graduate School website. There is a supplemental application (Part Two), specific to the Political Science program that must be submitted along with the main online application. Separate forms are not required for application for financial assistance, except for Graduate School fellowships. Students will be accepted for graduate work in political science only upon approval by the program as well as the Graduate School. This program requires a nonrefundable $65 application fee; applicants must pay this fee by credit card.

All applicants must submit all post-secondary education transcripts, three letters of recommendation from persons who can evaluate the applicant's academic ability and a statement of purpose. Applicants for the M.A. and Ph.D. in Political Science programs must also submit scores on the Graduate Record Examination (GRE), verbal and quantitative tests, and an example of written work that demonstrates the applicant's analytical and writing skills. International students must have taken the Test of English as a Foreign Language (TOEFL) and are expected to have a score of at least 600 (paper score) or 250 (computer score).

Applications and supporting materials for the M.A. and Ph.D. in Political Science programs that are submitted by January will be given full consideration for admission and funding.

Master of Arts (M.A.) in Political Science

Admission

Applicants for the Master of Arts (M.A.) in Political Science program are admitted only with the approval of the graduate studies committee of the program. The program imposes requirements for admission in addition to those of the Graduate School. The program will ordinarily accept as candidates for the M.A. in Political Science degree only those applicants who: (1) have graduated from an accredited four year college or university; (2) have completed four or more courses in social science, humanities, or related disciplines; (3) have a 2.7 or better (4-point scale) overall grade point average in their most recently earned degree or, alternatively, have a 2.9 overall grade point average or better for the last two years of undergraduate work; and (4) have a 3.0 average in government or political science.

Retention

Retention is governed by the rules of the Graduate School. Students should avoid the accumulation of incomplete grades. No student with more than two incomplete grades can be awarded a graduate assistant appointment, and a student holding a graduate assistant appointment is subject to having the appointment terminated upon acquiring two or more incomplete grades.

Course Work

The Director of Graduate Studies serves as advisor to each M.A. in Political Science student until an advisory committee has been selected by the student with the approval of the director, normally no later than the middle of the student's first semester in residence. The advisory committee must approve the student's program. Each candidate for the M.A. in Political Science degree must complete six credit hours for research tools and methods requirements (POLS 500A and POLS 500B), a one credit hour pre-professional requirement (POLS 593), and six credit hours of two pro-seminars. A maximum of nine credit hours from courses offered by other programs will count toward the M.A. in Political Science degree.

Program of Study

- Pre-Professional Preparation - 1 credit hour
- Research Tools and Methods - 6 credit hours
- Pro-Seminars (2) - 6 credit hours
- Elective Coursework - 14 credit hours
- Research Paper - 3 credit hours

Research Paper

A M.A. in Political Science degree will be awarded upon completion of a research paper and the course and credit hour requirements. The research paper is developed from a paper produced in a seminar or through independent readings/research with a faculty member. Students will select an advisor for the Master's Research Paper (e.g., the person who taught the course or supervised the readings/research project). Students will enroll with this faculty member for three semester hours in POLS 591, Individual Research, for the completion of the research paper. This course can be taken concurrently with or after the research seminar. The selection of the advisor requires paperwork that must be filed with the Director of Graduate Studies. The research paper will then be submitted for evaluation to another faculty member selected in concurrence with the faculty advisor for the paper. In case of disagreement over the evaluation (pass/fail) of the paper, the graduate studies committee will appoint a third reader. The research paper normally is 30 to 80 pages in length. All research papers must have an original approval form signed by the student's committee and the program which must be submitted to the Graduate School. Guidelines for submission of the final research paper are found on the website.

Exceptions

An exception from these rules must be justified in a petition approved and signed by the student's committee members, submitted to the Director of Graduate Studies and approved by the members of the graduate studies committee at a scheduled meeting.

Doctor of Philosophy (Ph.D.) in Political Science

Admission

Applicants for the Ph.D. in Political Science must meet all applicable program and graduate school rules and admission requirements. Program regulations and procedures governing the Ph.D. in Political Science are stated in the Political Science program's "Regulations and Procedures of the Graduate Studies Program." Applicants are admitted only during the fall semester with the approval of the graduate studies committee. Successful completion of the Ph.D. in Political Science program requires that students remain in good standing with the Graduate School and make reasonable progress toward completion of the degree; form and execute the program of study established with their advisory committee; complete a total of 52 required course, elective course, and dissertation credit hours; successfully pass preliminary examinations; and successfully defend the dissertation.

Retention

Retention is governed by Graduate School rules and program standards of reasonable progress toward degree. Students failing to make reasonable progress toward completion of the degree are removed from the program.

Coursework

Each candidate for the Ph.D. in Political Science degree must complete 37 credit hours of graduate level coursework and 24 dissertation credit hours. Of the 37 credit hours of graduate coursework, students must complete one credit hour of pre-professional coursework (POLS 593), nine credit hours of research tools and methods (POLS 500A, POLS 500B, and POLS 500C, or the equivalent of each), 24 credit hours of 500-level graduate seminars in the program, a classics readings course (POLS 592A-D) and 24 hours of dissertation credit.

- **Pre-professional Requirement - 1 credit hour**
  - POLS 593 (1 CH)
- **Research Methods and Tool Requirement - 6 credit hours**
  - POLS 500A (3 CH)
  - POLS 500B (3 CH)
  - POLS 500C (3 CH)
- **Seminar Requirement – 24 credit hours**
- **Reading Requirement - 3 credit hours**
  1. POLS 592A-D
- **Dissertation Requirement - 24 credit hours**
  - POLS 600 (1 to 12 CH per semester)

Preliminary Examinations

Ph.D. in Political Science students must take written preliminary examinations in one of the following concentrations: 1) comparative politics / international relations, 2) political behavior, or 3) judicial politics. Before preliminary examinations can be scheduled, a student must have completed all coursework, have been in residence for at least one year, and have a grade point average of at least 3.5. A student may not take preliminary examinations if there are any incomplete grades on his or her record. The Director of Graduate Studies assigns two readers to write and grade each written subfield examination. When possible, at least one reader for each exam will be a member of the student's advisory committee. The Director of Graduate Studies will appoint a third reader if the first and second readers are unable to agree on a result.

Students must notify the Director of Graduate Studies and all members of the Advisory Committee in writing the semester before they wish to sit for the comprehensive examination. The Director of Graduate Studies schedules written exams to begin no later than the first week of October in fall semester and March in spring semester. The oral examination shall take place not more than two weeks after the student has passed their last written examination. All scheduling exemptions must be approved by the Director of Graduate Studies. Passing written and oral examinations advances the student to candidacy for the Ph.D. in Political Science degree. Students who do not pass exams may be allowed to retake them or withdraw from the program at the discretion of the Director of Graduate Studies upon advice from the student's Advisory Committee.

Dissertation

Students must complete a dissertation within five years following their admission to candidacy for the Ph.D. in Political Science, or the students must retake preliminary examinations. Students select five faculty members to serve on their dissertation committee. One faculty member may be from another program. The candidate's dissertation prospectus must be approved by the dissertation committee and filed with the Director of Graduate Studies.

The student works closely with the Chairperson of the dissertation committee throughout the process. The final draft of the dissertation is presented to committee members after the Chairperson of the

dissertation committee determines that it is complete and acceptable form at least two-weeks prior to the oral dissertation defense. The success of a final oral defense of the dissertation will complete the requirements for the doctoral degree. The defense must be open to the public.

All dissertations must have an original approval form signed by the student's committee and the school director. Guidelines for submission to the Graduate School are found on the website.

Application of Rules and Exceptions

The program's rules in force at the time of the student's admission to the Ph.D. in Political Science program will apply while the student is in the program unless: 1) the student voluntarily selects a newer set of rules before graduation or 2) the time between admission to the Ph.D. in Political Science program and passing preliminary examinations exceeds five years. In the latter case, the student will automatically come under the rules in force at the beginning of the sixth year and every fifth year thereafter until they pass preliminary examinations. Students requesting any exemptions to these rules must submit a petition signed by the members of their Advisory Committee to the Director of Graduate Studies for approval by the Graduate Studies Committee.

Cooperative Program with University of Illinois at Springfield

The Political Science program at SIUC has an agreement with the political studies program at University of Illinois at Springfield (UIS) to facilitate the entry of UIS political studies students into the SIUC Ph.D. in Political Science program. SIUC will accept appropriate UIS graduate credits to fulfill course work, methodology, and research tool requirements. UIS students can qualify for accelerated entry into the SIUC doctoral program after two semesters of study at UIS with 24 credit hours completed, a 3.5 GPA, two proseminars, and written evaluations from course instructors. A number of UIS faculty are eligible to serve on graduate student examination and dissertation committees. SIUC will accept up to 12 credit hours for course work, research projects, and internships completed under UIS faculty direction towards the SIUC Ph.D. in Political Science degree. Other course work, residency, and dissertation requirements of the SIUC program must be met as described in other sections of this catalog. For more detailed information, ask the Director of Graduate Studies, Political Science Program, SIUC.

Ph.D./J.D. Concurrent Degrees

Students who have been admitted separately to the Southern Illinois University School of Law and Ph.D. in Political Science programs may study concurrently for the Juris Doctor and Doctor of Philosophy degrees. Students interested in concurrent study should inform both programs before entering the fourth semester of law school. Each program will maintain records and evaluate final degree requirements as if the student were enrolled in only one program.

Concurrent Ph.D./J.D. degree students must complete a minimum of 81 credit hours of School of Law credits, which meet all law area requirements, as well as all Ph.D. in Political Science area requirements to receive the J.D. degree. Students will not be permitted to take course work outside the prescribed law curriculum during the first year of law class work. Students may enroll for both law and graduate course work during subsequent years, provided a minimum of 10 credit hours of law and 12 credit hours total are taken in any term which has law course enrollment.

Concurrent Ph.D./J.D. degree students must complete the entire first year law curriculum with a law grade point average of 2.5 before being eligible to register for any political science graduate courses; and must complete a minimum of 60 credit hours which meet the distribution requirements of the Ph.D. in Political Science program, as well as all law area requirements, to receive the Ph.D. in Political Science degree. A maximum of 9 hours of School of Law credits of a political science nature (for example: administrative law, environmental law, labor law, natural resources law) may be applied to both J.D. and Ph.D. in Political Science requirements if approved by the director of the doctoral program. All concurrent Ph.D./J.D. degree students will complete a doctoral dissertation.

Political Science Courses

POLS403 - Philosophy of Politics (See PHIL 441) Credit Hours: 3

POLS405 - Democratic Theory (Same as PHIL 405) An examination of various aspects of democratic thought, including the liberal tradition and its impact upon the United States. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Prerequisite: POLS 114 or consent of instructor. Credit Hours: 3

POLS406 - American Political Thought This course is an advanced seminar in American political thought. The course focuses on the founding ideals and practices of the American republic and how these ideals functioned in subsequent social movements, political struggles, and ideological conflicts in American political history. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

POLS410 - Reproductive Justice This course will examine reproductive rights and reproductive health, domestically and globally. Though other perspectives will be considered, the primary lens employed in the course will be reproductive justice. Reproductive justice refers to a broad conception of reproductive rights as a component of social justice, including the rights to prevent or terminate a pregnancy, to have children and parent, and to raise children in safe and healthy communities. Thus, the course will examine reproductive rights in relation to gender, racism, ableism, environmentalism, poverty, violence, law, policy, and medicine. Specific topics will include abortion, birth control, sterilization abuse, population control, and more. Credit Hours: 3

POLS435 - Judicial Process and Behavior An examination of the process by which judges in both trial and appellate courts at federal and state levels are selected and of the ways in which they make decisions. Attention to the structure of the courts. Study of the communication and impact of judicial decisions. The course provides some insight into the methods used to study judicial behavior. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. POLS 114 and 230 recommended prerequisites. Credit Hours: 3

POLS436 - Administrative Law The procedural law of public agencies, particularly the regulatory commissions but also executive branch agencies exercising regulatory functions. The exercise of discretion and its control through internal mechanisms and judicial review. POLS 114 and 230 recommended. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

POLS437 - Jurisprudence (Theories of Law) This course provides an examination of the major schools in legal thinking. We will investigate classic jurisprudential questions, including: theories of how judges decide cases, the role of morality and natural rights in determinations of law, and the role of legislative and judicial actors in the creation of law. POLS 114 and POLS 230 are recommended prerequisites. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

POLS438 - Women and the Law (Same as WGSS 438) This course is an advanced seminar in public law with a focus on gender, law and society. The course will engage with issues in feminist legal practice and the development of legal theories regarding gender. We will interrogate the relationship between theory and practice and the ways in which feminist jurisprudence has taken shape in the dynamics of this relationship. POLS 114 and 230 recommended prerequisites. Credit Hours: 3

POLS439 - Comparative Law and Courts In the United States, topics ranging from abortion to gay rights and government surveillance are inevitably "solved" by the Supreme Court. Yet for many years the Supreme Court stood alone in the world in being able to overturn government policy. Increasingly, courts all over the world-often prodded by social actors-have begun developing their own unique solutions to these constitutional questions, in many cases challenging accepted social values and mores along the way. In this course we will investigate the development of courts and constitutional rights around the world, including both national rights and international human rights. Credit Hours: 3

POLS455 - Democratization An examination of transitions to democracy from authoritarian rule in countries around the world. Emphasis is on understanding from a comparative perspective on the social, economic, institutional, political, cultural and international circumstances that promote, inhibit and even

reverse the spread of democratic forms of government. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

POLS456 - Gender and Global Politics (Same as WGSS 446) An advanced course examining gender systems and women's situations across cultures and countries. This course also studies the impact globalization has had on gender issues by looking at women's activism at international and transnational levels. Topics covered include women's political representation, gender and culture, women's social movements, gender and development, and gendered policy issues. POLS 250 recommended. Credit Hours: 3

POLS459 - Russia and the Post-Soviet States This course examines political developments in Russia and the other fourteen Soviet successor states that gained (or regained) independence following the demise of the Soviet Union in 1991. Particular attention is paid to the degree to which Soviet legacies of communist political institutions, state socialist economic policies and ethno-federalism continue to shape the politics and economics of these countries in the post-independence period. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

POLS460 - European Politics This course provides students an overview of European integration and a better understanding of the functioning of the European Union. The course opens with a survey of historical developments in both Eastern and Western Europe from 1914 to 1989. After this historical overview, the institutions and policies of the European Union are studied in detail. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

POLS466 - Latin American Politics An in-depth analysis of specific problem areas in Latin American political processes as well as comparative study of selected Latin American nation-states. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

POLS467 - Middle East Politics This course is designed to examine the regional politics and security of the Middle East and North Africa in a historical and comparative context. This course discusses the historical evolution of the modern states in the region, the dynamics of inter-Arab and Arab-Israeli politics and security, the role of ethnicity and religion in domestic and regional politics, and great powers' penetration of the region. Credit Hours: 3

POLS475 - International Law Rules and practices governing states in their relations in peace and war. Prerequisite: POLS 270 recommended. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

POLS477 - American Foreign Policy This course surveys the conduct, goals and evolution of American foreign policy since World War II. It analyzes such issues as the role of institutions, culture and individuals in the formulation of American foreign policy, the interaction between domestic and foreign politics, and the debate over American grand strategy. Prerequisite: POLS 270 recommended. Credit Hours: 3

POLS480 - Seminar in International Relations Discussion-based course analyzing empirical and normative (ethical) issues in the study of international relations. Particular emphasis is placed on developing students' critical thinking skills. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Prerequisite: POLS 270 recommended. Credit Hours: 3

POLS500A - Political Methodology Seminars in empirical research methods (A) Research Design. Course covers quantitative and qualitative empirical studies of politics. Credit Hours: 3

POLS500B - Political Methodology Seminars in empirical research methods (B) Statistical Data Analysis in Political Science I. Provides a foundation in univariate and bivariate descriptive statistics; inferential statistics including hypothesis testing about population parameters, bivariate and multivariate relationships, measures of association, and correlation; and an introduction to linear regression. Lab fee: $50. Credit Hours: 3

POLS500C - Political Methodology Seminars in empirical research methods. (C) Statistical Data Analysis in Political Science II. Provides in-depth instruction in multiple regression including assumptions of linear model, diagnostics and corrections for violation; estimating models using categorical dependent variables, nonlinear relationships, interactions, and extensions to advanced techniques as time allows. Prerequisite: POLS 500B (or permission of instructor). Lab fee: $50. Credit Hours: 3

POLS502 - Topical Seminar in Research Methods Advanced seminar in empirical research methods. Topics will vary by instructor. Lab fee: $50. Credit Hours: 3-6

POLS513 - Topical Seminar in Political Behavior Topic will vary with instructor. Student should see director of graduate studies for advanced syllabus. Credit Hours: 3

POLS516 - Pro-Seminar in Political Behavior An overview of the study of political behavior in American and comparative politics. Credit Hours: 3

POLS517 - Political Communication Provides an introduction to the academic study of media and politics. The primary objective is to introduce graduate students to seminal theory and research and contemporary contributions in the study of media, politics, and political communication. Credit Hours: 3

POLS519 - Survey Methodology for Political Science Provides an overview of survey methodology. Students will learn how to administer surveys for use in political science and public administration. Topics include psychology of asking and answering questions; constructing questions and questionnaires; evaluating surveys; criteria for survey modes; sampling frames and sampling designs; and ethics for survey research methods. Credit Hours: 3

POLS530 - Pro-Seminar in Public Law A survey of the major literature in the field of public law at the graduate level. Credit Hours: 3

POLS536 - Seminar in Comparative Public Law An examination of legal systems around the world. Credit Hours: 3

POLS538 - Topical Seminar in Public Law Advanced seminar in public law. Topics will vary by instructor. Credit Hours: 3

POLS560 - Pro-Seminar in Comparative Politics Survey of the major literature in comparative politics at the graduate level. Credit Hours: 3

POLS569 - Topical Seminar in Comparative Politics Advanced seminar in comparative politics. Topics will vary by instructor. Credit Hours: 3

POLS570 - Pro-Seminar in International Relations Survey of the major literature in international relations at the graduate level. Credit Hours: 3

POLS576 - Religion and Politics Examines empirical studies of religion and politics, including research on behavior, institutions, and movements. Topics include theories of religion, case studies of religious traditions, church and state relations, measurement of religion, and other topics on the intersection of religion and politics. Credit Hours: 3

POLS580 - Topical Seminar in International Relations Advanced seminar in empirical international relations. Topics will vary by instructor. Credit Hours: 3

POLS591 - Individual Research Selection, investigation and writing of a research paper under the personal supervision of a member of the department graduate staff. Prerequisite: completion of the appropriate pro-seminar for the field in which readings or individual research is to be done. Credit Hours: 1-9

POLS592A - Foundations of Political Science-Political Behavior Supervised readings in "classics" of the discipline. Credit Hours: 3

POLS592B - Foundations of Political Science-Comparative Politics Supervised readings in "classics" of the discipline. Credit Hours: 3

POLS592C - Foundations of Political Science-International Relations Supervised readings in "classics" of the discipline. Credit Hours: 3

POLS592D - Foundations of Political Science-Public Law Supervised readings in "classics" of the discipline. Credit Hours: 3

POLS593 - Preprofessional Seminar in Political Science Designed to give the student an introduction to the major professional roles in the discipline. The requirements of teaching, research, publication and service are covered with discussion of where each fits into the professional role requirements and examples of how each is accomplished. Required of all Ph.D. and M.A. students in political science and other teaching assistants in political science. Graded S/U only. Credit Hours: 1

POLS598 - Dissertation Prospectus Workshop in dissertation topic selection and prospectus writing; enrollment required prior to completing preliminary examinations. Credit Hours: 1

POLS599 - Thesis Maximum of six hours to be counted toward a degree. Special approval needed from the instructor. Credit Hours: 1-6

POLS600 - Dissertation Minimum of 24 hours to be earned for the Doctor of Philosophy degree. Credit Hours: 1-12

POLS601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

POLS699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Political Science Faculty

Bloom, Stephen, Associate Professor, Director of Graduate Studies, Political Science, Ph.D., University of California, LA, 2004; 2006. Comparative politics; ethnic relations and politics; Eastern European politics.

Bricker, Benjamin, Associate Professor, Political Science, Ph.D., Washington University, 2013; 2014. Constitutional law; administrative law; jurisprudence; civil rights and liberties; law and society; democratization; constitutionalism.

Comparato, Scott A., Associate Professor, Political Science, Ph.D., Washington University, 2000; 2000. Judicial process; constitutional law; civil liberties; criminal rights; judicial decision making; legal argumentation.

Grant, J. Tobin, Professor and Director, School of Anthropology, Policital Science and Sociology; Political Science, Ph.D., Ohio State University, 2001; 2001. Religion and politics; American politics; political behavior; survey methods.

Leach, Brittany, Assistant Professor, Ph.D., University of Virginia, 2020; 2022. Race, gender, theory, social movements, and public law.

Mulligan, Kenneth, Associate Professor, Political Science, Ph.D., Ohio State University, 2004; 2006. American mass political behavior; political psychology; public opinion; survey research; research methods.

Shulman, Stephen, Associate Professor, Political Science, Ph.D., University of Michigan, 1996; 1997. International relations; international security; international political economy; American foreign policy; ethnic politics.

Tilley, Virginia Q., Professor, Political Science, Ph.D., University of Wisconsin, 1997; 2014. Comparative politics; Middle East politics; Latin American politics; ethnic and racial politics.

Emeriti Faculty

Foster, John L., Associate Professor, Emeritus, Ph.D., University of Minnesota, 1971; 1975.

Jackson, John S., III, Professor, Emeritus, Ph.D., Vanderbilt University, 1971; 1969.

Professional Media and Media Management Studies

The M.S. degree in Professional Media and Media Management Studies provides students with an interest in professional media practice with an intellectual background in theory and critique of the communication industries. The faculty train students with varied professional interests to establish careers in these industries. The program produces intelligent, socially aware, and flexible graduates primed to become leaders in the communications industry.

The curriculum is designed to expose students to a broad foundation in media studies. In consultation with their committee, composed of three faculty members, students explore in detail through a series of electives one facet of professional media studies or creative practice. Students finish their program of study with the construction of a Research Report or Media Project on a topic of their choosing from within their emphasis area. The School of Journalism and Advertising allows a maximum of three years from date of enrolling in the M.S. in Professional Media and Media Management Studies program for completion of the M.S. degree. This program generally takes two years to complete.

M.S. in Professional Media and Media Management Studies

Master of Science (M.S.) in Professional Media and Media Management Studies

Program Admission

All requirements for admission to the Graduate School at Southern Illinois University Carbondale must be met. Applicants must submit the Application for Admission to Graduate Study forms, certified transcripts of all post-secondary studies, as well as three letters of recommendation from individuals who can evaluate the applicant's potential for graduate studies. Applicants must also submit a resume outlining educational and professional experience, as well as a personal statement describing their objectives for study in the program, and how such study will allow them to pursue their interests and career goals. Applicants should include an example of work that demonstrates their competency, preferably professional work, although prior academic work is acceptable. Work samples might take the form of print articles, video or audio tapes, DVDs, URLs or CDs. Applicants must clearly indicate their role(s) in any project submitted.

Generally, applicants must have a grade point average of at least 3.0 (4.0 = A) on the entire last undergraduate GPA earned at the time of application. International students whose native or first language is not English, or those with fewer than 100 graded credit hours at a U.S. college or university, must take the TOEFL and score at least 550 (paper score) or 80 (internet score) or have an IELTS score of 6.5 to be admitted. Students whose preparation is deemed lacking in certain areas may be required to take undergraduate courses to attain competency. These will not be counted toward the M.S. in Professional Media and Media Management Studies degree.

Retention

No course in which the grade is below B- shall count toward the degree or fulfillment of any requirement, but the grade will be included in the grade point average. The School of Journalism and Advertising allows a maximum of three years from the date of enrollment in the M.S. in Professional Media and Media Management Studies program to the completion of the degree. The program generally takes two years to complete.

Procedures

All M.S. in Professional Media and Media Management Studies students will undergo a faculty review at the end of Year 1. This process allows faculty to deliver formal feedback regarding the student's progress toward their degree that includes performance in courses and scholarly and creative activity production outside of the classroom.

By the beginning of the third semester in residence, each M.S. in Professional Media and Media Management Studies student will be required to form a three-member graduate committee to oversee

the capstone Research Report or Media Project. The committee must be selected this early such that the student may register for the required professional media preparation course in which the student will work closely with the faculty committee to initiate work on the final project. The student publicly defends the final project in an oral examination with the committee, generally in the middle of the fourth semester.

Program Learning Outcomes

- Students will demonstrate the ability to identify and articulate an issue, debate, or controversy in a relevant media field.
- Students will demonstrate the ability to independently synthesize existing research into a focused, analytical study of media communication.
- Students will demonstrate the ability to execute a professional media production project.
- Students will demonstrate the ability to write articulately about media.
- Students will demonstrate the ability to speak articulately about media.

Curriculum

Candidates must complete a minimum of 30 credit hours including three core courses (one in mass communications research and the other in multi-platform storytelling) and the capstone Research Report or Media Project.

Core (9 Credit Hours)

- JRNL 537: Introduction to Mass Communication Research (3 CH)
- JRNL 517: Multi-Platform Storytelling (3 CH)
- JRNL 588: Graduate Colloquium (3 CH)

Emphasis Area (15 Credit Hours)

A minimum of five elective courses is selected in consultation with at first the Director of Graduate Studies and then the student's three-person faculty committee supervising their research paper or media project. Topics of study include: media management, strategic advertising, digital documentary production, multimedia reporting, and new media production.

Research Report or Media Project Sequence (6 Credit Hours)

- JRNL 586A: Professional Media Preparation or JRNL 586B: Professional Media Preparation Research Report (3 CH)
- JRNL 589A: Media Project -OR- JRNL 589B: Research Report (3 CH)

Sample Curriculum Map

Fall Year 1 (9 Credit Hours)

- JRNL 537: Introduction to Mass Communication Research (3 CH)
- One M.S. Elective course (3 CH)
- JRNL 588: Graduate Colloquium (3 CH)

Spring Year 1 (9 Credit Hours)

- JRNL 517: Multi-Platform Storytelling (3 CH)
- Two M.S. Elective courses (6 CH)

Fall Year 2 (9 Credit Hours)

- One M.S. Elective course (3 CH)
- One M.S. Elective course (3 CH)
- JRNL 586A: Professional Media Preparation (3 CH) -OR-
- JRNL 586B: Professional Media Preparation Research Report (3 CH)

Spring Year 2 (6 Credit Hours)

- One M.S. Elective course (3 CH)
- JRNL 589A: MS Media Project -OR- JRNL 589B: MS Research Report (3 CH)

There is a required presentation at the graduate student symposium in Spring Year 2.

Preferred M.S. in Professional Media and Media Management Studies Electives

- JRNL 500: Media as Social Institutions
- JRNL 506: Law and Policy of Mass Communication
- JRNL 507: Media Management
- JRNL 509: Media Ethics
- JRNL 513: Advanced Photojournalism
- JRNL 515 : Sports Photojournalism
- JRNL 540: Documentary Journalism
- JRNL 543: Media Arts Studio Seminar
- JRNL 545: Producing the Sports Talk Show
- JRNL 549: Professional Documentary Practice
- JRNL 552: Special Topics in Media Studies
- JRNL 553: History and Theory of Media Arts
- JRNL 565: Strategic Advertising Management
- JRNL 567: International Advertising
- JRNL 568: Social Media Theory and Practice
- JRNL 576: Sports and the Media
- JRNL 577: Advanced Investigative Reporting
- JRNL 587: Critical Social Media Studies

However, other graduate-level courses in the College of Arts and Media are allowed, as deemed appropriate by the faculty committee and Director of Graduate Studies. We also encourage students to work with their faculty advisors to seek out graduate-level coursework in other programs where different perspectives will enhance our students' learning.

Professional Media and Media Management Studies Courses

JRNL400 - Media History Development of American news institutions with an emphasis on cultural, technological, and economic backgrounds of newspapers, magazines, radio, television, websites, and social media. Current press structures and policies will be placed in historical perspective. Credit Hours: 3

JRNL403 - Media Sales Provides a historical perspective of media and sales philosophies and tactics grounded in business ethics. Students learn and apply relationship selling techniques enabling them to become media sales professionals. Prerequisite: JRNL 302 and JRNL 304 with a grade of C or better. Credit Hours: 3

JRNL404 - Advanced Media Strategies and Planning Provides an understanding of the factors that influence media strategy. Emphasis will be placed on advanced concepts such as building reach patterns, new trends and tools and calculating effective frequency levels, in order to develop an effective media plan. Introduces media planning for the web and other new media options. Prerequisite: JRNL 304 with a grade of C or better. Credit Hours: 3

JRNL406 - Advertising Campaigns Conceptual synthesis and practical application of business, research, media and creative principles used in the formation of persuasive messages. Includes the development of a complete campaign for a specific advertiser. Includes all relevant target audience contact points (e.g., advertising, sales promotion, marketing public relations, event marketing, packaging) and both written and oral presentation of the campaign. Prerequisite: JRNL 304 and JRNL 405 with grades of C or better. Credit Hours: 3

JRNL407 - Social Issues and Advertising Analysis of social issues involving advertising; economic relationships, government and self-regulation, cultural effects, influence on media content and structure, role in democratic processes, international comparisons and the stereotyping of women, minorities and other audience segments. Credit Hours: 3

JRNL409 - Specialized Topics in Advertising/IMC New developments in advertising and integrated marketing communications. Topics change each term. Repeatable up to three times as long as the topic changes. Students should check specific topic and any special requirements and prerequisites before enrolling. Credit Hours: 3

JRNL411 - Public Policy Reporting Continued development of reporting skills with emphasis on the reporting of public policy issues and on use of statistics, the analysis of computerized data bases, and advanced techniques for the investigation of complex stories. Prerequisite: JRNL 311 or consent of instructor. Credit Hours: 3

JRNL412 - Intermediate Photojournalism This course expands on the fundamentals of photojournalism learned in JRNL 313. Students will explore adding elements of audio, video or flash and other lighting techniques to their images. Students will learn about changes, challenges and the ethical obligations of working photojournalists. Prerequisite: JRNL 313 or consent of instructor. Lab fee: $42. Credit Hours: 3

JRNL414 - Picture Story and Photographic Essay Production of photographic stories and essays for newspapers, magazines and news media presentations. Students discuss, research, photograph, design and write several stories and essays, while studying the work of influential photojournalists. Prerequisite: JRNL 313 or consent of instructor. Lab fee: $42. Credit Hours: 3

JRNL416 - Critical and Persuasive Writing The roles and responsibilities of the editor, editorial writer, and opinion columnist with emphasis upon editorial writing and critical thinking. Editorial problems, methods, policies, style and the fundamentals of persuasion and attitude change form the basis for study. Prerequisite: JRNL 311. Credit Hours: 3

JRNL417 - Freelance Feature Writing Identification, research and application of creative writing techniques in producing feature articles for various media. Students analyze reader appeal as well as feature story structure and methods of marketing features to various audiences and publications. Prerequisite: JRNL 310. Lab fee: $42. Credit Hours: 3

JRNL434 - Media Ethics (Same as PHIL 434) Explores the moral environment of the mass media and the ethical problems that confront media practitioners. Models of ethical decision-making and moral philosophy are introduced to encourage students to think critically about the mass media and their roles in modern society. Credit Hours: 3

JRNL435 - Advanced Graphic Communication Continues development of message design skills. Emphasizes creative solutions to the display of complex content in a wide variety of media. Prerequisite: JRNL 335 or consent of instructor. Lab fee: $46. Credit Hours: 3

JRNL436 - Multimedia Publication and Design This course continues the exploration of using computer based technologies for presentation of information to the wide audience using the interactive capabilities of the internet and other new media. Focus is on organization of information, and the production of multimedia files in a networked environment. Includes discussion of topics including intellectual property, libel, and other matters of concern to an interactive publisher. Prerequisite: JRNL 396 with a grade of C or better. Course fee: $42. Credit Hours: 3

JRNL481 - Sports Reporting Sports reporting requires two essential ingredients: the ability to write compelling prose and a good grip on news gathering and reporting techniques. This course emphasizes both and utilizes students' interest in sports to advance their reporting skills and while preparing them for sports reporting positions in the media industry. Prerequisite: JRNL 310. Credit Hours: 3

JRNL495 - Proseminar Selected seminars investigating media problems or other subjects of topical importance to advanced journalism and advertising majors. Seminars will be offered as the need and the interest of students demand. Restricted to College of Arts and Media majors with 4th Year standing or consent of instructor. Credit Hours: 1-6

JRNL500 - Media as Social Institutions Provides an introduction to major issues involving media in contemporary societies. Multi-disciplinary in nature, the course introduces major theoretical perspectives used in reviewing media productions and activities and the relationships among media organizations and practitioners and other institutions of society. Credit Hours: 3

JRNL506 - Law and Policy of Mass Communication Focuses on free expression in journalism and entertainment across the media. Topics may include news gathering techniques, intellectual property, the Internet, and governmental regulation. The course pays special attention to the tension between what is legal and what is ethical. Credit Hours: 3

JRNL507 - Media Management Analysis of a variety of media industries, including industry structures, and the industry processes of media development, production, and distribution. Attention to management of media companies across sectors as the industry adjusts to economic and technological change. Credit Hours: 3

JRNL508 - Conceptual Foundations of Research Strategy Analysis and evaluation of conceptual frameworks underlying empirical research strategies, positivist, textual and qualitative, commonly used in media and internet research. Issues in multi-method research strategies are reviewed. Ethical implications are debated. Credit Hours: 3

JRNL509 - Media Ethics Overview of ethics philosophies and accountability tools for the mass media. Areas to be studied include journalism reviews, ethics codes, ombudsmen, media critics, news councils, and public/civic journalism. Covering issues in journalism, photojournalism, public relations, advertising, new media, and "infotainment. Credit Hours: 3

JRNL511 - New Media Production Investigate how the Internet works, explore relationships among design, technology, and user experience while developing web sites, information architectures, interface behaviors, and navigation systems. Topics include: HTML & XHTML authoring, Cascading Style Sheets, Javascript, open source software, and incorporating sound, video, and images into web pages. Issues of privacy, legal and ethical responsibilities for consumers and producers of web content. Credit Hours: 3

JRNL513 - Advanced Photojournalism Emphasis on in-depth photo journalistic reporting. Students research, write and photograph picture stories. Examines ethics, history and social role of photojournalism domestically and internationally. Digital imaging and an introduction to full-motion video and other multimedia storytelling tools. Students who have completed JRNL 413 are not eligible to enroll. Equipment fee: $100. Credit Hours: 3

JRNL514 - Theories of Mass Communication and Media An advanced theoretical engagement with the field of mass communication research, media studies, and media arts. The course covers principal theoretical approaches, including the empiricist, positivist paradigm in mass communication research; critical media studies; film and television studies; and cultural studies. Credit Hours: 3

JRNL515 - Sports Photojournalism Students develop skills in producing, editing, and captioning high-quality feature and action photographs from live sporting events. Students will learn how sports photography has developed over the last century. Students who have completed JRNL 415 are not eligible to enroll. Credit Hours: 3

JRNL516 - Networked Art History, theory, and practice of digital media as an online art form. Examination that results in students producing art work in linear and non-linear hypermedia narrative, network conceptualism, and generative software. Issues include identity, location, collaboration, surveillance, hacktivism, tactical media, immersion, game design, media synthesis. Lab fee: $75. Credit Hours: 3

JRNL517 - Multi-Platform Storytelling Students write and produce short fiction or non-fiction stories using digital media. Emphasis on storytelling development and story structures, and advancing one's technical skills across multiple media platforms. Projects will be incorporated into multiple delivery platforms such as the web, download and/or social media. Students will experience editorial production of artifacts gathered as they shape a variety of media into stories for delivery on web via class magazine and social media. The productions will target various platforms, from web to mobile devices. All students

will build on a range of production skills extending beyond reporting, writing, photography, graphics, audio capture and video shooting. Course fee: $50. Credit Hours: 3

JRNL522 - Sound Art Studio This studio-based course offers students the opportunity to explore sound as a medium of artistic practice and intellectual inquiry. Assignments for the course emphasize how and why sound art is created in a variety of modalities including: installation, performance and improvisation. The course is also a forum for the exploration of contemporary and historic approaches to sound art through phonography, radio art, DIY electronics and other platforms. During the semester, listening and critique sessions will be used to evaluate student creative responses. Additionally, written responses to assigned readings will also be used to help facilitate discussions and critiques. Equipment Usage & Lab fee: $75. Credit Hours: 3

JRNL523 - Topics in Broadcast News This is a special production topics in studio production and practices course for MFA's in Media Arts that focuses on specialized production techniques, topics, techniques, and formal approaches to media making. The course offers the opportunity to gain new techniques and build skills through the use of potentially unfamiliar production equipment and approaches. The class encourages students to explore the edges of their disciplines by providing a focused framework for formal investigation and experimentation. Equipment Usage & Lab fee: $75. Credit Hours: 3. Credit Hours: 3

JRNL524 - Topics in Investigative Practices The course will use a topical starting point for critical study of the histories and philosophies associated with various investigative journalism procedures and practices. Course fee: $75. Credit Hours 3. Credit Hours: 3

JRNL531 - Critical Research Methods in Media Arts This course introduces students to critical and interpretive research methods and techniques for the study of media arts and culture. It focuses on interdisciplinary approaches and covers a range of humanities-based methods and theoretical perspectives. Credit Hours: 3

JRNL532 - Quantitative Research Methods in Mass Communication Advanced exploration of quantitative research methods to write a professional article suitable for publication or a chapter in an academic thesis. Covers methods such as sampling, surveys, experiments, content analysis, and statistics. Focuses on research design, formulating research questions, reviewing and applying appropriate literature in the field, hypothesis formulation, data acquisition, and discussion and analysis of results. Credit Hours: 3

JRNL534 - Qualitative Research Methods An introduction to the intellectual underpinnings, epistemology, and methodologies of qualitative research. The course focuses on critical and interpretive approaches to researching media industry structures, artifacts, audiences, and producers. Credit Hours: 3

JRNL537 - Introduction to Mass Communication Research Foundations course to introduce MA and MS students to the conceptual practices of research. Students will learn how to evaluate primary and secondary sources, and use this research to write papers and reports. The course demonstrates the steps of a research project: writing a proposal, reviewing the literature, designing the research instruments, collecting data, and analyzing results. The course introduces qualitative and quantitative research methods. Credit Hours: 3

JRNL538 - Critical Analysis of Discourse Critical Discourse Analysis is a theory-based methodology which takes as its unit of analysis the entire 'utterance' (e.g. news bulletin, newspaper article, Facebook posting, a hashtag). Its methods are closer to literary and rhetorical criticism than the quantitative word count of content analysis. This methodology allows the research to unveil ideological motivations in language use and in images, and can be applied to most forms of media texts including social media and video games. Credit Hours: 3

JRNL540 - Documentary Journalism The Documentary film has a rich history in America. This course will cover the history of the American Documentary form. Emphasis on connections between critical theory and media production Students will embrace the conceptual and hands-on process of researching, writing and producing independent documentary video, focusing on critical arts practice. Credit Hours: 3

JRNL543 - Media Arts Studio Seminar A forum for the pursuit of creative projects in the media arts. May be repeated as topic changes. Restricted to CMCMA MFA or PMMM major or consent of instructor

or director of Graduate Studies in Mass Communication and Media Arts. Laboratory fee: $50. Credit Hours: 1-3

JRNL545 - Producing the Sports Talk Show This course is an intensive hands-on production class. Students will produce two half-hour studio shows with edited features that will broadcast on WSIU-TV. Advanced field production techniques will be used when creating edited features. Students who have completed JRNL 445 are not eligible to enroll. Credit Hours: 3-6

JRNL549 - Professional Documentary Practice Production students will work with experts from a variety of specializations across campus to produce short form documentaries for broadcast on WSIU. A comprehensive overview of producing successful programs for the industry taking the topic from scripting to filming to editing. Advanced video or audio production skills are required. Credit Hours: 3

JRNL552 - Special Topics in Media Studies This course provides an in-depth study and discussion of selected topics in media studies. Topics vary and will be announced in advance. This course may be repeated when the topic differs. Credit Hours: 3

JRNL553 - History & Theory of Media Arts A survey of media history, from oral storytelling and cave paintings to social media and video games. Situates media in their historical contexts, with special attention to articulations among media technologies, aesthetic forms, cultural practices, and social formations. Analyzes media practices through foundational and contemporary theories from media studies and its interdisciplinary interlocutors. Credit Hours: 3

JRNL561 - Media, Social Movements, and Social Change Social change" is a multi-dimensional concept and yet also a bedrock of democracy. Much more than an act or action, social change is a process of negotiation between those who have and those who do not. This course is a theoretical and practical exploration of both mainstream and alternative media's role in political and social movements and their push for social change. Numerous scholars have theorized the social change potential of mediated communication and mass production, and these theories of social change have important implications for critical arts practice and the study of media and the media industries. The objective of the course is to join theories of social change with the interests of the students, allowing them flexibility and freedom to develop their current projects in the area of social change. Credit Hours: 3

JRNL563 - Globalization and the Media Debates about globalization from historical, theoretical, and critical perspectives. The major uses of communication technologies in international economic, political and cultural processes. Topics include regional and global trends, trade regimes, global policy bodies and policy issues; global media influence. Credit Hours: 3

JRNL565 - Strategic Advertising Management Problem solving through strategic advertising communications and integrated marketing techniques, including product research, branding, public relations, sales and promotion, social media, and direct media campaigns. The focus is on business strategy and planning. Students will concentrate on targeted, creative digital media strategies to execute an integrated marketing campaign for a local or national client. Credit Hours: 3

JRNL567 - International Advertising An investigation of how organizations market in Marshall McLuhan's 'Global Village'. Students will consider how political, social, economic, cultural, and technological factors influence advertising around the world. Explorations of how big data and artificial intelligence create advertising opportunities on multiple digital and social media platforms. Students will learn theories, business models, data analytics, branding, and explore case studies of major global brands. Credit Hours: 3

JRNL568 - Social Media Theory and Practice Explores social media from various perspectives. Topics will cover history and development of social media, social advertising/marketing, citizen journalism, social media and health communication, and other issues related to social media such as privacy, gaming, interface design, identity, etc. Students will gain hands-on experience with social media. Credit Hours: 3

JRNL576 - Sports and the Media This course will expose students to the rapidly expanding and complex world of sports business, with an emphasis on sports communication and promotion. Also the transformation of sports media in relation to economic, regulatory, and technological transformations. Students who have completed JRNL 488 are not eligible to enroll. Credit Hours: 3

JRNL577 - Advanced Investigative Reporting This advanced course in investigative and enterprise reporting delves into the techniques and strategies essential for impactful journalism. Students will refine their skills in obtaining and analyzing public records and data, conducting interviews with reluctant sources, managing complex information, and drafting and self-editing to produce a polished first draft. Students who have completed JRNL 477 are not eligible to enroll. Credit Hours: 3

JRNL584 - Supervised Independent Studio Supervised Independent Studio provides a critical foundation for students by establishing a formal structure for critiques of the student?s work that takes place over the course of a semester. Credit Hours: 6. Credit Hours: 6

JRNL586A - Professional Media Preparation Pre-production work for the M.S. media project. Directed by a committee of three, the chair of which must be a member of the graduate faculty in the School of Journalism and Advertising. Students must present and defend the proposal for their media project to the committee in a public forum. Restricted to students in the Professional Media M.S. degree program in SOJA. Lab fee: $50. Credit Hours: 3. Credit Hours: 3

JRNL586B - Professional Media Preparation Research Report Preparation work for the M.S. research report. Directed by a committee of three, the chair of which must be a member of the graduate faculty in the College of Mass Communication and Media Arts. Students must present and defend the proposal for the research report to the committee in a public forum. Restricted to students in the Professional Media M.S. degree program in CMCMA. Credit Hours: 3

JRNL587 - Critical Social Media Studies A theoretical, critical approach to the study of social media. Students identify critical media studies theories and concepts and apply them to the study of social media. Both diachronic and synchronic perspectives intersect within the course. Students learn the historical context in which social media platforms have evolved. Historical knowledge informs the analysis of contemporary case studies regarding social media policies, social media discourse and politics, social media ownership, and other pertinent topics. Credit Hours: 3

JRNL588 - Graduate Colloquium An introduction to graduate studies via encounters with the research and creative disciplines related to Mass Communication and Media Arts. Weekly meetings wherein individual faculty members introduce students to their research and creative work. The course will also serve as a forum in which students discuss their own research and creative work in an interdisciplinary setting. Guest lectures and presentations by visiting scholars and creative artists as become available. Setting for both the faculty and graduate student research and creativity colloquiums. Satisfactory/ Unsatisfactory (S/U) grading only. Credit Hours: 3

JRNL589A - MS Media Project Media project directed by a committee of three, the chair of which must be a member of the graduate faculty in the College of Mass Communication and Media Arts. The media project is a student's original creation which breaks new ground in mass communication and media arts. The media project must be submitted to the Graduate School. Students must present and defend their final media project to the committee in a public forum. Prerequisite: JRNL 586A with a grade of B- or better. Restricted to students in the Professional Media M.S. degree program in CMCMA. Equipment fee: $50. Credit Hours: 3

JRNL589B - MS Research Report Research report directed by a committee of three, the chair of which must be a member of the graduate faculty in the College of Mass Communication and Media Arts. A research report synthesizes the existing literature on a specific topic in mass communication to enable the student to create new knowledge about the subject. The research report must be submitted to the Graduate School. Students must present and defend their final report to the committee in a public forum. Prerequisite: JRNL 586B with a grade of B- or better. Restricted to students in the Professional Media M.S. degree program in CMCMA. Credit Hours: 3

JRNL591 - Readings Supervised readings on subject matter not covered in regularly scheduled courses. Graduate students limited to three credits per semester. Consent of instructor. Credit Hours: 1-3

JRNL594 - Practicum Practicum Study, observation and participation in activities related to the fields of Mass Communication and the Media Arts such as internships in related professional organizations. Students who have completed JRNL 494 are not eligible to enroll. Credit Hours: 3

JRNL596 - Independent Study Supervised research or independent creative work, the area of study to be determined by the student in consultation with instructor. Consent of instructor. Credit Hours: 1-3

JRNL599 - Thesis Credit Hours: 1-6

JRNL600 - Dissertation Credit Hours: 1-32

JRNL601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

JRNL699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Professional Media and Media Management Studies Faculty

Freivogel, William H., Professor, Media Law, J.D., Washington University Law School, 2001; 2006. Journalism, media law, public affairs and policy.

Han, Dong, Associate Professor, Media and Communication, Ph.D., University of Illinois, 2011; 2012. Intellectual property and media, medical history and political economy, international communication and communication technology.

Jeffords, Benjy, Instructor, Radio and Television Broadcasting B.A. Southern Illinois University, 2002. Videography, Broadcast Production, Visual Story Telling.

Jia, Xinle, Assistant Professor of Advertising, Journalism and Advertising, Ph.D., University of Wisconsin-Madison, 2023, M.Phil., The University of Hong Kong, 2016, B.A. Fudan University, 2014. Social media, media effects, strategic communication.

Karan, Kavita, Professor, Advertising and Marketing, Ph.D., University of London, 1994; 2009. Political communication, advertising and market research, international communication, media and children, health communication.

Lescelius, Bridget, Instructor, Advertising and Branding, M.B.A., Virginia Polytechnic Institute and State University, 1996; 2014.

Parker, Molly, Assistant Professor of Journalism, Public Affairs Reporting, M.A., University of Illinois Springfield, 2004, B.S. Southern Illinois University, 2003. Investigative, policy reporting, long-form storytelling.

Rendleman, Julia, Assistant Professor of Photojournalism, Media Management & Media Management Studies, M.S., Southern Illinois University, 2012. B.S., Loyola University New Orleans, 2003. Photojournalism, long-form visual storytelling.

Thompson, Jan, Professor and Director of the School of Journalism and Advertising, Documentary production, M.G.S., Roosevelt University, 1998; 2000. Video production, documentary, sports production.

Emeriti Faculty

Babcock, William A., Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1979.

Dolan, Mark, Associate Professor, Emeritus, M.A., Syracuse University, 2008.

Greer, Phillip, Senior Lecturer, Emeritus.

Helleny, Joey, Senior Lecturer, Emeritus, M.S.Ed., Southern Illinois University, 2004.

Jaehnig, Walter, Associate Professor, Emeritus, Ph.D., University of Essex, 1974.

Lowry, Dennis, Professor, Emeritus, Ph.D., University of Iowa, 1972.

Stone, Gerald C., Professor, Emeritus, Ph.D., Syracuse University, 1975.

Psychology

The School of Psychological and Behavioral Sciences offers graduate work leading to the Doctor of Philosophy degree in Psychology with concentrations in the following areas: Applied Psychology, Behavioral Analysis and Therapy, Brain and Cognitive Sciences, and Counseling Psychology.

The goal of graduate study in Psychology at SIUC is to develop psychologists who will have a broad perspective and scientific sophistication as well as the requisite skills to advance the field of psychology and meet changing needs. The program emphasizes formal course work in the core curriculum and in the concentrations, preprofessional activities in training assignments, research, teaching, and practicum opportunities.

The primary emphasis is on doctoral training, for which the Master of Arts degree is a prerequisite earned en route to the doctorate. The program does offer Master of Science degree for students enrolled in an accelerated B.A./M.S. program. In addition, there is a non-thesis M.S. in Psychology option.

Admission and Advisement

The Psychology program and Graduate School applications form one combined application that will be submitted online through the Graduate School website. The link to the Graduate School application can be found on the Graduate School website by clicking “Apply.” There are supplemental application items, specific to the Psychology program that must be submitted along with the main online application. Separate forms are not required for application for financial assistance, except for Graduate School fellowships. Students will be accepted for graduate work in psychology only upon approval by the program's admissions committee as well as the Graduate School. Evaluations of applicants by the program's admissions committee are based on information from the application form, GRE scores (for some programs), transcripts, letters of recommendation, and personal/research statement. This program requires a nonrefundable $65 application fee; applicants must pay this fee by credit card through the online application.

Upon admission to the program, each student is assigned to a faculty adviser, who assists in academic matters, including the planning of the student’s program of study: required courses, planned electives, anticipated dates for fulfillment of specified requirements, and so forth.

A new adviser may be assigned to a student for two reasons: (a) the student or adviser may request a change of adviser; (b) the student may change to a different area of concentration. Requests for a change of adviser should be made in writing to the student’s area committee. To change area of concentration, the student should petition the sub-committee of the new area.

Core Curriculum

All students must complete the following minimum requirements which may be supplemented by requirements specific to concentration areas:

1. Two of three courses from PSYC 522, PSYC 524, and QUAN 507.
2. PSYC 509 for students who have not completed a course in the history and systems of psychology.
3. Thesis (PSYC 599) registration; students enrolled in the master’s degree program should complete the thesis requirement (PSYC 599, four to six hours) by the end of the second year.
4. (Students in the Counseling area only) one course from each of the four core coverage areas specified by the American Psychological Association. A list of courses which meet core coverage requirements is maintained by the program.

Areas of Concentration

Applied Psychology Concentration

The Applied Psychology (AP) concentration program is designed for students interested in research careers dealing with applied problems in non-academic and academic settings. The program provides students with training in research and data analysis methods that can be applied to a variety of problems in the public and private sectors.

Students in the AP concentration take the following courses in addition to program requirements described above:

1. Statistics and measurement: PSYC 522, PSYC 524, PSYC 525, and either PSYC 529 or PSYC 575
2. Program evaluation and research methods: PSYC 523, and PSYC 564
3. At least three of the following Psychology content courses: PSYC 511, PSYC 515, PSYC 553, PSYC 565, PSYC 566, or other courses approved by the faculty.

In addition AP students take PSYC 571 (Proseminar in Applied Experimental Psychology) during their first semester in the program, and PSYC 569 (Applied Research Consultants) from their second year until admission to the doctoral program or for two summers and four semesters, whichever is longer. AP students develop a specialization consisting of at least three graduate courses, additional readings, and/or independent study. A specialization plan and paper is developed with and approved by a specialization committee.

Brain and Cognitive Sciences Concentration

The Brain and Cognitive Sciences program (BCS) emphasizes cognitive behavior approached from a combination of developmental (infancy and childhood, adolescence and aging), neurobiological (neurophysiology, neuropsychology, genetics), behavioral (human and animal experimentation) and computational (neural networks, statistical analyses, intelligent software agents) perspectives. Students specializing in Brain and Cognitive Sciences typically pursue careers in academic settings such as departments/schools of psychology, neuroscience, cognitive science or medical schools, or in non-academic settings such as pharmaceutical companies, hospitals, or in government research facilities.

In addition to program requirements, BCS students will take four courses from the following three pairs: PSYC 511 and PSYC 515 (Cognitive), PSYC 554 and PSYC 555 (Developmental), and PSYC 514 and PSYC 516 (Biopsychology). They must choose at least one course from each pair. Students will get experience with at least two different research methodologies (behavioral/cognitive experimentation, computational modeling, neurobiological experimentation, psychological assessment) either through individual research or appropriate course work, and must enroll for PSYC 572 (BCS Proseminar) throughout their tenure in the program. An additional four to six courses are required for the specialization.

Counseling Psychology Concentration

The Counseling Psychology program, accredited since 1961 by the Accreditation Committee, Education Directorate of the American Psychological Association, is designed to teach students a wide range of skills which will prepare them to function as scientist-practitioners. Graduates are qualified for employment in a university setting (either in an academic unit or a counseling center), in hospitals, community agencies, and educational and correctional institutions. The student is expected to develop competence in counseling, psychological assessment, research, and teaching. The required courses are as follows: PSYC 523, PSYC 525, PSYC 526, PSYC 530, PSYC 536, PSYC 537, PSYC 538, PSYC 540, PSYC 548, PSYC 553, PSYC 558, PSYC 561, PSYC 594F, and PSYC 598.

Research, Practicum, and Training Assignments

Research or practica is required in each area of concentration. In addition, each term the student must be engaged in a training assignment which supplements formal course work by professional activities such as research, teaching, or clinical service. The assignment varies according to the needs, professional goals, and competencies of the student, and increases in responsibility as the student progresses. The assignments require from 10 to 20 hours of service per week. This is a degree requirement of all students each term and is independent of any financial support. Therefore, each term the student signs up for one hour of PSYC 597.

Thesis and Dissertation Committee

Because the thesis or dissertation project and the proposed committee composition must be formally approved by the School Director, the student should submit the proposed committee in writing for approval by the chair well in advance of the prospectus meeting.

A master's thesis committee consists of three or more faculty members and a dissertation committee of five or more faculty members (counting the committee chair). Committee chairs and a majority of committee members must be tenure-track faculty of the Psychology program. Thesis and dissertation committees must have one Psychology faculty member outside the student's program area—to better reflect the diversity of the program's perspectives. Dissertation committees also must have a faculty member from a program other than Psychology.

Prospectus

Prior to starting the empirical research on a thesis or dissertation, a student must submit a written prospectus to each member of the committee at least one week prior to the prospectus meeting. A carefully written prospectus ordinarily serves as the opening chapters of the thesis or dissertation.

The approval of the prospectus indicates that the committee members accept the research design. Faculty members not on the committee may attend the prospectus meeting, or may forward suggestions and comments to the committee chair prior to the meeting. Prospectus meetings are not scheduled during the recess period between semesters.

If the prospectus is approved with no major modifications, a letter of approval, noting any minor modifications is sent by the committee chair to the School Director for filing in the student's permanent records. If major modifications are needed, the student may be asked to rewrite the prospectus, circulate the revised prospectus and arrange another committee meeting. A prospectus must be approved at least one semester before graduation.

Style

The student has the option of writing the thesis or dissertation in the traditional fashion or in journal style. In the latter case, ancillary material (full survey of literature, subsidiary analyses, etc.) are placed in the appendices, although figures and tables appear in the text. The Psychology program prefers that citations, table headings, etc. follow the APA style (Publication Manual of the American Psychological Association, latest edition, Washington, D.C.).

General Procedures

Students should not register for PSYC 599 or PSYC 600 hours until they have supervisors and will actually be using University facilities, or faculty time for assistance and direction.

Prior to graduation (a minimum of five weeks for master's students and eight weeks for doctoral students), and at least one week prior to the oral defense meeting, the candidate must submit a final draft of the thesis or dissertation to the full committee so that appropriate suggestions can be made.

Number of Copies

Two bound copies of the complete thesis or dissertation are required: one for the committee chair, and one for the School's thesis and dissertation library.

Oral Examination

The Psychology program requires an oral examination, conducted by the student's thesis or dissertation committee, for each M.A. and Ph.D. candidate. The examination covers the thesis or dissertation and also includes questions designed to ascertain the student's general competence in psychology.

Oral examinations are open to all interested observers. Notices of the time and place of the examination, and abstracts of the thesis or dissertation, are circulated throughout the program and, in the case of Ph.D. examinations, throughout the University. Two copies of the abstract should be given to the Graduate Program Coordinator at least one week prior to the oral defense meeting.

The Graduate Program Coordinator delivers the oral examination form and the thesis or dissertation evaluation form to the committee chair the day before the orals are scheduled. Orals meetings are not scheduled during the recess period between semesters.

General Information

Waiving of Course Requirements

Students who wish to have a course waived should consult with their advisers, the course instructor, and the head of their major area. One of the following recommendations will be made: (a) the course will be waived; (b) a proficiency examination (theoretical, practical, or both) will be given prior to deciding on the student's request; (c) the request will be refused and the student will take the course. A student may appeal the decision by writing a letter to the School Director requesting that the case be reviewed.

Grading Policies

Any student who receives a grade of *Inc.* is responsible for contacting the instructor to determine the time allowed for the completion of the course (normally not more than one year).

For internal records to be used within the program only, pluses and minuses are added to the standard *A*, *B*, *C* grades reported to the Office of Admissions and Records.

Student Evaluation

All students are evaluated by the faculty at least once a year, normally during fall semester. New students are evaluated in the beginning of spring semester (first year) and students on school probation at times specified in their probation. The evaluation is based on the following criteria: (1) academic performance on a 10 point rating scale (*A*+ = 10); (2) ratings on the training assignment; and (3) progress toward the degree. The student's evaluation may also be based upon evidence relating to professional attitudes or ethical behavior.

Each student's adviser informs the student of the evaluation and of any faculty recommendations as soon as possible after the meeting. In addition, the School Director writes a formal letter notifying the student of the evaluation and recommendations.

Master of Arts (M.A.) or Master of Science (M.S.) in Psychology

The master's degree requires a minimum of 48 credit hours of acceptable graduate credit, distributed according to the requirements of the student's major area, and the completion of an approved thesis or research paper. The master's thesis may be either original research or the replication of an important study. The master's degree is a prerequisite for the doctorate. For additional information on the course of study required for the master's degrees, contact the Director of the School of Psychological and Behavioral Sciences.

Accelerated M.S. in Psychology - Applied Psychology Concentration

The accelerated five-year B.A./M.S. degree program is designed to provide practical experience in consulting and program evaluation as well as an educational background in research methods, statistics and program evaluation. This program leads to B.A. and a M.S. in Psychology. It is designed to provide a pathway to complete a graduate degree with an additional year of graduate studies beyond the undergraduate degree. The accelerated M.S. degree has a concentration in Applied Psychology and is a non-thesis degree program.

During the Spring semester, undergraduate students who have junior status will be able to apply to enter the Master's program. To complete this five-year plan, 120 credit hours are required for the bachelor's degree and an additional 31-32 credit hours for the master's degree. Nine credit hours are double counted toward an undergraduate and a Master's degree. Twenty-two to twenty-three credit hours are taken after undergraduate graduation.

The option requires satisfactory completion of nine credit hours in 400-level Psychology courses. This will be followed by 13 required statistics and methods credit hours of coursework [10 credit hours from PSYC 522, PSYC 523 and POLS 519; and 3 elective credit hours from PSYC 505, PSYC 507, PSYC 574, PSYC 421, BA 540, POLS 519, or PADM 539 (POLS 519 or PADM 539 can only be applied to this requirement if not taken as required credit hours for statistics and methods above)]. Students will also complete 10 credit hours of coursework in Applied Research Consultants (the Applied Psychology in-house consulting firm). Students will complete 1 credit hour in Spring semester of their senior year which will not count towards the completion of the master's degree. This will be followed by 9 credit hours in the Fall and 3 credit hours in Spring of their fifth year. Students will complete a written report describing their accomplishments and completed projects in Psychology at the end of the master's program.

This accelerated master's degree is designed for students who desire an advanced degree including consulting experience and training in research methods, statistics and program evaluation that may lead to higher entry positions in their chosen career path. An associated benefit of the accelerated program to students that have advanced degree aspirations is the ability to save time and money by completing their studies more quickly at the same institution and double-counting 9 credit hours. This accelerated BA-MS degree program is not designed for students who may wish to transition to a Ph.D. program in Psychology.

Doctorate of Philosophy (Ph.D.) in Psychology

Admission

Admission to the Ph.D. program requires a master's degree, a grade point average of 3.25 or above in graduate studies, and acceptance by the program. A student who receives the master's degree from SIUC must apply formally to the Graduate School for admission to doctoral-level study, and must be approved by the faculty.

Records of students entering the program with a master's degree from another institution are evaluated by the program admissions committee which notes deficiencies, recommends methods for removing them, and specifies a time limit to do so. Such deficiencies must be removed before the student can be classified as a Ph.D. candidate. The student is recommended to the graduate dean for admission to Ph.D. candidacy only when core curriculum requirements and the preliminary examination(s) have been satisfactorily completed.

Accelerated Entry into Ph.D. Degree Program

Students enrolled in the M.A. degree program may be admitted directly to the Ph.D. degree program following program certification of graduate work comparable to a master's degree in psychology at SIUC. Accelerated entry is acceptable only for students who have completed substantial work in other programs in psychology which grant the Ph.D. degree but not a master's degree. Students seeking accelerated entry may apply after enrollment at the master's level for one semester. Applications for accelerated entry are reviewed and decided by a faculty committee appointed by the School Director.

Internship

Doctoral students who are concentrating in counseling psychology must complete an approved internship. The internship is viewed as an integral part of training and the Ph.D. degree is not awarded until the completion of all academic work and the internship. Students are responsible for scheduling and obtaining internships. Internships in counseling psychology require a full-time experience either for one calendar year, or for two years of half-time experience. Counseling students are approved for internship after completion of their master's degree, major and minor preliminary examinations, and all courses required for the Ph.D.

Students in applied psychology are encouraged to complete an internship in an applied setting away from campus that is selected with the help of their faculty advisers in their major area of concentration.

Preliminary Examinations

Ph.D. candidacy is contingent upon successful completion of a written and/or an oral preliminary examination in the student's major area of concentration. The examination is composed primarily of questions requiring substantive knowledge of empirical and theoretical topics. Questions are not limited to course content.

Every student is expected to pass each examination on first taking. In any event a second failure on a preliminary examination will result in a thorough faculty review of the student's entire academic record in order to determine whether the student will be allowed to continue in the program and, if continued, under what conditions.

Major/Comprehensive

Fields of concentration for the major/comprehensive preliminary examination are listed below:

1. **Experimental.** Either applied psychology or brain and cognitive sciences may be selected for the comprehensive examination.

Major/comprehensive examinations are scheduled by the program.

1. Experimental. Examinations will be given once a term.

Notices are posted well in advance and students are expected to notify the Graduate Program Coordinator of their intention to take the examination. Examination committees are appointed by the chair.

In addition to the major/comprehensive preliminary examination, a specialization paper is required in the experimental area.

Dissertation

Each candidate for the Ph.D. degree must write a dissertation showing high attainment in independent, original scholarship and creative effort. A total of 24 credit hours is required. A maximum of six hours of dissertation credit taken prior to passing the major preliminary examination will count. A student may not hold a prospectus meeting before successful completion of the preliminary examination.

Psychology Courses

PSYC402 - Psychology and Medicine This course is an extensive review of psychology concepts as they relate to medicine and medical training. The overall goal of this course is to provide review of psychology concepts as they appear in the new form of the MCAT. Credit Hours: 3

PSYC405 - Psychology and Law (Same as CCJ 405, PSYC 505) This course surveys psychological theory and research as applied to the cognitions, emotions, and behavior of individuals in the legal system. The implications of social psychology for legal settings, such as police departments, courtrooms, and jury rooms are explored. Credit Hours: 3

PSYC407 - Theoretical Issues in Learning An introduction to the major theoretical issues in learning and their importance. A brief review of the history of such problems will be followed by a summary of the current research concerning these issues. Traditional figures in learning theory will be considered within the context of their positions on specific questions. Prerequisite: PSYC 211 and PSYC 309 or equivalent or graduate status. Credit Hours: 3

PSYC409 - History and Systems of Psychology A review of the conceptual and empirical antecedents of modern psychology. Prerequisite: PSYC 211. Restricted to 4th Year or graduate standing. Credit Hours: 3

PSYC410 - Evolutionary Psychology The class provides an overview of major areas of Evolutionary Psychology and consideration of recent topics from related fields. Key concepts and principles of

evolutionary psychology will be discussed in relation to cognitive, biological/neurological, developmental, personality, and social psychology. Topics include (but are not limited to): historical foundations of evolutionary psychology, research methods, problems of survival, challenges of sex, mating and marriage, parenting and kinship, group cooperation and conflict, and the applications of evolutionary psychology to modern life. Classic and recent theories and research findings will be discussed. Prerequisite: PSYC 211 with a grade of C or better. Credit Hours: 3

PSYC411 - Applied Learning An in-depth coverage of practical problems concerned with training to which the principles of learning derived from pure laboratory investigations can be applied. Prerequisite: PSYC 211 and PSYC 309 or graduate status. Credit Hours: 3

PSYC415 - Psychopharmacology A survey of the effects of drugs on the normal and abnormal behavior of humans and animals. A primary focus is upon understanding drug influences on behavior in relation to actions on the nervous and endocrine systems. Prerequisite: PSYC 302 or graduate status. Credit Hours: 4

PSYC416 - Recovery of Function Following Brain Damage A survey of experimental animal and human clinical research as they relate to behavioral recovery following damage in the central nervous system. Recent theories and literature are stressed. Prerequisite: PSYC 302 or consent of instructor, or graduate status. Credit Hours: 3

PSYC417 - Neuroscience of Learning and Memory This course will serve as an advanced discussion on the research related to the neuroscience of how learning and memory operate. Topics will discuss how the principles surrounding learning and memory are explained in terms of cellular, neural systems, and behavioral levels. Prerequisite: PSYC 302 or consent of instructor or graduate status. Credit Hours: 3

PSYC419 - Behavioral Genetics Provides an overview of the experimental and quantitative methods used in studying behavioral differences associated with genetic variables. Elementary aspects of genetics will be included in the course, which will examine several aspects of both human and nonhuman behavior. Prerequisite: PSYC 211 or consent of instructor, or graduate status. Credit Hours: 3

PSYC420 - Industrial/Organizational Psychology Topics in industrial and organizational psychology; applications of psychology to human resource management, such as job analysis, performance appraisal systems, personnel selection and training. Prerequisite: PSYC 211. Credit Hours: 3

PSYC421 - Psychological Tests and Measurements Introduction to measurement theory and test development. Detailed coverage of selected tests from such areas as intelligence, aptitude and personality, and the use of psychological tests in various settings. Prerequisite: PSYC 211 or graduate status. Credit Hours: 3

PSYC425 - Psychology of Positive Parenting This course will provide a comprehensive overview of key concepts in parenting, the nature of parenting across the lifespan and specific challenges for parents with children in each of the developmental stages. We will discuss effective strategies for addressing these challenges in addition to programs and approaches that demonstrate a strong evidence base. Special focus will additionally be given to diversity issues, parenting in high risk families and in families with exceptional children. Prerequisites: PSYC 102, PSYC 301, or consent of instructor. Credit Hours: 3

PSYC431 - Advanced Psychopathology An advanced presentation of theoretical and empirical issues in contemporary psychopathology research. Explores the role empirical research plays in understanding the features of major psychological disorders and their treatment. Provides a broad understanding of the many factors that contribute to the development and maintenance of abnormal behaviors. Prerequisite: PSYC 211, PSYC 331 or consent of instructor or graduate status. Credit Hours: 3

PSYC432 - Psychopathology of Childhood An extensive review and systematic evaluation of theories and research pertaining to the behavior disorders of childhood. Emphasis will be upon empirical data and the implications of these data for the classification and treatment of these disorders. Prerequisite: PSYC 211, PSYC 301, PSYC 311 or graduate status. Credit Hours: 3

PSYC440 - Advanced Personality Advanced presentation of theoretical and research issues related to current issues in personality psychology. The overarching focus of the course is presentation and discussion of a scientific approach to understanding what personality is, how it can be measured, how

it develops and how it relates to various aspects of individual functioning. Prerequisite: PSYC 211 or consent of instructor. Credit Hours: 3

PSYC443 - Bilingualism (Same as LING 443) Examines the linguistic, psycholinguistic, sociolinguistic and educational aspects of bilingualism, particularly as pertaining to the care and education of bilingual children. Useful for teachers, speech therapists, doctors, psychologists, counselors, and others working with bilinguals. Practical applications and data-based research. Prerequisite: PSYC 211. Credit Hours: 3

PSYC444 - Second Language Acquisition (Same as LING 444) Introduction to key concepts and major theoretical and methodological issues in SLA research. Examines major developments in SLA in the areas of phonology, morphology, lexis, syntax, semantics, pragmatics, and discourse and provides students with hands-on experience in describing and accounting for L2 data. An opportunity to design and implement a data-based study in an area of interest to students. Prerequisite: PSYC 102 or consent of instructor. Credit Hours: 3

PSYC445 - Psycholinguistics (Same as LING 445) A broad spectrum introduction to psycholinguistics. Topics to be covered include general methodology for the study of psycholinguistics, the nature of language, theories of human communication, language comprehension and production, first and second language acquisition, meaning and thought, natural animal communication systems, and language and the brain. Credit Hours: 3

PSYC451 - Advanced Child Psychology An assessment of concepts, methods, and research techniques within selected topic areas of developmental psychology. Prerequisite: PSYC 211 and PSYC 301, or graduate status. Credit Hours: 3

PSYC453 - Advanced Topics in Developmental Psychology This course explores a variety of areas in developmental psychology that involve some controversy, from infancy through adolescence. Issues central to understanding developmental psychology as a discipline or specific areas of research within developmental psychology will also be considered. Credit Hours: 3

PSYC461 - Advanced Social Psychology Critical examination of contemporary theories and research in social psychology. Practice in application of scientific findings to real-life problems of individuals and groups. Issues treated in depth are chosen for relevance to student's personal needs and career interests. Prerequisite: PSYC 211 and PSYC 307 or graduate status. Credit Hours: 3

PSYC470 - Psychology of Race and Racism (Same as AFR 472) This course reviews the history and evolution of the construct of race as a psychological phenomenon. While the course will be largely psychological in nature, the pervasiveness of race in practically every sphere of life necessitates a multidisciplinary approach. The course will emphasize a theoretical and conceptual approach toward understanding the psychology of racialized thinking. Prerequisite: PSYC 211. Credit Hours: 3

PSYC471 - Judgment and Decision Making A survey of the academic field of judgment and decision making, its major methods, theories, results, and controversies. We will examine the generality of experimental results across various domains including gambling, clinical prediction, perception of randomness, and medical decision making. Prerequisite: PSYC 211 or graduate status. Credit Hours: 3

PSYC480 - Effective Correctional Practices (Same as CCJ 480) Exploration and evaluation of correctional intervention strategies developed for the sentencing of adjudicated persons. Particular emphasis on examining empirical research literature on effective correctional practices, including programs currently implemented in institutional settings, alternatives to institutional corrections, and community based programs. Prerequisite: PSYC 211. Credit Hours: 3

PSYC489 - Seminar: Selected Topics Varied content. Offered as need exists and as faculty interests and time permit. Prerequisite: PSYC 211. Special approval needed from the instructor. Credit Hours: 1-12

PSYC505 - Psychology and Law (Same as CCJ 405, PSYC 405) This course surveys psychological theory and research as applied to the cognitions, emotions, and behavior of individuals in the legal system. The implications of social psychology for legal settings, such as police departments, courtrooms, and jury rooms are explored. Credit Hours: 3

PSYC507 - Advanced Social Psychology Review of new and traditional theories and research findings within social psychology. Provides an overview of major areas of study and consideration of more recent

topics of study. Topics include (but are not limited to) cultural and evolutionary perspectives in social psychology, motivation, social cognition, self-knowledge, person-perception, cognitive consistency, attitudes, intergroup relationships, stereotyping, and group behavior. Restricted to graduate standing. Credit Hours: 3

PSYC509 - History and Systems of Psychology A review of conceptual and empirical antecedents of modern psychology. Students research and summarize topics on 20th Century systematic developments. Restricted to graduate status in Psychology. Credit Hours: 3

PSYC510 - Evolutionary Psychology The class provides an overview of major areas of Evolutionary Psychology and consideration of recent topics from related fields. Key concepts and principles of evolutionary psychology will be discussed in relation to cognitive, biological/neurological, developmental, personality, and social psychology. Topics include (but are not limited to): historical foundations of evolutionary psychology, research methods, problems of survival, challenges of sex, mating and marriage, parenting and kinship, group cooperation and conflict, and the applications of evolutionary psychology to modern life. Classic and recent theories and research findings will be discussed. Students who completed PSYC 410 are not eligible to enroll. Restricted to Graduate Student Status. Credit Hours: 3

PSYC511 - Human Learning and Memory Reviews principles of learning and memory. Covers both human and animal research literature from experimental and theoretical perspectives. Credit Hours: 3

PSYC514 - Neurobiological Bases of Behavior An advanced study of neuroanatomical and neurophysiological principles underlying behavior. Topics covered include structure and function of neurons, synaptic transmission, sensory processing, motor control, development and plasticity of the nervous system and other current topics in neurobiology. Prerequisite: PSYC 302 or equivalent. Special approval needed from the instructor. Credit Hours: 4

PSYC515 - Theory and Research in Cognitive Psychology A detailed survey of current studies of attention, short-term memory and thought processes. Special approval needed from the instructor. Credit Hours: 3

PSYC516 - Human Clinical Neuroanatomy Basic functioning of the nervous system, detailed gross anatomy and dissection of the human brain, functional disorders following brain damage, noninvasive cranial nerve examination. The course includes a lab component. Restricted to graduate standing. Credit Hours: 4

PSYC517 - Aging, Memory and Cognition (Same as GRON 517) A detailed survey of current methodology, research and theory dealing with cognitive and memory processes in later adulthood. Topics covered include attention, memory, reasoning and problem solving, language processing and inference and age-associated pathologies affecting cognition and memory. Special approval needed from the instructor. Credit Hours: 3

PSYC518 - Psychopharmacology and Behavior A detailed survey of the effects of drugs on the normal and abnormal behaviors of humans and animals. A primary focus is upon understanding drug influences on behavior in relation to actions on the nervous system, endocrine system and behavior pathology. Students review and summarize original research in the area. Restricted to graduate status in psychology or permission of instructor. Credit Hours: 4

PSYC520 - Applications of the Psychology of Learning and Memory A survey of the theories and methods of training that have resulted from research in the areas of learning and memory. Students will review some of the very recent methods as well as those that are better developed. Practice will be provided. Prerequisite: PSYC 309 or consent of instructor. Credit Hours: 3

PSYC522 - Experimental Design and Analysis (Same as QUAN 508) In-depth coverage of the rationale underlying the design and analysis of complex experimental designs used in psychological research. Restricted to Psychology graduate students. Credit Hours: 4

PSYC523 - Research Methods in Applied & Professional Psychology Discussion of problems in experimental and quasi-experimental design, control and analysis that are encountered by researchers and professional psychologists. The course covers critical evaluation of internal, construct, and external

validity and the application of randomized and non-randomized designs for causal inference. Passive-observational and qualitative designs are covered at the instructor's discretion. Examples of current research practice from applied, counseling and clinical psychology are reviewed. Restricted to graduate status in psychology or consent of instructor. Credit Hours: 3

PSYC524 - Multivariate Methods of Psychology Detailed treatment of multiple-factor analysis and multiple regression analysis. Also includes introduction to other multivariate methods such as discriminant analysis and cluster analysis. Prerequisite: PSYC 522. Restricted to Psychology graduate students. Credit Hours: 4

PSYC525 - Psychological Measurement (Same as QUAN 531) Intensive coverage of such topics in test theory as item analysis, reliability, validity, problems of weighting in differential prediction, and problems in selection and classification. Prerequisite: PSYC 421 or consent of instructor. Credit Hours: 3

PSYC526 - Research in Counseling Psychology This course provides a basic foundation of research skills. The course includes extensive reading in counseling psychology research and coverage of research design, specific research techniques, technical writing and research ethics. Credit Hours: 3

PSYC529 - Advanced Applied Multivariate Statistics This course will introduce multivariate analyses such as structural equation modeling, hierarchical linear modeling and latent curve analysis, with additional topics addressed dependent upon student interest (e.g., missing data, categorical and/or dyadic data analysis). After presenting conceptual information on latent variable analysis, the course will focus on the application of advanced analytic techniques. Understanding of correlation and regression is essential for this course. Prerequisite: graduate level multivariate statistics course. Credit Hours: 3

PSYC530 - Theories of Counseling and Psychotherapy A survey of the major theories of personality and systems of counseling and psychotherapy. Stresses relationship between theory and application. Special approval needed from the instructor. Credit Hours: 3

PSYC531 - Community and Institutional Field Placement Introduction to a variety of area agencies with each student affiliating with two agencies at least two days per week. Individual and group supervision with special attention to the variety of clinically related problems and approaches to treatment encountered in the course of their activities. Required for clinical students. Restricted to psychology graduate students in clinical or counseling. Credit Hours: 1-3

PSYC534 - Cognitive and Behavior Therapy An extensive review and systematic evaluation of clinical methods including desensitization, assertion training, cognitive restructuring, and conditioning strategies. Restricted to graduate status (clinical/counseling) or consent of instructor. Credit Hours: 3

PSYC535 - Psychopathology Surveys the following issues and content areas in psychopathology: categorical and dimensional models and definitions of psychopathology, anxiety and related disorders, depressive disorders, schizophrenia spectrum and psychotic disorders, substance-related disorders, and personality disorders. Also reviews diagnostic procedures, including differential diagnosis. This course is required for all clinical students within their first two years. Restricted to psychology graduate students or consent of instructor. Credit Hours: 3

PSYC536 - Fundamentals of Counseling An introduction to counseling psychology as a professional specialty. Professional and ethical issues in the training and work of counseling psychologists are examined. Basic counseling skills are acquired through practice interviewing. Restricted to psychology graduate students or consent of instructor. Credit Hours: 4

PSYC537 - Advanced Treatment Planning and Implementation An advanced level course designed to help students grapple with the more complex issues of psychological practice in today's health care system. Students will practice comprehensive treatment planning and outcome management that is theoretically driven and evidence-based. Students will also gain specific knowledge and skills related to delivering therapy in a culturally relevant and time-limited manner. Restricted to psychology graduate status. Credit Hours: 3

PSYC538 - Theory and Practice of Group Facilitation Didactic presentation of group dynamics and group counseling/therapy. Restricted to Psychology graduate status. Credit Hours: 3

PSYC540 - Psychological Assessment Basic theory, practice and research on psychological assessment with emphasis on objective, validated measures of intelligence and personality. Includes one hour laboratory section. Restricted to psychology graduate status. Course fee: $100. Credit Hours: 4

PSYC543 - Advanced Child Assessment Basic theory, research, and practice in the psychological assessment of children's learning and emotional problems. Prerequisite: PSYC 540. Restricted to psychology graduate standing. Special approval needed from the instructor. Credit Hours: 3

PSYC544 - Advanced Adult Assessment Practical experience at conceptualizing psychopathology from a standard clinical test battery and in writing clinically meaningful test reports. Prerequisite: PSYC 540. Restricted to Psychology graduate standing. Special approval needed from the instructor. Credit Hours: 3

PSYC545 - Introduction to Neuropsychological Assessment Overview of the development of neuropsychology from signs to test batteries and methodology. Prerequisite: PSYC 540. Restricted to psychology graduate status. Special approval needed from the instructor. Credit Hours: 3

PSYC548 - Vocational Psychology and Career Development Introduces students to vocational psychology as an area of academic inquiry. Topics include theories of career development, occupational information, career assessment, research issues, and career counseling techniques. Restricted to graduate standing. Credit Hours: 3

PSYC550 - The Psychological Construction of Gender (See WGSS 550) Credit Hours: 3

PSYC552 - Social Development Advanced consideration of current methods, research, and theory in development psychology with emphasis on infancy through adolescence. Includes integration of social, developmental, and biological aspects of child development, with particular attention paid to social and personality development and parent-child relations. Special approval needed from the instructor. Credit Hours: 3

PSYC553 - Cross-Cultural Psychology This course helps students increase their awareness of the importance of cross-cultural differences in psychology. The course also integrates theory and research from different fields of psychology (e.g., biological, social, developmental, cognitive, psychopathology) from the cross-cultural perspective. Special approval needed from the instructor. Credit Hours: 3

PSYC554 - Life-Span Developmental Psychology Theories of human development, as well as current research trends and methodologies, will be examined from a life-span perspective. Credit Hours: 3

PSYC555 - Language and Cognition Current theoretical problems in language and cognitive developments are investigated from the perspective of psychology, physiology, linguistics and computer simulations. Special approval needed from the instructor. Credit Hours: 3

PSYC556 - Child Psychotherapy Survey and analysis of traditional and contemporary approaches to individual child psychotherapy. Includes psychodynamic, humanistic-nondirective, hypnotherapy-imagery and other perspectives as well as therapy outcome research. Restricted to psychology graduate status. Special approval needed from the instructor. Credit Hours: 3

PSYC558 - Personality and Social Development of Adults A lecture-discussion course which presents the major theoretical and empirical literature in the area of adult personality and social development. Students are encouraged to apply normal developmental constructs to understand individual adults, as well as to gain competence in research methods in this area. Restricted to psychology graduate students or consent of instructor. Credit Hours: 3

PSYC559 - Behavioral Child Therapy Survey and analysis of behavioral and cognitive-behavioral approaches to the treatment of child psychopathology. Restricted to psychology graduate status. Special approval needed from the instructor. Credit Hours: 3

PSYC561 - Supervision of Psychotherapy Presentation of the theories and techniques of psychotherapy supervision, as well as cultural, ethical and legal issues in supervision. Students will also provide individual supervision to beginning counselors and receive supervision of their supervision. Restricted to psychology graduate status. Credit Hours: 3

PSYC562 - Adolescent Clinical Psychology Discusses specific characteristics of adolescent psychopathology, techniques for psychological assessment, common and empirically supported treatment approaches. Restricted to psychology graduate students or consent of instructor. Credit Hours: 3

PSYC564 - Program Evaluation: Experimental and Quasi-Experimental Approaches Review of experimental and quasi-experimental designs for assessment of program impact. Discussion of design, logistic, and political implementation problems. Detailed examination of a number of attempts at program evaluation. Prerequisite: 500-level statistics course. Credit Hours: 3

PSYC565 - Research in Organizational Psychology In-depth examination of theoretical and research literature in organizational psychology. Topics include, but are not limited to, theory and research literature on work motivation, job attitudes, leadership, group processes, organizational stress and women and minorities in the work place. Restricted to graduate status in psychology or permission of instructor. Credit Hours: 3

PSYC566 - Health Psychology This course will explore the interface between psychological theory and research and health issues including health behavior, prevention and intervention, stress and coping, management of chronic and terminal illness, health care service utilization, and patient/provider interaction. Graduate standing required. Credit Hours: 3

PSYC569 - Applied Research Consultants Consulting firm which provides applied research experiences for advanced graduate students on planning, data gathering, evaluation, and decision making projects for units of university and area agencies and businesses. Students exercise decision making power in all aspects of the firm: project solicitation, fee setting, expenditures. Graded S/U only. Prerequisite: PSYC 571 or consent of instructor. Credit Hours: 1-3

PSYC570 - Early Cognitive Development Surveys the major theories, methods, and data in the field of human cognitive development, with a particular emphasis on the qualitative changes that occur during infancy and early childhood. Special approval needed from the instructor. Credit Hours: 3

PSYC571 - Proseminar in Applied Experimental Psychology A survey of the problem areas to which applied experimental psychology is applicable and of the principal methods employed by applied experimental psychologists. Integration of these approaches within a comprehensive metatheory. Various case studies apply the information to actual and simulated application problems. Includes presentations of current research by faculty and graduate students. Required for all Applied Psychology students until successful completion of preliminary exams and/or advisors' approval. Credit Hours: 1-2

PSYC572 - Proseminar in Brain and Cognitive Sciences Discussions of various research topics within the brain and cognitive sciences. Presentations of current research by faculty and graduate students. Credit Hours: 1

PSYC573 - Personnel Psychology This course will give an in-depth treatment of modern theories and practice of personnel selection. Students will learn about the psychological variables used in personnel selection as well as how to apply these findings in modern organizations. Course content will include individual difference traits related to subsequent job performance, methods used to select employees, personnel selection practices, adverse impact, and other related topics. Restricted to graduate students in Psychology or instructor's permission. Credit Hours: 3

PSYC574 - The Psychology of Groups and Teams This course examines the good, the bad and the ugly with groups and teams, with an emphasis on group dynamics and performance. Topics include: leadership, group composition and performance, group decision-making, ostracism, minority influence, groups and technology, and creativity. Restricted to graduate students in psychology or permission of instructor. Credit Hours: 3

PSYC575 - Computational Modeling Introduction to computational modeling of cognitive processes. Covers theoretical and methodological issues in computational simulations of psychological behavior. Lectures and practical simulation assignments. Special approval needed from the instructor. Credit Hours: 3

PSYC577 - Second Language Acquisition (Same as LING 541) Introduction to key concepts and major theoretical and methodological issues in second language acquisition. Major developments in SLA in

the areas of phonology, morphology, lexis, syntax, semantics and discourse and provides students with hands-on experience in describing and accounting for second language data. Prerequisite: Introduction to linguistics or consent of instructor. Credit Hours: 3

PSYC578 - Bilingualism (Same as LING 543) A comprehensive introduction to the study of bilingualism. Course will examine the linguistics, psycholinguistic, sociolinguistic and educational aspects of bilingualism, particularly as pertaining to the care and education of bilingual children. Prerequisite: one previous course in linguistics or consent of instructor. Credit Hours: 3

PSYC580 - Cognition, Affect and Behavior Provides an integrative exploration of the relations among cognition, affect and behavior (CAB). Foundations of this integration are provided, including examination of basic principles, experimental evidence, and biological bases. Emphases will be placed on learning, stability, self-regulation, and change of CAB, and relationships to individual differences, personality, psychopathology, and genetically influenced temperaments. Restricted to psychology graduate student status or instructor permission. Credit Hours: 3

PSYC581 - Developmental Psychopathology An extensive review and systematic evaluation of theories and research pertaining to developmental psychopathology. Emphasis will be on empirical data and the implications of these data for the classification and treatment of disorders. Restricted to graduate status. Special approval needed from the instructor. Credit Hours: 3

PSYC584 - Pediatric Psychology This course is an introduction to pediatric psychology. Clinical and research applications to working with youth and their families in medical settings will be covered. Topics include clinical roles and settings in pediatric psychology, pediatric medical and developmental conditions and role of the pediatric psychologist, consultation-liaison in the pediatric medical setting, assessment and intervention approaches for children with medical conditions, and ethical issues in pediatric psychology. Prerequisite: PSYC 556 or PSYC 559. Restricted to psychology graduate student status or instructor permission. Credit Hours: 3

PSYC585 - Advanced Seminar Seminars of varied content for advanced students. Special approval needed from the instructor. Credit Hours: 1-18

PSYC586 - Proseminar in Clinical Psychology Required seminar for first-year graduate students enrolled in the Clinical Psychology program. Graded S/U. Restricted to psychology graduate status. Credit Hours: 1

PSYC590 - Readings in Psychology Readings in selected topics in psychology under staff supervision. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-12

PSYC593 - Research in Psychology Research under staff supervision in selected areas of psychology. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-24

PSYC594C - Practicum in Psychology-Clinical Skills Practicum experience in a professional setting is offered under staff supervision. Introduction to the professional skills and issues of clinical psychology, including ethics, interviewing, change processes, diversity issues. Special approval needed from the instructor. Credit Hours: 3

PSYC594E - Practicum in Psychology-Clinical Psychology Practicum experience in a professional setting is offered under staff supervision. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-16

PSYC594F - Practicum in Psychology-Counseling Psychology Practicum experience in a professional setting is offered under staff supervision. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-16

PSYC594L - Practicum in Psychology-Teaching of Psychology Practicum experience in a professional setting is offered under staff supervision. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-16

PSYC595 - Internship Placement in an approved setting required of all students in clinical and counseling psychology. Graded S/U only. Restricted to psychology graduate students. Credit Hours: 1-12

PSYC597 - Preprofessional Training Experience given in research, teaching, or clinical or counseling activities. One hour required each semester of residence. Graded S/U only. Restricted to psychology graduate students. Credit Hours: 1-15

PSYC598 - Ethical and Professional Problems in Psychology The code of ethics in professional practice, in teaching and research; problems and issues of the field are discussed; and relations to other professions and the public are considered. Special approval needed from the instructor. Credit Hours: 3

PSYC599 - Thesis Credit Hours: 1-6

PSYC600 - Dissertation Credit Hours: 1-16

PSYC601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Psychology Faculty

Cashel, Mary Louise, Associate Professor, Psychology, Ph.D., University of North Texas, 1997; 1997. Child and adolescent assessment; juvenile delinquency and preventative interventions; PTSD.

Choi, You-Jung, Assistant Professor, Psychology, Ph.D. University of Missouri, 2015; 2020. Cognitive development in infants and young children.

Chwalisz, Kathleen D., Professor, Psychology, Ph.D., University of Iowa, 1992; 1992. Health psychology; neuropsychology; group process and intervention; personality.

DiLalla, Lisabeth F., Professor, Psychology, Family and Community Medicine, Ph.D., University of Virginia, 1987; 1992. Developmental psychology; behavioral genetics; social cognitive development.

Drake, Chad, Associate Professor, Psychology, Ph.D., University of Mississippi, 2008; 2012. Acceptance and commitment therapy and training; relational frame theory; contextual behavioral science; behavioral measures of cognition; therapeutic change.

Fehr, Karla, Associate Professor, Psychology, Ph.D., Case Western Reserve University, 2014; 2014. Cognitive-behavioral play interventions for children; pretend play; behavioral sleep medicine interventions.

Habib, Reza, Associate Professor and School Director, Psychology, Ph.D., University of Toronto, 2000; 2003. Brain imaging (fMRI); statistical methodology; long-term memory.

Hurtado-Parrado, Camilo, Assistant Professor BAT, Ph.D., University of Manitoba, 2014; 2021. Human and nonhuman learning and behavioral processes.

Hylin, Michael, Associate Professor, Psychology, Ph.D., Northern Illinois University, 2010; 2014. Brain & Cognitive Sciences; neurocognitive rehabilitation following traumatic brain injury.

Jacobs, Eric, Associate Professor, Psychology, Ph.D., University of Florida, 1997; 1999. Experimental analysis of behavior; behavioral pharmacology; opioid pharmacology, radical behaviorism.

Kang, Tamara, Assistant Professor, Psychology, Ph.D., University of Texas, El Paso, 2017; 2019. Mental health; criminal justice rehabilitation and assessment; psychology and law.

Kibby, Michelle Y., Professor, Psychology, Ph.D., The University of Memphis, 1998; 2004. Neuropsychology; brain-behavior relations; reading disorders; ADHD; child assessment.

Komarraju, Meera, Professor and Provost and Vice Chancellor for Academic Affairs, Ph.D., Osmania University Hyderabad, India, 1983; Ph.D., University of Cincinnati, 1987; 2006. Personality and cross-cultural differences in academic motivation and achievement; gender, ethnicity, and leadership in the workplace.

Lakshmanan, Usha, Professor, Psychology, Ph.D., University of Michigan,1989; 1990. Psycholinguistics; first and second language acquisition; bilingualism; multilingualism; language and cognition.

Lee, Eric B., Assistant Professor, Psychology, Ph.D., Utah State University, 2019; 2020. Contextual behavior science; obsessive-compulsive behavior; anxiety; process-based therapy.

Lee, Yueh-Ting, Professor, Ph.D. State University of New York at Stony Brook, 1991;1995. Categorical thinking and evolutionary psychology; intergroup and cultural relations and identity; human beliefs (religion and spirituality); and peace psychology.

Morgan, Robert D., Professor and Dean of the College of Health and Human Sciences, Ph.D., University of Missouri, 1999; 2021. Treatment and assessment of justice-involved persons with mental illness, effects of incarceration including in restricted housing units, and forensic mental health assessment.

Redner, Ryan N., Associate Professor and Program Director, BAT, Ph.D., Western Michigan University, 2012; 2015. Tobacco regulatory science; cell phone use in the classroom; healthy eating and exercise; behavioral economics.

Sahu, Ankita, Assistant Professor, Psychology, Ph.D., Texas A & M University, 2021; 2021. Multicultural training and supervision; multicultural counseling skills; experiences of Black, Indigenous, People of Color students with multicultural training.

Schmidt, Kathleen, Assistant Professor, Psychology, Ph.D., University of Virginia, 2014; 2017. Implicit social cognition; racial attitudes; self-knowledge; social perception; reproducibility in psychology.

Shawler, Lesley, Assistant Professor, BAT, Ph.D., Institute of Applied Behavior Endicott College, 2019; 2021. Assessment and treatment of challenging bevavior and teaching verbal behavior to individuals with Autism and other neurodevelopmental disabilities.

Emeriti Faculty

Clancy Dollinger, **Stephanie M.**, Associate Professor, Ph.D., Syracuse University, 1989; 1989.

DiLalla, David L., Associate Professor and Associate Provost, Psychology, Ph.D., University of Virginia, 1989; 1990.

Dillon, Ronna, Professor, Ph.D., University of California, Riverside, 1978; 1978.

Dollinger, Stephen J., Professor, Ph.D., University of Missouri-Columbia, 1977; 1977.

Gannon, Linda, Professor, Ph.D., University of Wisconsin, 1975; 1975.

Gilbert, Brenda O., Associate Professor, Ph.D., University of Florida, 1985; 1986.

Gilbert, David G., Professor, Ph.D., Florida State University, 1978; 1985.

Jensen, Robert A., Professor, Ph.D., Northern Illinois University, 1976; 1981.

McHose, James H., Professor, Ph.D., University of Iowa, 1961; 1961.

McKillip, John A., Professor, Ph.D., Loyola University of Chicago, 1974; 1975.

O'Donnell, James P., Associate Professor, Emeritus, Ph.D., University of Pittsburgh, 1965; 1965.

Pitz, Gordon F., Professor, Ph.D., Carnegie Mellon University, 1963; 1963.

Schill, Thomas R., Professor, Ph.D., Oklahoma State University, 1963; 1963.

Snyder, John F., Associate Professor, Ph.D., Loyola University, 1965; 1968.

Swanson, Jane L., Professor, Psychology, Ph.D., University of Minnesota, 1986; 1986.

Tinsley, Howard E. A., Professor, Ph.D., University of Minnesota, 1971; 1973.

Vaux, Alan C., Professor, Ph.D., Trinity College Dublin, 1979; Ph.D., University of California at Irvine, 1980; 1981.

Yanico, Barbara, Associate Professor, Ph.D., The Ohio State University, 1977; 1978.

Public Administration

Master of Public Administration (M.P.A.D.) in Public Administration

Admission

Students must be admitted to the SIUC Graduate School as well as the M.P.A.D. program. This process begins with the submission of the “Application Materials” (see below). Once admitted, students will be provided with an advisor to guide them through the program.

Applications to the M.P.A.D. program are accepted year-round for each of the three main semesters officially recognized by the University. In addition, applications for admission to enroll starting in the second half of a given term will also be accepted but may be subject to deferral to the following term if appropriate courses will not be available to the applicant.

Application Deadlines

Application deadlines vary based on the student's academic history and citizenship status. In all cases, the deadline refers to when a complete application must be submitted. See the following section for all materials required for a complete application.

Domestic applicants whose latest academic work was with SIU Carbondale have a deadline of 10 business days prior to the start of the term in which they wish to begin.

All other domestic applicants have a deadline of 20 business days prior to the start of the intended entrance term.

For international applicants intending to study online from abroad, the deadline is 30 business days prior to the start of the term.

For international applicants intending to complete their program of study from within the United States on a student visa, the deadline is at least 50 business days prior to the start of the term. However, the applicant should allot additional time based on the specific processes necessary to obtain their visa.

Residential program applicants seeking an assistantship must apply no later than 6 months prior to the start of the semester.

Late applications will be considered when deemed possible by the respective program administrator(s). Alternatively, late applicants may seek a deferral of their application subject to the limits imposed by the Graduate School.

See the University's academic calendar and course schedules for information on when each semester begins.

Application Materials

1. **Graduate School application.** Applicants may find the application portal on Graduate School’s website. The portal may be found here: https://gradschool.siu.edu/apply/.
2. **Transcripts.** Graduate School requires transcripts from all post-secondary institutions previously attended other than SIU Carbondale. If official transcripts have already been submitted in the process of applying for another program (such as previously applying for a baccalaureate degree program), please contact our office to determine if those transcripts would need to be sent again.
3. **Resume or CV.** At a minimum, applicants should include all full-time professional experience they earned after being awarded a bachelor’s degree.
4. **Two references.** Contact information for two references should be included on the resume. At the discretion of the admissions committee, letters of recommendation may be also requested, but are typically not necessary.
5. **Personal Statement.** A personal statement must be provided which demonstrates the applicant’s fit with the program, and vice versa.
6. **International applicants**:
    a. Additional requirements for international students are outlined elsewhere in this catalog as well as online at https://gradschool.siu.edu/apply/international.php.

b. Note that financial disclosures and other materials that are only used for obtaining a student VISA are not required for those who will study from abroad. Please contact Graduate School (gradschl@siu.edu) for more information.

Admission Requirements

The M.P.A.D. in Public Administration program gives preference to students with undergraduate grade point averages of at least 2.7/4.00 on the entire last undergraduate GPA earned at the time of application. Applicants with strong professional experience may be admitted with grade point averages below 2.7 in some cases. Admission decisions are made by the M.P.A.D. in Public Administration Director with the advice of the M.P.A.D. faculty for students who submit complete applications by the submission deadlines. Applications will be ranked for the purpose of final admissions decisions. The number of students admitted to the program for a given semester will be determined by program capacity and enrollment.

If the admissions committee recommends admission for an applicant despite academic deficiencies, the Graduate School will decide whether or not to directly admit that applicant. If Graduate School determines they are not qualified for direct admission, an applicant may instead seek non-declared graduate admissions until they establish a Graduate GPA of at least 3.0 across 9 credit hours. Upon completion, they may re-apply for admission to the program. Please note that non-declared students do not count as “Business” students for the purposes of applying policies such as those listed in the “Non-Business Graduate Students” section below.

Degree Requirements

M.P.A.D. students complete a 30-credit hour program of study as follows: (1) six required courses totaling 18 credit hours; (2) 12 credit hours of elective course work. Of the 30 credit hours of graduate level coursework, at least 18 credit hours must be taken in M.P.A.D. program. Each of these requirements is described below.

Retention

All M.P.A.D. students are required to maintain a minimum level of academic performance. Any student earning a *C* grade or below in two or more M.P.A.D. required courses will be dismissed from the program. Students must otherwise conform to the standards set out in the M.P.A.D. Student Handbook. Issues not addressed by the Handbook fall under retention policy provisions in the Graduate School Catalog.

Core Requirements - 24 credit hours

- PADM 503: Research Methods for Public Administrators (3 CH)
- PADM 537: Foundations of Public Administration (3 CH)
- PADM 539: Program Analysis and Evaluation (3 CH)
- PADM 542: Public Budgeting and Fiscal Management (3 CH)
- PADM 543: Human Resource Management (3 CH)
- PADM 545: Organization Theory and Behavior (3 CH)

Elective Requirements - 12 credit hours

- Elective courses are selected by the student.

A substitution for one core course may be allowed if the substituted course is similar in content to the core course, or if competence in the subject matter of the course is clearly evident. All substitutions must be approved by the director of the program. M.P.A.D. students concentrating in aviation administration will substitute PADM 557 (Public Financial Administration) for PADM 539 (Program Analysis and Evaluation).

M.P.A.D. students may take four elective courses that are being offered toward earning a certificate or by taking general electives, as follows:

- **Certificate in Analytics for Managers**
- **MPAD General Electives without a certificate**

- PADM 557 Public Financial Administration
- Choose any three elective offered in CoBA (9 CH)

Electives

Elective courses for students not desiring a certificate may be selected from the offerings of various programs in the College of Business and Analytics, as well as those in the M.P.A.D. program.

Aviation Administration Concentration

To be considered for admission into the aviation administration concentration, pre-service applicants will have graduated from an accredited four-year college or university with a major in some aspect of aviation, with a minimum grade point average of 2.7. Inservice applicants with strong professional experience may be admitted with undergraduate grade point averages below 3.0, and with undergraduate majors outside of the aviation field. Prerequisite coursework including PADM 537 and additional aviation administration courses may be required in these situations.

Core Requirements - 21 credit hours

- PADM 503: Research Methods for Public Administrators (3 CH)
- PADM 535: Ethical Foundations of Public Service (3H)
- PADM 540: Seminar in Public Management (3 CH)
- PADM 542: Public Budgeting and Fiscal Management (3 CH)
- PADM 543: Human Resource Management (3 CH)
- PADM 545: Organization Theory and Behavior (3 CH)
- PADM 557: Public Financial Administration (3 CH)

Aviation Requirements - 12 credit hours

(Select four of the five aviation courses, register for cross listed AVM courses.)

- AVM 551/PADM 551: Aviation Policy, Law and Regulation (3 CH)
- AVM 552/PADM 552: Advanced Airport Administration (3 CH)
- AVM 553/PADM 553: Advanced Safety Administration (3 CH)
- AVM 554/PADM 554: Aviation Planning (3 CH)
- AVM 555: International Aviation (3 CH)

Master of Public Administration/J.D. Concurrent Degrees

Students who have been admitted separately to the Southern Illinois University School of Law and the Master of Public Administration program may study concurrently for the Juris Doctorate and M.P.A.D. degree. Students interested in concurrent study should inform both programs before entering the second academic year as law students. Students will not be permitted to take course work outside the prescribed law curriculum during the first year of law school. The required courses for joint degree students are as follows:

Core Requirements - 18 credit hours

- PADM 503: Research Methods for Public Administrators (3 CH)
- PADM 539: Program Analysis and Evaluation (3 CH)
- PADM 540: Seminar in Public Management (3 CH)
- PADM 542: Public Budgeting and Fiscal Management (3 CH)
- PADM 543: Human Resource Management (3 CH)
- PADM 545: Organization Theory and Behavior (3 CH)

Law Requirements - 15 credit hours
(Select five law courses from the list below)

- LAW 533, LAW 539, LAW 548, LAW 552, LAW 553, LAW 558, LAW 568, LAW 579, LAW 585, LAW 589, LAW 593, LAW 596, LAW 600, LAW 619, LAW 620, LAW 622, LAW 642, LAW 650, LAW 651, LAW 662, and LAW 668

Law students accumulating 300 hours working in the field may petition to waive the PADM 595 service requirement. Successful petitioners will be granted in-service status. As in-service students, they will be required to submit the in-service paper. Students without any background in public administration may be required to enroll in PADM 537 as a prerequisite to the program.

Differential Tuition

The College of Business and Analytics has a differential tuition surcharge of 15 percent of applicable tuition for graduate College of Business and Analytics majors. The differential tuition surcharge will be assessed at the in-state tuition rate and will be capped at 15 credit hours per semester.

Public Administration Courses

PADM444 - Policy Analysis An examination of basic concepts in the policy sciences, approaches to policy analysis, applications to selected areas of policy, and instruments of policy development. Credit Hours: 3

PADM503 - Research Methods for Public Administrators The course aims to familiarize students with analytical techniques and research methods used currently by public administrators. Provides an introduction to applied statistics and data analysis for problems of interest to public administrators. Restricted to enrollment in MPA graduate program or consent of the department. Credit Hours: 3

PADM514 - Seminar in Intergovernmental Relations An examination of relationships among national, state, and local governments in the American federal system, with emphasis on recent literature and contemporary issues. Restricted to enrollment in MPA graduate program or consent of School. Credit Hours: 3

PADM522 - Rethinking NPOs and NGOs: Doing Good Better This course examines the question, can NPOs and NGOs do their good works better? In looking for the answer, students consider how perspective shapes reality, the need for a new framework for action, the conflict between limited resources and seemingly unlimited need, importance of local focus, conflicts between donors' demand for short term results with a situation's requirement for a long term program, issues caused by public policy, roles of gender and ethnicity in solving problems and the role of simplicity. Students will do this in anticipation of becoming leaders/managers of NPOs or NGOs. Credit Hours: 3

PADM532 - Nonprofit and Public Grant Writing Examines the theories, skills and practices for writing grants for nonprofit and public organizations. Students practice these skills by actually preparing grants for a nonprofit or a public organization. Credit Hours: 3

PADM534 - Governance Networks in Public Administration Explores the shifting locus of public service delivery over time, and examines alternative organizational arrangements through which public services are provided to citizens. Emphasis is placed on the environment, structure and management of service delivery networks including combinations of public, private, and not-for-profit actors. Explores joint agreements, public-private partnerships, and contracting regimes as elements that bind network actors in the process of delivering high quality public services. Additional focus is invested in evaluating the leadership and management strategies that can ensure accountable and ethical public policy implementation by non-governmental organizations that act with the authority of government. The factors that facilitate network performance are also explored. Credit Hours: 3

PADM535 - Ethical Foundations of Public Service Examines the ethical dimensions of public service, particularly as it relates to the cultural context of the United States, while emphasizing the responsibility of the public manager to act with integrity. Assesses the virtues necessary for moral leadership in the public sector, as well as managerial strategies that reinforce ethical climates in public organizations and ethical

behavior among public employees. Focuses on contemporary cases to explore the practical relevance of theories of morality and ethics. Special attention will be invested in examining the ethical implications of contemporary modes of governance and tensions between managerial and democratic values. Credit Hours: 3

PADM537 - Foundations of Public Administration Introduction to the study and practice of administrative process and public management. Theoretical, political, and practical issues of organizing, staffing, financing and implementing government decisions and other issues are surveyed. Credit Hours: 3

PADM539 - Program Analysis and Evaluation The analysis and evaluation of governmental programs. Emphasis is placed upon using analytical techniques to determine what difference programs make and how that data can affect public sector decision making. Restricted to enrollment in MPA graduate program or consent of School. Credit Hours: 3

PADM540 - Seminar in Public Management Course is designed for advanced MPA students and examines social, political, legal and managerial constraints on the behavior of public administrators. Issues in ethics and the public's expectations of professional administrators are also examined. Restricted to students who are in the MPA program who have completed at least three required MPA courses, or the consent of the department. Credit Hours: 3

PADM541 - Seminar in Applied Problems of Public Administration Study of selected problems in public administration and policy. Emphasis placed on the practitioner's perspective. Restricted to enrollment in MPA graduate program or consent of School. Credit Hours: 3

PADM542 - Public Budgeting and Fiscal Management An examination of the theory and practice of budgeting in the public sector and of selected elements of fiscal management. The course focuses on administrative aspects of budgeting and is oriented toward preparation of students for careers in the public service. Students utilize primary materials in conducting individual or class projects aimed at development of budgetary skills. Restricted to enrollment in MPA graduate program or consent of School. Credit Hours: 3

PADM543 - Human Resource Management A study of the processes and procedures used in contemporary public personnel systems. Emphasis is placed on examination of competing models of personnel administration, application of personnel management strategies to specific case problems and public sector labor relations. Restricted to enrollment in MPA graduate program or consent of School. Credit Hours: 3

PADM544 - Policy Analysis This course focuses on the development and analysis of public policy alternatives and how they are used in governmental decision making. Credit Hours: 3

PADM545 - Organization Theory and Behavior An examination of various approaches to describing and understanding public organizations and the individuals within them. Emphasis is placed on study of the important theoretical literature in the field and on the applications of the theory of practical management problems in governmental units and agencies. Restricted to enrollment in MPA graduate program or consent of School. Credit Hours: 3

PADM546 - Leadership in Public Administration An examination of contemporary theories of leadership and their applicability on the public and non-profit sectors. The course emphasizes the range of behaviors and actions relevant to leadership in contemporary governmental organizations and the analysis of factors resulting in leadership success or failure. Restricted to enrollment in MPA graduate program or consent of the department. Credit Hours: 3

PADM547 - Nonprofit Marketing and Fundraising This course examines the unique resource development needs of nonprofit organizations and public organizations and looks at the principles and practical sides of meeting those through relationship management, marketing and fundraising. Time will be taken to look at all the aspects of a successful relationship, fundraising and marketing management plan. Students will be expected to participate in at least one fundraiser for a local nonprofit during the semester. Credit Hours: 3

PADM549 - Administration of Nonprofit Organizations Examines the characteristics of nonprofit organizations that distinguish them from the public and for-profit sectors. Explores social and economic functions of nonprofits and such administrative issues as fundraising, working with volunteers and governing boards, satisfying tax codes and service distribution. Restricted to enrollment in MPA graduate program or consent of School. Credit Hours: 3

PADM550 - Pro-Seminar in Public Administration A survey of the major literature in the field of public administration. The course will synthesize and integrate the literature and provide an overview of topics to be covered in greater detail in other seminars. Required of M.A. and Ph.D. students offering public administration as a graduate area before enrolling in more advanced subject-matter seminars. Credit Hours: 3

PADM551 - Aviation Policy, Law and Regulation (Same as AVM 551) Examination of the history of American aviation policy, law and regulation. The course focuses primarily on the development, implementation and enforcement of aviation policies and regulations at the federal level. Special attention is paid to the interaction of various government agencies and constituency groups, such as the aircraft industry, airport authorities, airlines, private pilots and passengers. In addition to the historical survey, students will analyze current policy and regulatory trends and identify future problems and opportunities for American aviation policy. Restricted to enrollment in MPAA graduate program or consent of instructor. Credit Hours: 3

PADM552 - Advanced Airport Administration (Same as AVM 552) This course will address the role and function of the airport administrator, especially related to the tasks of developing, operating and maintaining various airport services to meet the needs of key airport users. This course will study key airport administration cases at primary, commercial service, reliever and general aviation airports. Meeting key airport regulations concerning operations and security will be a focus of the course. Restricted to enrollment in MPAA graduate program or consent of instructor. Credit Hours: 3

PADM553 - Advanced Safety Administration (Same as AVM 553) The Aviation Safety Administrator's job function and responsibility for safety and accident prevention within an aviation organization is examined using the case study method. The relevant theory, concepts, procedures and techniques of resource allocation, organizational design, decision modeling, task assignment, delegation of authority and responsibility, establishment of organizational goals and priorities and risk management as they relate to Aviation Safety are included. The job functions of an Aircraft Accident Investigation Team and of an Aviation Safety Inspector will be studied. Aviation safety administration literature will be reviewed. Restricted to enrollment in MPAA graduate program or consent of instructor. Credit Hours: 3

PADM554 - Aviation Planning (Same as AVM 554) This course fulfills a need for a semester length course on aviation planning for students concentrating in aviation administration. Airports and the aviation industry are rapidly expanding, and aviation is growing in importance on the nation's transportation agenda. Broader issues of law and regulation will be covered in an existing course, PADM 551. Restricted to enrollment in MPAA graduate program or consent of instructor. Credit Hours: 3

PADM557 - Public Financial Administration The seminar provides a basic understanding of the public budgeting decision-making processes and financial management practices. It provides students with knowledge and hands-on experience of collecting and analyzing governmental data, generating financial reports, and presenting findings. It also provides students with an understanding of revenue sources and different factors that could potentially influence collections. Moreover, it gives students the opportunity to acquire experience in revenue forecasting and budget decision-making through homework assignments and in-class exercises. Credit Hours: 3

PADM590 - Readings in Public Administration Supervised readings in selected subjects. Credit Hours: 1-6

PADM591 - Individual Research Selection, investigation and writing of a research paper under the personal supervision of a member of the program graduate staff. Credit Hours: 3

PADM594 - Capstone Seminar in Public Administration Guides students in preparing the Professional Portfolio displaying competencies developed through their course work and a project applying them to

public administration practice. Graded S/U only. Restricted to enrollment in MPA graduate program or consent of School. Credit Hours: 3

PADM595 - Internship in Public Affairs Fieldwork in the office of a governmental or quasi-governmental agency. The internship is arranged by the field representative of the M.P.A. degree program. A paper in which the student correlates academic knowledge with practical internship experience is required. Mid-career M.P.A. students may receive credit upon completion of a paper relating previous work experience to public administration literature and theory. Restricted to enrollment in M.P.A. graduate program or consent of department. Graded S/U only. Credit Hours: 1-6

PADM596 - Research Paper in Public Affairs Upon successful completion of core courses, the student expands and develops a previously written MPA graduate program paper. The project involves an issue or problem in public administration and is written with the approval and under the supervision of the student's committee chair. Restricted to enrollment in MPA graduate program or consent of department. Credit Hours: 3

Public Administration Faculty

Davis, Randall S., Professor, Public Administration, Ph.D., University of Kansas, 2011; 2013. Public management, organizational behavior, research methodology.

Grant, James, Associate Professor of Practice, Public Administration, Ph.D., University of Georgia, 1976; 2010.

Stewart, LaShonda M., Professor and Director, Public Administration, Ph.D., Mississippi State University, 2008; 2008. Budget, financial management.

Emeriti Faculty

Hamman, John, Associate Professor, Emeritus, Ph.D., University of Illinois, 1988; 1989.

Public Health and Population Health

The School of Human Sciences offers graduate programs leading to a Ph.D. in Population Health, a Master of Public Health (M.P.H.), an M.P.H./M.D. (must first be admitted to the SIU School of Medicine), and a Graduate Certificate in Public Health with two track options. Persons interested in pursuing any of these degrees should initially consult the Director of Graduate Studies regarding appropriate courses and assignment to an advisor.

Application/Admission

Requirements for admission to the Ph.D. in Population Health or the M.P.H. program are:

1. Completion and submission of Graduate School admission application; a nonrefundable $65 application fee must be submitted with the application for those applying for the Ph.D. in Population Health degree or the Master of Public Health degree. Applicants must pay this fee by credit card.
2. Submission of three letters of recommendation to the School of Human Sciences Director at Human.Sciences@siu.edu (for Ph.D. only).
3. Submission of all official transcripts for previous undergraduate and graduate work.
4. Submission of supplemental essays (for Ph.D. only).
5. Submission of a CV/resume.

Whereas applications are reviewed continuously throughout the year, actual admissions for the M.P.H. program occur 5 times per year, while the Ph.D. in Population Health admissions occur only for the fall semester. Some exceptions to this timeframe can occur under special circumstances. Contact the School of Human Sciences Director for more information at Human.Sciences@siu.edu.

Master of Public Health (M.P.H.) in Public Health

Automatic Admission

1. 3.00 minimum cumulative GPA for undergraduate coursework with or working towards awarded degree.
2. Graduate coursework credit hours of 9 or more requires a 3.00 or better minimum cumulative GPA, which supersedes undergraduate GPA.
3. A completed program application, all undergraduate and graduate college transcripts, a current resume and valid identification

Conditional Admission

Applicants with an undergraduate overall GPA between 2.70 and 2.99 (and no applicable graduate coursework) will be required (in addition) to submit a Letter of Interest (500-700 words) stating their desire for admission and explaining how it aligns with their career goals. These applications will be evaluated by the MPH program for admission decisions.

If approved for conditional admission, students will have one term to achieve the required 3.00 GPA and are expected to maintain that GPA through both terms (one full semester). If conditions are met as stated, the student will be allowed to continue studies in the program.

Required Majors (MUST be printed on transcripts):

- Public Health
- Community Health
- Exercise Science
- Health Education
- Nursing
- Nutrition
- Pharmacy
- Psychology
- Social Work
- Sociology
- Other*

*If an applicant does not/will not have an awarded degree from one of these Majors but otherwise meets the program requirements, they should select “Other” when applying. Applicant would not be eligible for Automatic Admission and would need to follow the guidelines for “Conditional Admission”.

Graduate overall GPA’s must meet the SIU Graduate School requirement of 3.00 or better for at least 9 credit hours of graduate coursework to be considered for admission.

All auto-admitted applications will be reviewed by the program for veri#cation of stated program requirements. The program reserves the right to disallow admission if an applicant has not met all standards for admission to the program.

Non-Declared Status

“Nondeclared” hours from the MPH program can be counted towards the degree. The M.P.H. program offers 5 admission points (eg., SP1, SP2, Summer, Fall1, Fall2).

Taking MPH courses as a non-declared graduate student does not auto-admit students into the MPH program. While students will receive credit for any courses taken that are required for the MPH degree, the Graduate School requirement of a maintained 3.0 GPA must be met in order to get into the program. Additionally, non-declared students must follow the same requirements/listed criteria as any applicant initially applying to the MPH program.

Degree Requirements

A student must complete a minimum of 42 credit hours consisting of at least the following courses:

- PH 505: Foundations of Public Health Knowledge (3 CH)
- PH 506: Communicating Public Health (3 CH)
- PH 507: MPH Experiential Learning Seminar (1 CH)
- PH 508: Leadership in Public Health (2 CH)
- PH 512: Public Health Program Planning (3 CH)
- PH 513: Public Health Analytics I (3 CH)
- PH 514: Public Health Analytics II (3 CH)
- PH 525: Applied Theoretical Foundations of Public Health (3 CH)
- PH 526: Evidence-based Research and Evaluation in Public Health (3 CH)
- PH 532: Public Health Administration: Principles and Practices (3 CH)
- PH 583: U.S. Health System: Organization, Delivery, and Policy (3 CH)
- PH 593: Principles of Epidemiology in Public Health (3 CH)
- PH 598: Grant Writing in Public Health (3 CH)
- PH 599A: MPH Applied Practical Experience (APE) Seminar (1 CH)
- PH 599B: MPH Applied Practical Experience (APE) (2 CH)
- PH 599C: MPH Integrative Learning Experience (ILE) (3 CH)

M.P.H./M.D. Concurrent Degrees

Applicants may apply for a concurrent degree in Medicine and Public Health (must first be admitted to the SIU School of Medicine). Applicants for the Master of Public Health (M.P.H.) degree must have earned a grade point average (GPA) of 3.00 or better (A = 4.00) on the entire last undergraduate GPA earned at the time of application to be admitted in good standing. MPH/MD students must start in the summer.

Concurrent Degree Requirements

For the medical degree, all students must complete all requirements outlined by the SIU School of Medicine. For the M.P.H. degree, a student must complete a minimum of 42 credit hours with the following courses being required during the first year:

- PH 505: Foundations of Public Health Knowledge (3 CH)
- PH 506: Communicating Public Health (3 CH)
- PH 507: MPH Experiential Learning Seminar (1 CH)
- PH 508: Leadership in Public Health (2 CH)
- PH 512: Public Health Program Planning (3 CH)
- PH 513: Public Health Analytics I (3 CH)
- PH 514: Public Health Analytics II (3 CH)
- PH 525: Applied Theoretical Foundations of Public Health (3 CH)
- PH 526: Evidence-based Research and Evaluation in Public Health (3 CH)
- PH 532: Public Health Administration: Principles and Practices (3 CH)
- PH 583: U.S. Health System: Organization, Delivery, and Policy (3 CH)
- PH 593: Principles of Epidemiology in Public Health (3 CH)
- PH 598: Grant Writing in Public Health (3 CH)

In addition, the student must complete the following courses during the fifth year:

- PH 599A: MPH Applied Practical Experience (APE) Seminar (1 CH)
- PH 599B: MPH Applied Practical Experience (APE) (2 CH)
- PH 599C: MPH Integrative Learning Experience (3 CH)

Required:

- Population Health Leadership, 1 week/hour, SIU-SOM
- Clinical Epidemiology, 2 weeks/hours, SIU-SOM

- Emerging Trends in Public Health, 1 week/hour, SIU-SOM
- Clinical Rotations

Optional:

- All Hazards Preparedness and Response, 1 week/hour, SIU-SOM
- Cancer Health Disparities,1 week/hour, SIU-SOM
- Advancing Health Equity in Clinical Practice, 1 week/hour, SIU-SOM
- Parenting and Child Health, 2 weeks/hours, SIU-SOM
- Health Policy Government Relations, 1 week/hour, SIU-SOM
- Social Life of Food, 1 week/hour, SIU-SOM
- Social Innovation in Medicine, 1 week/hour, SIU-SOM
- Addressing Health Disparities: Improving the Health of Populations, 2 weeks/hours, SIU-SOM

Doctor of Philosophy (Ph.D.) in Population Health

The Ph.D. in Population Health in the School of Human Sciences at SIUC is distinguished by its interdisciplinary approach to graduate education. The program will prepare professional leaders in academic, clinical, professional and research settings. The doctoral program will also prepare graduates to develop and implement innovative solutions to population health issues. The Population Health Ph.D. comprises foundational courses, research/scholarly or practice innovation courses, directed mentorship, and dissertation/professional product development exemplifying transition to career independence.

Doctoral students will identify a primary area of emphasis within the School of Human Sciences and a secondary area of emphasis, which is used to inform the program of study and research experience. Each student's primary and secondary areas of emphasis will be identified in consultation with their dissertation chair/advisor during their first semester.

Degree Requirements

Core (22 CH)

- PH 603: PhD Seminar (a minimum of 3 credit hours – one credit per semester)
- PH 533B: Foundations of Public Health II (4 CH) or equivalent
- PH 598: Grant Writing or equivalent (3 CH)
- PH 513: Public Health Analytics I (3 CH)
- PH 514: Public Health Analytics II (3 CH)
- 6 additional credit hours of statistics or qualitative data analysis

Primary Emphasis Area

- 9 credit hours of coursework

Secondary Emphasis Area

- 6 credit hours of coursework

Dissertation (24 CH)

- Original research based on emphasis areas [requires the submission (not necessarily publication) of 3 articles to respected peer-reviewed journals beyond what is required for the comprehensive exam; the final dissertation product will include 5 chapters, where chapter 1 includes an introduction to the three papers], chapters 2-4 include three distinct research projects, and chapter 5 includes a summarization/discussion of the three papers).

Additional Requirements

Preliminary/Comprehensive Examinations – competency based (complete 4 of the options below):

- CTE teaching micro credential completion

- Present (orally or via a poster) original research at a national conference
- Grant application, ideally suited for the student's dissertation (submitted to a federal [e.g., NIH, NSF, DoD], state [e.g., IDPH, IDHS], foundation [e.g., RWJF], or internal [e.g., SIU] source)
- Manuscript peer-review (journal editor-in-chief letter verification)
- Service to the university and profession (service on at least 1 school, college, or university level committee and proof of membership in a professional organization)
- Leadership certificate

Inquiries regarding application should be directed to the director of doctoral studies for Population Health.

Certificate in Gerontology

The School of Human Sciences offers a Certificate in Gerontology interdisciplinary program. PH 440, Health Issues in Aging, is a Certificate requirement for the certificate program. For more information on this Certificate program, please see the Post-Baccalaureate Certificate Programs tab.

Certificate in Public Health

Requirements for the Certificate in Public Health (either track) include:

- 3.0 GPA or higher in undergraduate work or 3.0 GPA or higher in 9 credit hours of graduate coursework. Graduate coursework overrides undergraduate coursework.
- Resume/CV
- One of the following declared majors on transcripts:
  - Public Health
  - Community Health
  - Exercise Science
  - Health Education
  - Nursing
  - Nutrition
  - Pharmacy
  - Psychology
  - Social Work
  - Sociology
  - Other*

  *If other, a letter of interest (500-700 word) stating desire to earn the certificate and how it aligns with career goals is required.

The School of Human Sciences offers two tracks leading to a Certificate (post-baccalaureate) in Public Health requiring 15 credit hours in the following MPH courses:

Epidemiology/Biostatistics Track:

- PH 505: Foundations of Public Health Knowledge (3 CH)
- PH 513: Public Health Analytics I (3 CH)
- PH 514: Public Health Analytics II (3 CH)
- PH 526: Evidence-based Research and Evaluation in Public Health (3 CH)
- PH 593: Principles of Epidemiology in Public Health (3 CH)

Community Health Track:

- PH 505: Foundations of Public Health Knowledge (3 CH)
- PH 512: Public Health Program Planning (3 CH)
- PH 525: Applied Theoretical Foundations of Public Health (3 CH)
- PH 526: Evidence-based Research and Evaluation in Public Health (3 CH)
- PH 593: Principles of Epidemiology in Public Health (3 CH)

For more information on this certificate program, please see the Post-Baccalaureate Certificate Programs tab.

Public Health and Population Health Courses

PH402 - Death Education Designed to prepare educators to conduct learning experiences about death and dying in a variety of school, college, medical care, and community settings. Stress will be placed on developing brief, functional curricula and usable, imaginative, teaching-learning materials and on evaluating resource materials for use in educating at various levels of maturity. Credit Hours: 3

PH403 - Health Advocate Training Provides students with knowledge and skills in the areas of peer health education, health advocacy, and referral. Instruction includes health care information from a wellness point of view. Prepares students for practicum in health advocate program. Credit will not count toward a master's degree in health education. Special approval needed from the instructor. Credit Hours: 3

PH407 - Substance Use Prevention Designed to prepare educators to plan, implement and evaluate substance use prevention programs. Emphasizes incidence/prevalence, etiology, risk factors, short- and long-term effects of substance use. Key elements of effective prevention programs are reviewed. Meets requirements of Illinois state law concerning drug education. Credit Hours: 3

PH410 - Human Sexuality (Same as WGSS 411) Provides detailed information on dimensions of sexuality; characteristics of healthy sexuality; anatomy and physiology; gender roles; relationships; sexually transmitted infections/diseases; contraceptive issues and concerns; sexual victimizations; and sexuality through the life cycle. Credit Hours: 3

PH411 - Emergency Medical Technician in the Wilderness Placement of trained emergency medical technicians into a wilderness situation and having them adopt previously learned skills and newly developed skills. Prerequisite: PH 334 or PH 434. Credit Hours: 6

PH412S - Driving Task Analysis: An Introduction An introductory course that deals with the highway transportation system, traffic problems, the driving task, perception and implementation of the driver education classroom program. Observation of a teaching environment is included. A valid driver's license is required. Credit Hours: 3

PH413S - Injury Prevention and Safety Introduces the concepts and topics of injury prevention and safety. Course areas include: school, farm, consumer, fire, home, traffic, occupational, recreational, and disaster. Credit Hours: 3

PH414 - Sexuality Education Focuses on knowledge/skills needed to address complex issues of sexuality education. Discussion will include challenges/resources for all health education settings and related disciplines. Purposes/goals, the nature of sexuality education teachers/learners, and "best practice" will be covered. Emphasis on developing competencies essential for professional practice. Credit Hours: 3

PH415 - Health Counseling This course teaches basic communication skills and intervention strategies for helping people make positive health related lifestyle changes. It is not a course in therapeutic counseling; it focuses on helping average people to function in the healthiest way possible. Credit Hours: 3

PH430 - Health and Injury Control in a Work Setting Assesses the health and injury control programs present in a work setting. Emphasis given to employee programs in health, wellness, and injury control that are effective. Field trips to work sites are included. Credit Hours: 3

PH434 - Advanced First Aid and Emergency Care Meets the needs of those in positions where advanced first aid and emergency care is required. A nationally recognized First Aid and CPR "First Responder" certification may be obtained with successful completion of the course. Purchase of first aid kits and protective equipment are necessary. Prerequisite: PH 334 or consent of instructor. Students will be required to pay a laboratory fee of $20. Credit Hours: 4

PH435 - Work Site Safety and Health Evaluation This course covers methods of inspecting and evaluating health and safety hazards at a work site including analysis of specific job assignments. It also introduces the student to injury and incident investigation techniques. The course will include hands-on work site evaluation. Credit Hours: 2

PH440 - Health Issues in Aging (Same as GRON 440) Course content includes demographic trends; physiological changes associated with aging; health care and consumer challenges; cultural differences; psychological effects of aging; housing; long-term care; retirement; care giving; and formal, informal, and community-based support systems. Credit Hours: 3

PH441 - Women's Health The course deals with a wide variety of health concerns of American women as consumers in the current health marketplace. Major categories of topics include health products, health services, and sources of health information of particular interest to women. Emphasis is also placed on current health related issues of women. The major purpose of the course is to provide a basis for informed decision-making by the female consumer. Credit Hours: 3

PH442S - Developing Vehicle Operational Skills: Driver Education Laboratory Experiences Learning activities will focus on preparing the prospective driver educator to conduct activities that develop operational skills for a novice driver. Emphasis is placed on laboratory organization and administration, maintaining a learning environment, developing laboratory instructional modules, and conducting learning experiences. Prerequisite: PH 412S. Credit Hours: 3

PH443S - Developing Classroom Skills: Driver Education Classroom Experience Learning activities will focus on preparing the prospective driver educator with the skills to teach in the driver education classroom with application to classroom organization, maintaining a safe learning environment, developing instructional modules, and conducting learning experiences. Prerequisite: PH 412S with a grade of C. Credit Hours: 3

PH445 - Advanced Driver Education Instructor Training Prepares prospective instructors of advanced driving techniques. Emphasis is placed upon safe driving practices, vehicle dynamics, emergency vehicle operation, in-car response to simulated driving emergencies, and instructional techniques. Special approval needed from the instructor. Credit Hours: 3

PH461 - Health Education Workshop A different focal theme each year; e.g., mood modifying substances, ecology, human sexuality, emotional and social health dimensions. Information, ideas, and concepts are translated into teaching-learning materials and approaches; continuing opportunity for interaction between prospective and experienced teachers. Credit Hours: 1-12

PH470S - Highway Safety as Related to Alcohol and Other Drugs Relationship between alcohol and other drugs and traffic accident causes. A review of education programs designed to minimize drug related accidents. Restricted to advanced standing or consent of instructor. Credit Hours: 3

PH471 - Public Health Instructional Strategies This course is designed for graduate students who are teaching assistants in Public Health. The purpose of the course is to enhance professional skills of those who are responsible for teaching health education, general education, and first aid. Credit Hours: 2

PH476 - Stress Management A study of the physiological, emotional and sociological stressors and their underlying mechanisms in states of disease and health. Particular emphasis is placed upon prevention and control of stress via self assessment techniques and proficiency in self control techniques such as biofeedback, autogenic training, meditation and progressive muscle relaxation. Credit Hours: 3

PH480S - Traffic and Driver Education Program Development Acquaints students with curriculum innovation, current philosophy, learning and teaching theories, and instructional designs. Students will develop learning packages and modules. Prerequisite: PH 443S or consent of instructor. Credit Hours: 3

PH484 - Preventing Violence in Educational Settings Designed to prepare educators, administrators, and other professionals to plan, implement, and evaluate violence prevention, conflict resolution, and crisis intervention programs in educational settings. Incidence/prevalence, etiology, and risk/protective factors related to youth violence will be examined. Current theories and models related to program planning and implementation will be applied to design coordinated, integrated school/community

programs. Based on current research, key elements of effective curricula and other program components will be reviewed. Credit Hours: 3

PH490A - Field Experiences in Schools, Community Health Field observation, participation, and evaluation of current school or community health education or safety programs in agencies relevant to student interests. Prerequisite: all required health education courses. Special approval needed from the instructor. Credit Hours: 2-12

PH490B - Advanced Field Experience in School, Community Health or Injury Prevention Education Advanced field observation, participation and evaluation of current school or community health education or injury prevention programs in agencies relevant to student interests. Prerequisite: grade of B or better in PH 490A. Special approval needed from the instructor. Credit Hours: 2-6

PH491 - Health Teaching/Learning: School and Community Teaching and learning strategies at secondary school levels and in other community group settings. Opportunities to examine and observe a variety of educational strategies applicable to health education. Credit Hours: 3

PH496 - Industrial Hygiene Provides a background in the recognition, evaluation, and control of toxic materials and hazardous physical agents in the work environment. Special approval needed from the instructor. Credit Hours: 4

PH499 - Rx: Education in Health Care Settings Designed for members and potential members of the health care team to explore educational concepts and strategies applicable to a variety of health care settings. Includes rights and responsibilities of consumer and professional, determinants of health behavior, contrasting models of health care, communication skills, media and materials and planning, implementing and evaluating educational programs. Open to medical and dental personnel, nurses, health educators, dietitians, therapists, pharmacists, social workers, and related professionals. Credit Hours: 3

PH505 - Foundations of Public Health Knowledge This course provides an overview of the interdisciplinary field of public health. History and ongoing evolution of public health services and delivery systems in the U.S., essentials of public health practice, and federal, state, and local public health functions are considered. Emerging health problems, changing population dynamics, and global health context will be examined. Credit Hours: 3

PH506 - Communicating Public Health This course assists students in developing skills and identifying opportunities for communicating public health messages through the preparation of technical papers for public health, other health science-related, area-specific, and cross-disciplinary journals, as well as communicating other professional and lay publications. Additional skills relate to the development of press releases, letters to the editor, preparation of posters, development of oral presentations for diverse audiences, estimating readability of written materials, assessing health literacy, preparing pamphlets and other written materials, designing messages for distribution by mass media, including but not limited to social media and social marketing. Credit Hours: 3

PH507 - MPH Experiential Learning Seminar This course will introduce Master of Public Health (MPH) students to public health resource identification and utilization to understand and engage in public health fieldwork and service. MPH students will develop a professional portfolio to build upon through the tenure of the program. Credit Hours: 1

PH508 - Leadership in Public Health This course provides an overview of the core principles in Public Health Leadership. Major theories and concepts in leadership and methods for applying these to public health will be discussed. Credit Hours: 2

PH512 - Public Health Program Planning This course will present theories/models for health promotion program planning and implementation in community/public health settings. Steps to program planning, including: logic models, needs assessment, community organizing, evaluation/assessment, and social marketing will be addressed. Credit Hours: 3

PH513 - Public Health Analytics I An introduction to biostatistics; examination of theories of population projections; collection, organization, interpretation, summarization, and evaluation of data relative to public health happenings with emphasis on graphic presentation. Credit Hours: 3

PH514 - Public Health Analytics II The application of technology to engage communities and individuals in behavioral and environmental change processes. The course will focus on the use of technology to describe the magnitude of health problems and their sources; analyze risk factors; identify community strengths from which strategies may be defined and tools created to intervene, prevent problems, and promote health and well-being; and continuously evaluate, refine, and implement what works. Prerequisite: PH 513 with a grade of B or better or consent of instructor. Credit Hours: 3

PH515 - Contemporary Issues in Health-Related Fields This course is designed to expand the conceptual framework for health education research, practice, and professional development by examining contemporary issues in health and related fields. It includes reading, analyzing, interacting, and reflecting about selected critical issues and future concerns as they relate to the health education profession as well as individual, community, and societal health-related needs. Credit Hours: 3

PH520 - Special Topics/Independent Study An area of study to be determined by students in consultation with the health education faculty that goes beyond the current health education course offerings. 1-3 credits; may be repeated twice for maximum of 6 hours. Special approval needed from the instructor. Credit Hours: 1-3

PH525 - Applied Theoretical Foundations of Public Health Examines health-related motivation and behavior through the study of relevant psychological, sociological, and educational theory and research. Emphasis is on application of behavioral and behavior-change theories and constructs in designing effective health education and promotion programs. Credit Hours: 3

PH526 - Evidence-based Research and Evaluation in Public Health Introduction to research and evaluation. Includes survey and analyses of health testing and research/evaluation procedures, uses and limitations of knowledge and attitude tests, behavioral inventories, checklists, questionnaires, interviews, and other techniques. Credit Hours: 3

PH530S - Research in Traffic Safety A study of unique problems related to traffic safety and a review and evaluation of contemporary studies. Restricted to graduate standing or consent of instructor. Credit Hours: 3

PH532 - Public Health Administration: Principles and Practices This course is designed to provide a broad overview of key administrative issues in public health, including building and sustaining a public health workforce, disease control and prevention, emergency preparedness, legal issues, and financial considerations. Attention will be given to the application of management concepts and principles related to public health organizations at the national, state, and local levels. Credit Hours: 3

PH533B - Foundations of Public Health II This course will provide a broad overview of quantitative research in public health, including research designs, research questions, assumptions, limitations, data collection methods, sampling, instrument development, and data analysis and interpretation. Discussion of health-related theories/models and ethical considerations will be integrated throughout the course. Credit Hours: 4

PH536 - Professional Preparation in Public Health Considers national, state and local factors influencing professional preparation, accreditation and certification processes. Emphasis upon influences of official and non-official agencies. Historical perspective, the present status, and future directions of the profession. Credit Hours: 3

PH541 - Issues in Health Care Examination of current and continuing issues in the provision, administration, financing, and regulation of health care services. Prerequisite: PH 583 with grade of C or better or consent of instructor. Credit Hours: 3

PH550S - Current Developments in Traffic and Safety Education Current problems, trends and research studies in traffic and safety education are reviewed, critiqued and evaluated. Restricted to graduate standing or consent of instructor. Credit Hours: 3

PH555 - Research in Population Health Plan, conduct, and report on research pertaining to population health. Doctoral students in the Population Health program may take this course for up to 9 credit hours in a semester. Credit Hours: 1-9

PH555S - Traffic Safety Management Course deals with highway safety legislation and other acts related to traffic safety. Application of safety management techniques, procedures and structure of federal and state agencies are emphasized. Special approval needed from the instructor. Credit Hours: 3

PH561 - Advanced Public Health Workshop A different focal theme each year; e.g., technology and health education; coordinated school health programs; social marketing; mental health. Information, ideas and concepts are translated into teaching/learning materials and approaches; continuing opportunity for interaction between prospective and experienced health educators. Credit Hours: 1-12

PH571 - Professional Development for Teaching Assistants This course is designed to assist graduate teaching assistants to develop and improve skills necessary for performing their responsibilities. Emphasis will be placed on teaching/learning processes; classroom strategies and skill development; responding to diverse student populations; communication across the curriculum; teaching outside the classroom; identifying campus and community resources, support services, media, and technologies; evaluation and assessment. Restricted to graduate teaching assistants. Special approval needed from the instructor. Credit Hours: 3

PH583 - U.S. Health System: Organization, Delivery, and Policy This course examines dynamics and trends in organization, financing, and delivery of health care in the United States. Specific current health policy issues and the political, social, and economic forces that affect them are analyzed. Practical implications for public health professionals will be considered. Credit Hours: 3

PH585 - Global Health Issues This course is designed to introduce students to current health concerns in economically developing nations by examining socioeconomic, cultural, and political issues impacting health. Basic epidemiologic principles will be used to study disease and adverse health conditions in developing countries as well as understand and critique possible intervention strategies. Implications for health educators working in international settings will be discussed. Credit Hours: 3

PH588 - Current Issues in Environmental Health This course will address core principles and concepts of environmental health disciplines, analyze environmental factors impacting human and ecological health, and explore environmental health tools through their application to current issues of concern to government agencies. Credit Hours: 3

PH592 - Practicum in Safety and Industrial Health Students are assigned full-time to a safety agency or industry for experience in either safety or industrial health. Restricted to those specializing in safety industrial health. Special approval needed from the instructor. Credit Hours: 8

PH593 - Principles of Epidemiology in Public Health This course will present principles and practices related to the study, prevention and control of health-related conditions in the human population. Emphasis will be placed on understanding the principal concepts of epidemiology, including aspects of disease distribution, epidemiologic methods, risk assessment of disease and injury, descriptive and analytic epidemiologic methods and study designs, and application of epidemiologic data to the prevention and control of disease and injury. Format for the class will include lecture and small group seminars. Credit Hours: 3

PH597 - Seminar in Public Health Advanced graduate students discuss individual health projects and present research problems. Each will present a dissertation prospectus. The course will cross two semesters. The first semester will require class attendance. The second will require attending dissertation prospectus and defense meetings and writing individual reports. Prerequisite: PH 533B. Credit Hours: 2

PH598 - Grant Writing in Public Health Consideration is given to funding sources, proposal guidelines, procedures for support, budgetary requirements and evaluation procedures. Students examine different types of funded projects, develop a research proposal and analyze the art of grantsmanship and political action. Credit Hours: 3

PH599 - Thesis Credit Hours: 1-6

PH599A - MPH Applied Practical Experience (APE) Seminar The purpose of the MPH Applied Practice Experience Seminar is to prepare students for their applied practice experience and for a future as a public health professional. This seminar serves as one of the prerequisites for enrolling in the MPH Applied Practical Experience (PH 599B). Through this semester, students will prepare the components

of the applied practice experience learning agreement. This seminar provides students with useful skills needed to complete an applied practice experience and to work in a public health or community setting. Students will have a specific topic, project(s) and/or site in mind prior to taking this course, which is typically taken in the second semester of Year 1. Prerequisite: PH 507 with a grade of B or better. Credit Hours: 1

PH599B - MPH Applied Practical Experience (APE) Master of Public Health (MPH) students will demonstrate competency attainment through applied practice experiences. All MPH students are required to complete a 240-hour experience with a community-based component. The Applied Practice Experience (APE) provides a practical experience in a public health setting where students apply skills and knowledge they gained during didactic courses to attain at least five competencies. Dual degree students have opportunities to integrate and apply their learning from both degree programs through applied practice experiences. Students meet the APE requirements by supporting the Program's mission and students' career goals, to the extent possible. Prerequisite: PH 599A with a grade of B or better. Credit Hours: 2

PH599C - MPH Integrative Learning Experience During the final semester(s) of study, students are required to complete an integrative learning experience (ILE) that demonstrates synthesis of foundational and program competencies. ILEs require two products: 1) a high-quality written product and 2) a presentation on the ILE. Prerequisite: PH 599B with a grade of B or better. Credit Hours: 3

PH600 - Dissertation Credit Hours: 1-16

PH601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

PH603 - Ph.D. Seminar in Population Health This course is a discussion of current topics and literature in Population Health. Provides a forum for PhD students and faculty presentations and review of current research efforts. Encourages integration of content knowledge to prepare for careers in the field. Restricted to admission to PhD program in Population Health or consent of instructor. Credit Hours: 1

PH699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Public Health and Population Health Faculty

Jayawardene, Wasantha, Assistant Professor, Ph.D., Indiana University, 2014; 2022.

McDaniel, Justin T., Associate Professor, Ph.D., Southern Illinois University Carbondale, 2016; 2017.

Emeriti Faculty

McDermott, Robert J., Professor, Emeritus, PhD, University of Wisconsin-Madison, 1981; 2017.

Public Safety Administration

Graduate work leading to a Master of Science in Public Safety Administration is offered by the School of Justice and Public Safety. The program prepares its graduates with the analytic capabilities and problem solving skills that will enable them to succeed and progress in their professional careers. The 30-credit hour curriculum develops advanced administrative, managerial, and leadership skills critical to career advancement and promotion within these industries. The academic setting of this program will foster creative thinking and communication skills in our pursuit of excellence. The program culminates in an applied practicum as opposed to a thesis.

Criteria for Unconditional Admission

In order to be admitted to the M.S. in PSA degree program, an applicant must meet Graduate School and program admission requirements.

General requirements for domestic student admission to SIUC Graduate School include: a 2.7 or better grade point average (on a 4.0 grading scale) on the entire last undergraduate GPA earned at the time of application or a 3.0 grade point average on all previous graduate work. Specific requirements or equivalences for international student admissions and early admission consideration may be found on the SIUC Graduate School website at gradschool.siu.edu/apply/.

Applicants to the M.S. in PSA program may begin the admissions process when they need no more than 32 credit hours beyond the credit shown on their transcript at the time of application to complete all requirements for the bachelor's degree.

Any applicant who has completed 12 or more credit hours of graded graduate work at an accredited U.S. educational institution, and who has a GPA of 3.00 or better on all graduate work, may be exempted from the 2.7 undergraduate grade point average requirement. Any student with fewer than 12 credit hours of graduate work may be admitted to the Graduate School on the basis of undergraduate GPA only.

To meet program requirements, candidates must have a baccalaureate degree from an accredited institution or have completed all undergraduate degree requirements prior to the beginning of the classes for the term for which admission is sought. Preferred consideration is given to applicants with a bachelor's degree in Fire Science, Fire Service, Emergency Management, Emergency Medical Services (EMS) or Homeland Security, or individuals with other baccalaureate degrees with direct experience in fire fighting, public safety, EMS or related experience.

Master of Science (M.S.) in Public Safety Administration

Degree Requirements

Required Core Courses

All candidates for the M.S. in Public Safety Administration degree are required to complete four core courses (12 credit hours).

- PSM 501: Administrative Law
- PSM 503: Public Policy/Ethics
- PSM 504: Fiscal Financial Management
- PSM 509: Strategic Planning

Program Options

In addition to the core courses, students must complete an additional 18-21 credits of coursework by selecting one of the two options below.

Practicum Option:

The practicum option requires 30 credits overall. Students will enroll in PSM 512 Practicum (3 CH) during their final semester in the program to undertake a major simulation or drill to demonstrate their leader, planning, and evaluation skills. Students must also complete an additional 15 credit hours of graduate (500-level or above) Public Safety Administration courses. With the consent of the program coordinator, students may be permitted to satisfy the elective course requirements with graduate courses outside of Public Safety Administration.

Course-Only Option:

The course-only option requires 33 credits overall. Students must complete an additional 18 credit hours of graduate (500-level or above) Public Safety Administration courses (PSM512 Practicum does not satisfy this requirement). With the consent of the program coordinator, students may be permitted to satisfy the elective course requirements with graduate courses outside of Public Safety Administration

and/or with up to six credit hours of 400-level Public Safety Administration courses taken for graduate credit in accordance with graduate school policy.

Accelerated Master's Program

The accelerated M.S. program in Public Safety Administration allows motivated and high achieving students to complete a program leading to an undergraduate Bachelor of Science degree in Public Safety Management and Master of Science degree in Public Safety Administration in five years. Nine credit hours are double counted toward an undergraduate and a master’s degree. The program requires completion of four core courses (PSM 501, PSM 503, PSM 504, PSM 509) and 18-21 of additional graduate credit hours depending upon whether the student selects the practicum (30 credit hours total) or course-only (33 credit hours total) option. Practicum credit hours may not be applied toward the course only option.

Public Safety Administration Courses

PSM401 - Practical Research in Public Safety This course examines the rationale for conducting research, its applications, and how it can be applied to enhance the public's protection. Students will learn the proper application of standards and codes to help improve community safety and steps that can be taken to improve first responder wellness. Prerequisite: PSM 350. Credit Hours: 3

PSM402 - Current Issues in Public Safety Management A review of the current problems affecting public safety with particular emphasis on resource allocation, planning, and constraints. Credit Hours: 3

PSM406 - Management of Emergency Services This course is for students interested in the practice and principles of Emergency Services management and the processes that contribute to the effectiveness of day-to-day operations within an emergency service organization. This course introduces the public safety professional to topics that include government structure, strategic planning, injury prevention, risk management and safety, customer service, human resources management, financial management, fleet management, career development, quality management, data collection and research, labor relations, and special operations. Restricted to PSM major or consent of program coordinator. Credit Hours: 3

PSM410 - Organizational Response to Natural and Technological Events This course examines responses to natural and man-made disasters. It also looks at the unique role of the local first responder with other governmental agencies. Students will identify the common elements of a disaster response and the roles of each emergency responder and agency. Course emphasis is on the actions and procedures "at the scene" where decisions are made rather than concepts and policies applied by officials physically removed from the scene. Restricted to PSM major or consent of program coordinator. Credit Hours: 3

PSM412 - Public Safety Exercise and Evaluation Students will be trained in determining public need during an emergency event through exercise. Students will learn the impact that effective project and operational planning and management can have on the overall effectiveness of public safety organizational performance. Restricted to PSM major or consent of program coordinator. Credit Hours: 3

PSM416 - Domestic Terrorism and Extremist Groups This course traces the history, emergence, and growth of domestic terrorist and extremist groups within the United States. Students will assess various groups' intentions, capabilities, and activities within contexts of and ramifications on political, national security, and legal paradigms. "Domestic Terrorism and Extremist Groups" traces the roots of domestic political violence and terrorism in the United States, and will expose the student to academic works concerning contemporary domestic extremists and the terrorist threat they may pose. The course will explore how a radical nature has continued to persist in isolated pockets throughout our nation's history. Restricted to PSM major or consent of program coordinator. Credit Hours: 3

PSM421 - Professional Development Introduces students to the various elements involved in obtaining a promoted position in their chosen fields. Topics may include personal inventories, placement

services, employment agencies, interviewing techniques, resumes, letters of application, references and employment tests. Credit Hours: 3

PSM450 - Analytical Approaches to Public Fire Protection This course examines tools and techniques of rational decision making in fire departments, including databases, statistics, probability, decision analysis, utility modeling, resource allocation, cost benefit analysis, and linear programming. May be taken as an independent study. Credit Hours: 3

PSM465 - Grant and Proposal Writing for Public Safety A comprehensive course that equips students to seek public safety grants from governmental, public, and private funding sources. This course examines the funding application and approval processes and overall grant administration. Credit Hours: 3

PSM490 - Independent Study in Public Safety Management Supervised readings or independent research projects in various aspects of Public Safety Management. May re-enroll for a maximum of six credits. Requires instructor approval. Credit Hours: 1-3

PSM500 - Terrorism, WMD, and Contemporary Issues This course will begin by looking at the historical evolution of terrorism and weapons of mass destruction. We will analyze theories and mitigation, preparedness, and response tactics. Credit Hours: 3

PSM501 - Administrative Law This course addresses administrative law, the type of law governing the powers, limits, and operations of government administrative agencies, and the rights of individuals in dealing with those agencies. Credit Hours: 3

PSM502 - Emergency Management This course examines historical and contemporary theories, principles, and practices of Emergency Management, particularly the all-hazards approach and the related processes of mitigation, preparedness, response and recovery. Using a case study approach, the course considers the evolution of Emergency Management and its practical application with government and private-sector institutions. Credit Hours: 3

PSM503 - Public Policy/Ethics The focus of this course is on how public action takes place; what courses of action are available; and the implications, costs, and consequences of those actions. The public safety executive of the future will require a more disciplined understanding of public policy. This course will encourage a familiarity with public issues that will be useful in making administrative or policy decisions. Credit Hours: 3

PSM504 - Fiscal Financial Management This advanced introduction to fundamentals of financial management emphasizes analysis of financial statements, organizational-departmental-divisional cash flows, taxes, the financial environment, bonds and their valuation, stocks and their valuation, and cost of capital. Credit Hours: 3

PSM505 - Executive Leadership This course includes leadership, multiple roles, decision making skills, influencing leaders, teaching leaders, storytelling, persuasion, succession planning, and evaluating. Credit Hours: 3

PSM506 - Disaster Preparedness and Crisis Management Students will receive the preparation necessary to uniquely manage and make critical decisions regarding a major incident or disaster. The course focuses on specialized decision-making processes involving analytical methods and information management. Interaction with other agencies and effective coordination of roles and efforts within a structured command system enables the crisis manager to make decisions in an unstructured environment. Credit Hours: 3

PSM507 - Public Management The purpose of the course is to provide a survey of the theory and practice of management in public sector organizations. Emphasis will be given to a comparison of management in the public and private sector, management functions, and the context in which the public manager must perform the functions. Students must complete pre-class, in-class, and post-class assignments. Credit Hours: 3

PSM508 - Critical Issues in Homeland Security This course examines the evolving nature of the Homeland Security enterprise by examining a number of contemporary topical issues and their immediate and long-term impact on Homeland Security policies and practices. Particular attention is paid to the role

of the media, law, governmental and non-governmental organizations, and political entities at the federal, state, and local levels in determining and shaping Homeland Security policy/practice. Credit Hours: 3

PSM509 - Strategic Planning This course examines and defines the steps, concepts, theory, and value of comprehensive strategic planning. Students will participate in the formulation, financial development, operational management, and evaluation of currently utilized strategic plans and take part in the outline and design of a mock strategic plan. Credit Hours: 3

PSM510 - Dispute Resolution/Mediation/Negotiation This course is about labor relations and employment disputes in the public sector and the various methods for resolving labor and personnel conflicts. Collective bargaining, arbitration, mediation, and other alternative dispute resolution methods will be applied to cases and simulation exercises relevant to government employees. Credit Hours: 3

PSM511 - Critical Thinking and Decision Making This course is an examination of knowledge and research as they pertain to public safety. Exploration of the relationship between creative and critical thinking, analysis of scientific methodology and logic, language and interpretation and their influence on public safety organizations. Credit Hours: 3

PSM512 - Practicum Under the supervision and direction of a member of the faculty, students will undertake a project involving substantive participation in managing a major simulation, exercise, or drill involving multiple agencies and institutions. Student involvement will include planning, designing, developing, conducting, and evaluating the simulation or drill. Students must complete pre-class, in-class, and post-class assignments. Requires the approval of the Lead Site Coordinator. Credit Hours: 3

PSM513 - Organizational Leadership This course provides students with an examination of techniques of administration and supervision in public safety administration. Topics include the ever-changing public safety environment and trends impacting leadership competencies. Specific public safety factors that influence organizing managing of varying public safety organizations, such as career vs. paid on call or volunteer, and municipal vs. private ambulance. Focus will be given on the professional bureaucracy that is complex given regulatory issues, political factors, and the era of the informed constituent. Credit Hours: 3

PSM514 - Leadership in Public Safety Administration This course explores ethics and leadership as they are commonly encountered in modern public safety environment. Students will study ethics and leadership from a psychological point of view with greater attention to issues of character and social responsibility. This course considers current issues in leadership, leadership styles, digital leadership, data analytics for decision-making, and implications for instructional leaders and designers at all levels who will explore what it means and what it takes to be a leader. Prerequisite: PSM 513. Credit Hours: 3

PSM515 - Special Topics in Public Safety Management Specialized study for the investigation of management problems relating to the student's career objective. Studies of the management techniques as practiced in the profession. Topics may be suggested by both faculty and student. Restricted to approval of the Lead Site Coordinator of Graduate Studies for PSM. Credit Hours: 3

PSM601 - Continuing Enrollment For graduate students who have not finished their degree program and who are in the process of working on their thesis, research paper, or capstone project course (PSM 512). Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Public Safety Administration Faculty

Laycoax, Lindsay M., Lecturer and Lead Site Coordinator, Public Administration, M.S., Governors State University, 2007; 2010.
Renz, Peter L., Lecturer, Non-Profit Administration, M.N.A., University of Notre Dame, 2001; 2014.

Emeriti Faculty

Ritzel, Dale, Professor, Emeritus, Ph.D., Southern Illinois University, 1970.

Quality Engineering and Management

Mission Statement

The mission of the School of Applied Engineering and Technology is to provide value to our stakeholders through innovation in applied engineering education.

Graduate work leading to a Master of Science in Quality Engineering and Management is offered by the School of Applied Engineering and Technology. The objective of the program is to develop quality and management professionals who can plan, coordinate, design, implement, and control the quality function in manufacturing and service companies in order to increase productivity, optimize resources, decrease waste, and improve product quality. Course offerings and research are available in the areas of quality assurance, six sigma, lean manufacturing, project management, and reliability. The program provides advanced education for students with baccalaureate degrees in engineering, engineering technology, technology, and also an excellent continuing education opportunity for individuals with technical degrees who wish to expand their education in the area of quality and management systems.

Master of Science (M.S.) in Quality Engineering and Management

Admission

Candidates for this program must be accepted by the Graduate School and the School of Applied Engineering and Technology. Candidates should possess a bachelor's degree with a major in a technical area and have a GPA of no less than 3.0/4.0 on the entire last undergraduate GPA earned at the time of application. A student whose undergraduate training is deficient may be required to take additional courses to compensate for deficiencies identified by the school's graduate program committee.

This program requires a nonrefundable $65 application fee that must be submitted with the application for admission to graduate study in Quality Engineering and Management. Applicants must pay this fee by credit card.

Program Requirements

Graduate students who have been admitted into the M.S. in Quality Engineering and Management program must complete a total of 30 credit hours of graduate-level credit of which 15 credit hours must be at the 500 level.

Within the 30 credit hour requirement, students must complete the following four core courses:

- QEM 510: Quality Assurance (3 CH)
- QEM 525: Six Sigma Black Belt II (3 CH)
- QEM 530: Lean Manufacturing II (3 CH)
- QEM 540: Reliability Analysis (3 CH)

The remainder of the 30 credit hours must consist of at least 18 credit hours of QEM and/or IMAE graduate elective courses as specified in the student's program of study. Elective courses in QEM are:

- QEM 535: Service Quality (3 CH)
- QEM 545: Project Management II (3 CH)
- QEM 550: Project Leadership (3 CH)
- QEM 555: Human Safety and Risk Management (3 CH)
- QEM 565: Management of Information Technology Resources (3 CH)
- QEM 570: Energy Management and Conservation (3 CH)

Students not meeting specific requirements for the above core courses will be required to complete the following list of courses:

- IMAE 450/TRM 470: Project Management (3 CH)

- IMAE 465: Lean Manufacturing (3 CH)
- IMAE 470A: Six Sigma Green Belt (3 CH)
- QEM 500: Six Sigma Green Belt II (3 CH)
- QEM 515: Six Sigma Black Belt (3 CH)

*__Note:__ IMAE courses taken for undergraduate credit cannot be applied towards graduate credit hours, unless the student has been accepted into the accelerated program.

In the thesis option a program of study including the above required courses (12 credit hours), the master's thesis (six credit hours), and the remaining 12 credit hours will be selected by the graduate adviser and the student.

Additional Information

Teaching or research assistantships and fellowships are available for qualified applicants. Additional information about programs, courses, assistantships, and fellowships may be obtained from the College of Engineering, Computing, Technology, and Mathematics or from the director of the school.

Accelerated Master's Program

Industrial Management and Applied Engineering (IMAE) students with senior standing and a GPA of 3.5 are eligible for the Accelerated Master's program. Students pursuing their M.S. in Quality Engineering and Management (QEM) after completing their Bachelor's degree in IMAE will be able to apply up to 9 credit hours of approved IMAE coursework towards the QEM degree. This will allow the student to complete the degree requirements in about a year. Students must complete a Graduate School application and work with the graduate advisor on a program of study. The accelerated master's program allows students who have advanced degree aspirations the ability to save money by completing their studies quicker and to enter the job market sooner.

The Quality Engineering and Management accelerated program with the non-thesis option requires satisfactory completion of twelve credit hours in core courses: QEM 510, QEM 525, QEM 530 and QEM 540 and eighteen credit hours of elective graduate credit, which may include up to nine IMAE credit hours at the 400-level taken as an undergraduate.

The Quality Engineering and Management accelerated program with the thesis option requires satisfactory completion of twelve credit hours in core courses: QEM 510, QEM 525, QEM 530, and QEM 540, six credit hours of thesis and twelve credit hours of elective graduate credit, which may include up to nine IMAE credit hours at the 400-level taken as an undergraduate.

Quality Engineering and Management Courses

QEM500 - Six Sigma Green Belt II The objective of this course is to provide the student with a complete coverage of the statistical and analytical tools used and applied in the "Six Sigma" methodology at the green-belt level. Topics include: discrete probability distributions, continuous probability distributions, statistical process control tools, quality control charts, process capability analysis, gauge and measurement capability studies, cumulative sum control charts and exponentially-weighted moving average control charts. Prerequisite: IMAE 307 or MATH 140 or MATH 150, IMAE 470A or consent of instructor. Restricted to 3rd Year, 4th Year or graduate standing in the College of Engineering, Computing, Technology, and Mathematics except when approved by School of Applied Engineering and Technology. Credit Hours: 3

QEM505 - Research Methods The objective of this course is to familiarize the students with the methods needed in research. Emphasis is placed on how these methods can be applied in the quality engineering & management area. Topics include development of research proposals, use of statistics in the analysis and communication of the results. Restricted to enrollment in quality engineering and management program or consent of instructor. Credit Hours: 3

QEM510 - Quality Assurance Study of recent advances in quality planning, quality measurement, design assurance, process control, participatory management, supplier quality, customer relations, and improvement concepts. Prerequisites: IMAE 470A; IMAE 470B or QEM 500. Credit Hours: 3

QEM515 - Six Sigma Black Belt The purpose of this course is to provide the student with a comprehensive coverage of the knowledge areas and tools of Six Sigma beyond green-belt training, focusing on descriptive and analytical methods to deal with variability including point and interval estimation, hypothesis testing, and design of experiments. Topics include: confidence intervals, hypothesis testing, regression analysis, analysis of variance, single factor experiments, block design of experiments. Prerequisite: IMAE 307 or equivalent; IMAE 470B or QEM 500 with grades of C or better. Restricted to College of Engineering, Computing, Technology, and Mathematics students or school approval required. Students who have taken IMAE 480 are ineligible to enroll. Credit Hours: 3

QEM525 - Six Sigma Black Belt II The purpose of this course is to provide the student with knowledge of the most advanced areas of the Six Sigma black-belt training. Advanced fractional factorial experiments, response surface methodology, robust design and process, design for Six Sigma and other advance Six Sigma principles and techniques are covered in this course. Prerequisites: IMAE 470A; IMAE 470B or QEM 500; IMAE 480 or QEM 515. Credit Hours: 3

QEM530 - Lean Manufacturing II This course will cover the principles and techniques of lean manufacturing. Major topics covered include value stream mapping, pull system/Kanbans, continuous improvement/Kaizen, lean six sigma, lean simulation, and other modern lean manufacturing techniques and issues. Prerequisite: IMAE 465. Credit Hours: 3

QEM535 - Service Quality This course examines how organizational leadership, strategic development and deployment of service management systems are used to achieve service quality. Key service quality management concepts of customer and market focus, employee focus, communication, and service delivery will be taught through the use of case studies, article reviews and team projects. Prerequisite: none. Credit Hours: 3

QEM540 - Reliability Analysis The objective of this course is to provide the student with an overview of the basic techniques applied in the field of reliability and failure data analysis in a manufacturing environment. Prerequisite: IMAE 470B or QEM 500. Credit Hours: 3

QEM545 - Project Management II This course is an advanced study of the concepts in project management, building on the fundamentals established in prerequisite courses. Using MS Project, students will work individually and in teams to develop appropriate tools and documentation typically utilized to implement, control, and closeout projects. Computerized scheduling and cost control, quality systems, risks management, procurement, and project termination. Prerequisite:IMAE 450. Credit Hours: 3

QEM550 - Project Leadership This course is designed to develop a graduate student's human relationship skills for leading project teams. Through the use of case studies and practical applications, students will learn effective leadership, team development, motivational, organizational planning, and conflict resolution practices. Credit Hours: 3

QEM555 - Human Safety and Risk Management Understanding risk and safety issues inevitably involves many disciplines, as does their effective management. Through the combination of scientific evidence, practical examples, and case studies presented in this course, students will be equipped to identify, assess and develop strategies to mitigate occupational and environmental risk. Methods used to effectively communicate and understand risk factors as presented by various agencies. Credit Hours: 3

QEM565 - Management of Information Technology Resources The use of information and communication technologies (ICT) dominates the world of business. There are ongoing fundamental changes in the way organizations execute their business processes and interact with each other. This course helps students understand the relationship between information systems and business performance. This will enable students to appreciate the importance of strategic implementation and proper manage of ICT resources. Credit Hours: 3

QEM570 - Energy Management and Conservation This course covers the principles and policies of energy management and auditing. It covers development, implementation and economic analysis, using

simple pay back and life-cycle cost models, of these programs and audits. It focuses on efficient operation of electric motors, lighting, boilers, furnaces, and facilities climate control. It surveys current energy policy with emphasis on LEED design and certification. Prerequisites: MATH 150 or IMAE 307, PHYS 203A,B or equivalents. Credit Hours: 3

QEM580 - Seminar Collective and individual study of issues and problems related to quality engineering and management. Graded S/U. Restricted to enrollment in the M.S. degree in quality engineering and management. Credit Hours: 1-4

QEM592 - Special Investigations in Quality Engineering and Management Advanced topics in quality engineering and management. Topics are selected by mutual agreement of the student and the instructor. Special approval needed from the adviser. Credit Hours: 1-4

QEM599 - Thesis Credit Hours: 1-6

QEM601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Quality Engineering and Management Faculty

Chappanda, Karumbaiah, Assistant Professor, Ph.D., University of Utah, 2013.

DeRuntz, Bruce, Professor, Ph.D., Southern Illinois University Carbondale, 2005.

Dunston, Julie K., Associate Professor, Ph.D., Florida State University, 1995.

Legier, John Tugaw, Associate Professor, Ph.D., Southern Illinois University, 2007.

Velasco, Tomas, Professor and Interim Director, Ph.D., University of Arkansas, 1991.

Emeriti Faculty

Chang, Feng-Chang (Roger), Associate Professor, Emeritus, Ph.D., Ohio State University, 1985.

Marusarz, Ronald K., Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1999.

Spezia, Carl J., Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 2002.

Radiologic Sciences

The Radiologic Science professional is a member of the health care team who has knowledge of the characteristics and clinical relevance of radiographic imaging, is cognizant of patient care procedures and has the education and expertise necessary to generate diagnostic medical images including sonograms, computer and, MRI images, and x-rays. The mission of the Master of Science in Radiologic Sciences program through Southern Illinois University Carbondale (SIUC) is to provide a quality program integrating education, research, and service in order to meet the needs of the profession and improve health care of the people and communities we serve.

Master of Science (M.S.) in Radiologic Sciences

Objectives and Goals

- Prepare the student to practice as a radiologic sciences educator or manager by offering a balanced curriculum and quality didactic/experiential instruction.

- Provide didactic and experiential opportunities that lead to research in educational, professional, or health care issues relating to radiologic sciences education and/or management.
- Provide avenues to students for development and growth within the profession.
- Provide avenues for students to develop and apply skills in effective communication, analytical and critical thinking, and problem solving necessary for successful allied health practice.
- Provide an experiential and didactic environment which leads to the refinement of skills and competence appropriate for an advanced educator/manager in the radiologic sciences.
- Provide an accessible opportunity for regional radiologic science professionals to acquire a terminal degree.
- Provide an accessible opportunity for regional radiologic sciences professionals to acquire the necessary means to succeed in a global and diverse workforce/workplace.

Admission

The minimum admission guidelines of the M.S. in Radiologic Sciences program mirror those of the Graduate School at SIUC; however, to elaborate on those requirements, the following is provided:

- Candidates will be granted admittance to the SIUC Graduate School.
- Candidates will possess a baccalaureate degree and have completed a program of study in an associated field to Allied Health, Radiology, Sonography, Medical Imaging, Health Care Management, or an equivalent field.
- Candidates will be nationally licensed by the ARRT, the ARDMS, the NMDCB, or an equivalent National or International Licensing Body in diagnostic imaging.
- Candidates will have a minimum cumulative grade point average (GPA) 2.7 (where 4.0 = *A*) on the entire last undergraduate GPA earned at the time of application..
- Student background checks will only be completed if required in the legal agreement to perform the internship.
- The GRE is not required for admission to this program.
- TOEFL score requirements will follow the requirements set forth by the SIUC Graduate School.
- Transfer students will follow the same criteria as all other students.
- Students will complete and submit an application for enrollment in the M.S. in Radiologic Sciences program and submit a $65 application fee to the program.

Requirements

The M.S. in Radiologic Sciences program is a comprehensive program that will prepare students to enter the professional workforce with a graduate degree in radiology, specializing in management and education. The academic objectives of the program include:

1. Successful completion of 30 didactic credit hours (MHA 511, RAD 516, RAD 521, RAD 526, MHA 531, MHA 536, RAD 541, RAD 546, and RAD 556) plus objective 2
2. Successful completion of RAD 593 which consists of six credit hours of a research project.

To facilitate completion of the objectives of the program, the course of instruction will consist of 36 credit hours. As part of these 36 credit hours, students will complete a research/thesis project.

The curriculum will consist of didactic courses. Course material will cover educational theory (including the foundations of education) and/or management theory. Additionally, advanced study of radiologic sciences coursework including radiation physics, radiation biology, anatomy, pharmacology, human disease/pathology, advanced imaging methods, advanced imaging modalities, and patient care will be undertaken for individuals choosing education as their area of specialization. Upon program completion, the student is expected to be fully capable of teaching these topics at an introductory level for basic radiologic science professionals. Special project assignments, conference attendance and presentations, and journal article reviews are an integral part of the curriculum.

All students graduating from the M.S. in Radiologic Sciences program will be required to meet the qualifications of the graduate school at SIUC. Students will be required to complete a culminating scholarly work which may include a research/thesis paper, or graduate project.

Students may complete courses within the Masters of Health Administration (MHA) or the Masters in Health Informatics (MHI) to receive a concurrent degree with the MSRS degree. Please see the MHA and MHI programs for updated concurrent degree requirements.

Sample Schedule of Course Offerings

Fall Semester

- MHA 511: Fundamentals of Health Care Systems (3 CH)
- RAD 516: Cultural Foundations and Theories of Education (3 CH)
- RAD 521: Advance Practice of Radiologic/Imaging Sciences I (3 CH)
- RAD 526: Seminar in Radiologic/Imaging Sciences I (3 CH)

Spring Semester

- MHA 531: Human Resources in Health Care (3 CH)
- MHA 536: Strategic Leadership in Healthcare (3 CH)
- RAD 541: Advance Practice of Radiologic/Imaging Sciences II (3 CH)
- RAD 546: Seminar in Radiologic/Imaging Sciences II (3 CH)

Summer Semester

- MHA 551: Legal & Ethical Fundamentals in Healthcare (3 CH)
- RAD 556: Individual Research in Healthcare (3 CH)
- RAD 601: per semester Continuing Enrollment (1 CH)

Final Portion of Program

- RAD 593: Advanced Research (6 CH)

The delivery method will be through distance education via Desire2Learn or the current classroom management system in use at SIUC.

Radiologic Sciences Courses

RAD510 - Introduction to Medical Dosimetry This course introduces the concepts associated with medical dosimetry. Topics include common mathematical approaches, radiation protection, cross-sectional anatomy, common cancers and treatment techniques, QA, and radiation physics. This course is twenty weeks in length. Restricted to admission to the Medical Dosimetry Program. Credit Hours: 2

RAD515 - Medical Dosimetry Clinical I This is the first course of a three course sequence. During the three course sequence, students will complete eight clinical rotations including Brachytherapy, Simulation, Gamma Knife, Treatment Aids, IMRT, External Beam, Physics, Special Measurements and QA. The length of these rotations varies from one to eleven weeks. During this course students will perform two to four of these rotations depending on the rotation schedule. While in the clinical setting students will observe and work directly with a medical dosimetrist. Emphasis is given on learning and understanding the role and responsibilities of a medical dosimetrist in the clinical setting. This course is twenty weeks in length. Restricted to admission to the Medical Dosimetry Program. Credit Hours: 4

RAD516 - Cultural Foundations and Theories of Education Seminar provides an examination of the historical, social, economic and psychological foundations of allied health education with emphasis given to the nature and role of education and training in preparing for the field of medical education. The objectives of this seminar will allow the student to explore the nature and theories of education, the behavioral aspects of education including the assumptions and practices which underlie education. Special approval needed from the instructor. Credit Hours: 3

RAD520 - The Physics of Medical Dosimetry I This course covers the following topics: Radiologic Physics, production of x-rays, radiation treatment and simulation machines, interactions of ionizing radiation, radiation measurements, dose calculations, computerized treatment planning, dose calculation algorithms, electron beam characteristics, and brachytherapy physics and procedures. This course is twenty weeks in length. Restricted to admission to the Medical Dosimetry Program. Credit Hours: 3

RAD521 - Advance Practice of Radiologic/Imaging Sciences I This course will include a review of the following topics: Radiation physics, radiation biology, anatomy, pharmacology, human diseases/ pathology, advanced imaging methods, advanced imaging modalities, and patient care. Credit Hours: 3

RAD525 - Seminars in Medical Dosimetry I (Same as RAD 526) This course consists of various seminars/literature reviews associated with radiation oncology. Topics include treatment techniques for various cancers, technological advances in cancer treatment, cancer treatment trends, and the role of a medical dosimetrist. This course is twenty weeks in length. Restricted to admission to the Medical Dosimetry Program. Credit Hours: 3

RAD526 - Seminar in Radiologic/Imaging Sciences I (Same as RAD 525) This course consists of various seminar/literature reviews associated with the radiologic/imaging sciences. Topics include imaging techniques, technological advances in the radiologic/imaging sciences, patient care trends, and the role of an imaging professional. This course is twenty weeks in length. Credit Hours: 3

RAD530 - The Essentials of Medical Dosimetry This course expands on the essential concepts associated with radiation physics, dose calculations, radiation measurements, external beam and brachytherapy treatment planning, treatment aids, heterogeneities, electron and proton therapies, and IGRT. This course is twenty weeks in length. Prerequisite: A grade of C or better in RAD 510, RAD 515, RAD 520, and RAD 525. Credit Hours: 2

RAD535 - Medical Dosimetry Clinical II This is the second of a three course sequence. During the three course sequence, students will complete eight clinical rotations including Brachytherapy, Simulation, Gamma Knife, Treatment Aids, IMRT, External Beam, Physics, Special Measurements and QA. The length of these rotations varies from one to eleven weeks. During this course students will perform two to four of these rotations depending on the rotation schedule. While in the clinical setting students will observe and work directly with a medical dosimetrist. Emphasis is given on learning and understanding the role and responsibilities of a medical dosimetrist in the clinical setting. This course is twenty weeks in length. Prerequisite: A grade of C or better in RAD 515. Credit Hours: 4

RAD540 - The Physics of Medical Dosimetry II This course covers the following topics: Imaging for radiation oncology, IMRT, stereotactic radiosurgery, special procedures, particle therapy, hyperthermia, and radiation safety. This course is twenty weeks in length. Credit Hours: 3

RAD541 - Advance Practice of Radiologic/Imaging Sciences II This course will continue to cover the same topics that were reviewed in RAD 521 but to a greater level of understanding. Topics include: Radiation physics, radiation biology, anatomy, pharmacology, human disease/pathology, advanced imaging methods, advanced imaging modalities, and patient care. Credit Hours: 3

RAD545 - Seminar in Medical Dosimetry II (Same as RAD 546) This course consists of various seminars associated with radiation oncology. Topics include treatment techniques for various cancers, technological advances in cancer treatment, cancer treatment trends, and the role of a medical dosimetrist. This course is twenty weeks in length. Credit Hours: 3

RAD546 - Seminar in Radiologic/Imaging Sciences II (Same as RAD 545) This course consists of various seminar/literature reviews associated with the radiologic/imaging sciences. Topics include imaging techniques, technological advances in the radiologic/imaging sciences, patient care trends, and the role of an imaging professional. This course is twenty weeks in length. Credit Hours: 3

RAD550 - Medical Dosimetry Clinical III This is the third course of a three course sequence. During the three course sequence, students will complete eight clinical rotations including Brachytherapy, Simulation, Gamma Knife, Treatment Aids, IMRT, External Beam, Physics, Special Measurements and QA. The length of these rotations varies from one to ten weeks. During this course students will perform one to two of these rotations depending on the rotation schedule. While in the clinical setting students will observe and work directly with a medical dosimetrist. Emphasis is given on learning and understanding the role and responsibilities of a medical dosimetrist in the clinical setting. his course is ten weeks in length. Prerequisite: A grade of "C" or better in RAD 535. Credit Hours: 2

RAD555 - Medical Dosimetry Practice This course brings all medical dosimetry concepts and calculations together for a final program exam. Additional topics include radiation biology, knowledge-based treatment planning, professional development, billing/coding, HIPAA, DICOM, infection control,

and test taking strategies. This course is ten weeks in length. Prerequisites: RAD 530 and RAD 540 with grades of C or better. Credit Hours: 2

RAD556 - Individual Research in Healthcare This course requires students to complete a research project in the field of healthcare based upon student interest and instructor approval. Each project will have a written paper as a final product and this paper will be submitted for publication, as approved by the instructor, in one of the professional journals within the field of healthcare. Restricted to School of Health Sciences graduate majors. Credit Hours: 3

RAD560 - Seminar in Medical Dosimetry III This course consists of various seminars/literature reviews associated with radiation oncology. Topics include treatment techniques for various cancers, technological advances in cancer treatment, cancer treatment trends, and the role of a medical dosimetrist. This course is ten weeks in length. Prerequisite: A grade of C or better in RAD 545. Credit Hours: 2

RAD565 - Independent Study Directed independent study in selected areas of medical dosimetry studies. Special approval needed from the Program Director. Credit Hours: 1-6

RAD593 - Advanced Research Students complete a research project including a special project related to the student's chosen field which meets program guidelines. Restricted to School graduate majors and School advisor. Credit Hours: 6. Credit Hours: 6

RAD601 - Continuing Enrollment This course is required to satisfy the Graduate School's requirement of continuous enrollment and is intended for those students who are enrolled in the program but cannot take a core academic course during a given semester. Prerequisite: Consent of Program Director. Credit Hours: 1

Radiologic Sciences Faculty

Bickel, Lisa A., Assistant Instructor, Radiologic Sciences, M.S.R.S., Southern Illinois University, 2019; 2019. Diagnostic medical sonography.

Collins, Kevin Scott, Professor, Health Care Management, Workforce Education and Development, Ph.D., RT(R)(T), CMD, Southern Illinois University Carbondale, 2011; 1999. Radiation oncology.

Collins, Sandra K., Professor, Health Care Management, Ph.D., Southern Illinois University Carbondale, 2010; 2002. Health care management.

McKinnies, Richard, Professor, Radiologic Sciences, Ph.D., RT(R)(T), CMD, Southern Illinois University Carbondale, 2020; 2006. Radiation oncology.

Mobile, Katherine, Lecturer, Radiologic Sciences, M.S., University of Wisconsin LaCrosse, 2011; 2013. Medical dosimetry.

Social Work

The Master of Social Work program offers preparation for professional social work practice. The organizing principle of the M.S.W. program is the improvement of the quality of individual life through the enhancement of social and economic justice and opportunity. Upon completion of the M.S.W. program, the student will have acquired knowledge, values, and skills consistent with the social work profession and be capable ultimately of engaging in autonomous social work practice. Graduates will be able to effectively deliver the social services needed to meet human needs in both urban and rural areas.

The M.S.W. program is accredited by the Council on Social Work Education.

Master of Social Work (M.S.W.)

Admission Requirements

To be considered for admission to the Regular Two-Year M.S.W. program (either campus-based or online) for entry in the Fall semester, applicants must:

1. Meet all admission requirements set forth by the Graduate School.
2. Have a GPA of at least 3.0 (on a 4.0 scale) on the entire last undergraduate GPA earned at the time of application.
3. Show evidence of a broad liberal arts base with substantial preparation in the social and behavioral sciences and humanities.
4. Demonstrate content in human biology and introductory statistics.
5. International students must have a TOEFL score of 550 (paper); 213 (computer); 80 (internet) or above. The IELTS exam is also acceptable (a minimum score of 6.5).

To be considered for admission to the Advanced Standing MSW Program (either campus-based or online) for entry in the Summer semester, applicants must:

1. Have a BSW degree from an accredited social work program.
2. Meet all requirements listed for the Regular Two-Year Program listed above.

Note: A standardized test score, such as the GRE, is not required for admissions; however, students applying for a graduate assistantship will be required to have an official GRE score on file in Social Work.

Applications may be made online at **gradschool.siu.edu/apply**

Applications will be accepted up to March 1. Admissions Committee meets monthly between the open application period between October and March. Priority will be given to Advanced Standing students who submit their application by February 1 and 2 Year applications by March 1. Early applications have a better chance to receive their first choice in specialization. Applicants who complete their undergraduate degree requirements by December and have all application materials submitted to Social Work by October 1 may be considered for early admission and may take electives prior to entry into the summer or fall cohort. Due to the potential obstacles in obtaining a Visa, international applicants should apply by the earliest deadline of October 1.

Applicants may be required to take additional courses as a condition of admission. Documented potential for the profession of social work is considered a part of the admission criteria, which may also include an interview prior to acceptance.

Each application will be individually reviewed; however, meeting all stated criteria will not automatically guarantee admission to social work.

Applicants must apply online, both to the Graduate School and to Social Work. Official transcripts should be sent directly to the Graduate School. Students accepted in the M.S.W. program must register for the semester they are admitted.

This program requires a non-refundable $65 application fee that must be submitted with the application for admission to graduate study in Social Work.

Student Advisement

Upon admission to the Master of Social Work degree program, the student will be assigned a faculty adviser. The adviser is available for career counseling as well as assisting in other matters which might arise in connection with the student’s work.

Financial Aid

The University offers limited financial assistance through graduate assistantships. Other scholarships, grants-in-aid, etc., may be applied for throughout the Graduate School, Southern Illinois University Carbondale, Carbondale, IL 62901-4716.

Degree Requirements

Students admitted to the regular two-year program (both campus-based and online) are required to complete the first year foundation curriculum and the second year advanced curriculum. They are required to complete a minimum of 60 Credit Hours of graduate course work taken in the approved sequence. The foundation curriculum consists of 30 Credit Hours and includes the following courses:

Fall (14 Credit Hours)

- SOCW 500: Human Behavior in the Social Environment (3 CH)
- SOCW 501: Generalist Practice with Individuals and Families (3 CH)
- SOCW 504: Understanding Oppression, Privilege and Power (2 CH)
- SOCW 541A: Foundation Practicum Seminar I (2 CH)
- SOCW 541B: Foundation Practicum I (2 CH)
- Elective (2 CH)

Spring (16 Credit Hours)

- SOCW 510: Generalist Practice with Groups, Organizations and Communities (3 CH)
- SOCW 511: Social Work Research (3 CH)
- SOCW 521: Social Work Policy Practice (3 CH)
- SOCW 542A: Foundation Seminar II (3 CH)
- SOCW 542B: Foundation Practicum II (2 CH)
- Elective (2 CH)

Reduced Load

Students who are unable to attend full time can choose to attend part time under our Reduced Load Scheduling Agreement. The Reduced Load Foundation schedule includes:

Semester I – Fall (8 Credit Hours)

- SOCW 500: Human Behavior in the Social Environment (3 CH)
- SOCW 501: Generalist Practice with Individuals and Families (3 CH)
- Elective (2 CH)

Semester II – Spring (9 Credit Hours)

- SOCW 510: Generalist Practice with Groups, Organizations and Communities (3 CH)
- SOCW 521: Social Work Policy Practice (3 CH)
- Elective (3 CH)

Semester III – Fall (6 Credit Hours)

- SOCW 504: Understanding Oppression, Privilege and Power (2 CH)
- SOCW 541A: Foundation Practicum Seminar I (2 CH)
- SOCW 541B: Foundation Practicum I (2 CH)

Semester IV – Spring (8 Credit Hours)

- SOCW 511: Social Work Research (3 CH)
- SOCW 542A: Foundation Seminar II (3 CH)
- SOCW 542B: Foundation Practicum II (2 CH)

SUMMER ADVANCED STANDING (9 Credit Hours)

Students admitted to the advanced-standing program (both campus-based and online) are required to complete nine Credit Hours of transition courses, with a grade of *B* or better in each course, and a

minimum of 30 Credit Hours in the second-year graduate course curriculum in the approved sequence. The transition courses include the following:

- SOCW 502: Advanced Standing Social Work Theory and Practice (3 CH)
- SOCW 512: Advanced Standing Social Work Research (3 CH)
- SOCW 522: Advanced Standing Social Work Policy Practice (3 CH)

ADVANCED YEAR CURRICULUM - ADVANCED STANDING AND 2 YEAR PROGRAM (30 Credit Hours)

The second-year curriculum is organized around the following areas of emphasis: health/mental health; and children, youth and families. The program also offers course work in preparation for a Professional Educator License in School Social Work by the Illinois State Board of Education. Applicants must indicate their preference of area of emphasis. Although we attempt to accommodate each applicant's first preference, we do not guarantee students will receive their first choice. The second-year curriculum includes the following courses in each area of emphasis:

Health/Mental Health

Fall (15 Credit Hours)

- SOCW 531: Psychosocial Disorders (3 CH)
- SOCW 532: Program Evaluation for Social Work (3 CH)
- SOCW 543A: Advanced Practicum Seminar I (3 CH)
- SOCW 543B: Advanced Practicum I (3 CH)
- SOCW 551: Advanced Social Work Practice I: H/MH (3 CH)

Spring (15 Credit Hours)

- SOCW 544A: Advanced Practicum Seminar II (3 CH)
- SOCW 544B: Advanced Practicum II (3 CH)
- SOCW 552: Advanced Social Work Practice II: H/MH (3 CH)
- SOCW 555: Advanced Policy Analysis & Practice: H/MH (3 CH)
- Elective (3 CH)

Reduced Load Health/Mental Health Scheduling

Semester I – Fall (6 Credit Hours)

- SOCW 531: Psychosocial Disorders (3 CH)
- SOCW 532: Program Evaluation for Social Work (3 CH)

Semester II – Spring (6 Credit Hours)

- SOCW 555: Advanced Policy Analysis & Practice: H/MH (3 CH)
- Elective (3 CH)

Semester III – Fall (9 Credit Hours)

- SOCW 543A: Advanced Practicum Seminar I (3 CH)
- SOCW 543B: Advanced Practicum I (3 CH)
- SOCW 551: Advanced Social Work Practice I: H/MH (3 CH)

Semester IV – Spring (9 Credit Hours)

- SOCW 544A: Advanced Practicum Seminar II (3 CH)
- SOCW 544B: Advanced Practicum II (3 CH)
- SOCW 552: Advanced Social Work Practice II: H/MH (3 CH)

Children, Youth and Families

Fall (15 Credit Hours)

- SOCW 531: Psychosocial Disorders (3 CH)
- SOCW 532: Program Evaluation for Social Work (3 CH)
- SOCW 543A: Advanced Practicum Seminar I (3 CH)
- SOCW 543B: Advanced Practicum I (3 CH)
- SOCW 561: Advanced Social Work Practice I: CY&F (3 CH)

Spring (15 Credit Hours)

- SOCW 544A: Advanced Practicum Seminar II (3 CH)
- SOCW 544B: Advanced Practicum II (3 CH)
- SOCW 562: Advanced Social Work Practice II: CY&F (3 CH)
- SOCW 565: Advanced Policy Analysis and Practice: CY&F (3 CH)
- Elective (3 CH)

Reduced Load Children, Youth & Families Scheduling

Semester I – Fall (6 Credit Hours)

- SOCW 531: Psychosocial Disorders (3 CH)
- SOCW 532: Program Evaluation for Social Work (3 CH)

Semester II – Spring (6 Credit Hours)

- SOCW 565: Advanced Policy Analysis and Practice: CY&F (3 CH)
- Elective (3 CH)

Semester III – Fall (9 Credit Hours)

- SOCW 543A: Advanced Practicum Seminar I (3 CH)
- SOCW 543B: Advanced Practicum I (3 CH)
- SOCW 561: Advanced Social Work Practice I: CY&F (3 CH)

Semester IV – Spring (9 Credit Hours)

- SOCW 544A: Advanced Practicum Seminar II (3 CH)
- SOCW 544B: Advanced Practicum II (3 CH)
- SOCW 562: Advanced Social Work Practice II: CY&F (3 CH)

Licensure in School Social Work

Endorsement in the State of Illinois in Professional Educator License (PEL) in School Social Work. Please refer to the Teacher Education Program (TEP) for the most current information on licensure requirements for School Social Work.

Those students who wish to qualify for the PEL Endorsement in School Social Work need to:

- Complete the core courses as listed above under their chosen specialization
- Take the following courses (which may satisfy one or more of the elective requirements):
  - SOCW 533 – Social Work Practice in the Schools (2 CH) - Offered in Fall
  - SOCW 567 – Advanced School Social Work Issues (2 CH) - Offered in Spring
  - SPED 300 as an undergraduate or SPED 420 as a graduate to satisfy the prerequisite for School Social Work Field Practicum. This must be completed before the Fall semester Field placements (SOCW 543B & SOCW 544B)
- EDUC 319 and EAHE 501 (3 CH) or EAHE 503 (3 CH) suggested electives for School Social Work
- The Field Practicum placement – SOCW 543B (3 CH) and SOCW 544B (3 CH) will be in a school setting for two consecutive semesters (607 clock hours).

- Pass the School Social Work Licensure Content Test prior to completion of coursework.

Post-Graduate Licensure in School Social Work

Students with an MSW from a CSWE accredited program who wish to qualify for endorsement in School Social Work need to:

- have completed an MSW from an accredited institution
- complete the Field prerequisite of SPED 300 or SPED 420
- complete SOCW 533 – Social Work Practice in the Schools (2 CH)
- complete SOCW 567 – Advanced School Social Work Issues (2 CH)
- Complete the Field Practicum placement – SOCW 543B (3 CH) and/or SOCW 544B (3 CH) in a public school setting (a total of 607 field hours required)
- Pass the School Social Work Licensure Content Test prior to completion of coursework.

In each year of study, in addition to classroom work, students are required to complete field practicum. Applied learning through field practice is an integral component of social work education. Field instruction provides the student with the opportunity for applying social work theory and conceptual learning to realistic and practical situations. Students may not substitute current or past, paid or volunteer, social work experience for the field practicum requirements of the M.S.W. program. While the school takes into account the student's career goals in the selection of the field practicum assignment, we do not guarantee that students will receive their first preference of field assignment.

Additional Requirements

M.S.W. students must maintain an overall GPA of 3.0 (on a 4.0 scale).

Within limits imposed by the policies of the Graduate School of the University, transfer credit hours will be permitted for up to 30 credit hours for applicants who wish to transfer from another accredited graduate program in social work. If transfer work was used in completion of another degree, it cannot be used to also satisfy work for the M.S.W. degree.

M.S.W./J.D. Concurrent Degrees

A concurrent degree in Social Work and Law is designed to educate practitioners in law and social work to effectively utilize the problem-solving strategies and techniques of both professions. Students prepared in this program will develop an understanding of the ethics, language, research, history, and processes of both professions. Individuals so trained will be uniquely prepared for careers which combine both legal and human service needs such as administration, supervision of the provision of services, legal aspects of services, public policy leadership roles, family practice and community planning and development. Accepted students could complete a concurrent program in as few as three years with full-time summer attendance. Students must meet the requirements of admission and be admitted separately to Social Work and the School of Law. Students currently enrolled in social work or law programs must have a minimum GPA before they may enroll in the concurrent program. The minimum GPA for Social Work is 3.0 and for Law is 2.5. Social Work students interested in this program should consult with the Social Work Graduate Program Director.

Certificate in Gerontology

Social Work participates in the Certificate in Gerontology interdisciplinary program and offers a class, SOCW 575, Policy and Program Issues of Aging, which is a Certificate requirement. For more information on the Certificate program, please see the Graduate Certificates tab on the Graduate Catalog homepage.

Social Work Courses

SOCW480 - Illinois Child Welfare I: Foundation This is the first course of two in the University Partnership Program in collaboration with the Illinois Department of Children and Family Services (DCFS) and SIUC. This course includes content developed by the IL DCFS that focuses on the fundamental

knowledge required for child welfare licensure in Illinois. Students wishing to qualify for employment within DCFS or Private Child Welfare Agencies upon graduation must also complete SOCW 482 and pass DCFS Licensure exams offered during the course. Course can also serve as a stand alone elective. Open to Undergraduate and Graduate students. Credit Hours: 3

SOCW482 - Illinois Child Welfare 2: Core Competencies This is the second course of two in the University Partnership Program in collaboration with the Illinois Department of Child and Family Services (DCFS) and SIUC. This course includes core competency developed by the IL DCFS that focuses on the current child welfare policy, practice, and research issues intended to prepare students for employment in Illinois public and private child welfare agencies. Students wishing to qualify for employment within DCFS upon graduation must also complete SOCW 480 and pass DCFS Licensure exams offered during the course. Prerequisite: SOCW 480. Open to Undergraduate and Graduate students. Credit Hours: 3

SOCW496 - Independent Research in Social Work Provides opportunity for students to conduct independent research with the guidance of a faculty member. Topics of research are identified by the student and faculty member. Special approval needed from the instructor. Credit Hours: 1-3

SOCW500 - Human Behavior in the Social Environment Students acquire foundational knowledge of human development in the social environment over the life span. The course explores the influence of social work values and ethics, diversity and intersectionality, on social work practice engagement and the assessment of human behavior. Credit Hours: 3

SOCW501 - Generalist Practice with Individuals and Families This course prepares students for generalist social work practice with individuals and families. The values and ethics of the profession are presented with particular attention to anti-oppressive, culturally responsive practice. Restricted to admission to the MSW program. Credit Hours: 3

SOCW502 - Advanced Standing Social Work Theory and Practice This course provides a common foundation for social work practice by reviewing theories of human behavior and generalist practice skills alongside the reinforcement of professional social work values and ethics and the integration of ADEI principles. Grade of B or better required. Restricted to admission to the MSW program with eligibility for advanced standing. Credit Hours: 3

SOCW504 - Understanding Oppression, Privilege and Power This course explores the history of racial injustice and the mechanisms of discrimination and oppression. This includes the examination of how social, political, economic, ethnic, racial, and other cultural exclusions establish power, privilege, and systemic oppression. Attention is focused on the practice of cultural humility at all levels of social work practice with the understanding that diversity and intersectionality shape the human experience. Credit Hours: 2

SOCW510 - Generalist Practice with Groups, Organizations and Communities This course is designed to prepare students for generalist social work practice with groups, organizations, and communities. The values and ethics of the profession are presented with particular attention to anti-oppressive, culturally responsive practice. Restricted to admission to the MSW program. Credit Hours: 3

SOCW511 - Social Work Research This course emphasizes the importance of scientific inquiry within social work practice and covers the application of basic concepts of research methodology to social work including problem formulation, research design, sampling, measurement, and data analysis. Includes single-system methodology as it applies to social work practice in rural areas. Prepares students to conduct an individualized single-system project based on practice intervention with clients or systems in their practicum setting in the final semester of their studies. Prerequisite: an introduction to statistics course or concurrent enrollment allowed. Restricted to admission to the MSW Program. Credit Hours: 3

SOCW512 - Advanced Standing Social Work Research Selective examination of inductive and deductive methods in social work knowledge building. Includes research methodologies and group designs as applied to social work practice. Prepares students to conduct an individualized single-system project based on practice intervention with clients or systems in their practicum setting. Grade of B or better required. Restricted to admission to the MSW program with eligibility for advanced standing. Credit Hours: 3

SOCW521 - Social Work Policy Practice Examines the historical development of social welfare policy and professional social work in Europe and the United States. The course introduces a systematic framework for policy analysis with particular attention to policies affecting marginalized groups through principles of anti-racism, diversity, equity, and inclusion to promote human rights. Restricted to admission to the program; restricted to social work graduate students. Credit Hours: 3

SOCW522 - Advanced Standing Social Work Policy Practice This course provides a foundation for social work policy practice by reviewing the historical development of social welfare and professional social work in United States and globally. It uses a systematic framework for policy analysis with particular attention to policies affecting marginalized groups through principles of anti-racism, diversity, equity, and inclusion to promote human rights. Grade of B or better required. Restricted to admission to the MSW program with eligibility for advanced standing. Credit Hours: 3

SOCW531 - Psychosocial Disorders This course provides a basic knowledge of psychopathology and how it impacts individual functioning and social dynamics. Students become familiar with the theoretical basis and the basic structure of the Diagnostic and Statistical Manual for Mental Disorders Current Edition. Includes examining theories of human behavior and person-in-environment, as well as other culturally responsive and interprofessional conceptual frameworks, used for diagnosis and treatment in behavioral health practice. Prerequisite: Completion of advanced standing transition or foundation courses (SOCW 502, 512, 522 or SOCW 500, 501, 504, 510, 511, 521, 541A&B, 542A&B) or consent from the Social Work Graduate Program Director. Credit Hours: 3

SOCW532 - Program Evaluation for Social Work This course focuses on the application of research methods especially in evaluating programs or program components in the area of concentration and to the practicum experience. Includes content on self-evaluation in practice. Prerequisite: Grade of B or better in SOCW 511 or SOCW 512 and an introduction to statistics course. Restricted to admission to the MSW Program. Credit Hours: 3

SOCW533 - Social Work Practice in the Schools In-depth examination of the history and practice of social work in primary and secondary schools. Roles of school social workers and practice approaches are emphasized. Prerequisite: SPED 300 or SPED 420 and completion of transition courses (SOCW 502, 512, & 522) or foundation courses (SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B). Restricted to admission to the MSW Program and School Social Work Endorsement Program. Credit Hours: 2

SOCW535 - Legal Aspects of Social Work Practice Examination of law and legal procedures that relate directly to social work practice in general. Legal perspectives of a specific concentration field of practice are discussed in depth. Credit Hours: 3

SOCW541A - Foundation Practicum Seminar I Seminar which is taken concurrently with Foundation Practicum I (SOCW 541B). The seminar emphasizes the relationship between the practicum experience, social work practice, policy, human behavior and the social environment (HBSE) and research curricula. Prerequisite: Concurrent enrollment with SOCW 541B. Restricted to admission to the MSW Program. Credit Hours: 2

SOCW541B - Foundation Practicum I Field practicum which is taken concurrently with Foundation Practicum Seminar I (SOCW 541A) and is a structured and supervised on-site field practice in a selected agency. Practicum is equivalent to 12 hours per week for 15 weeks (a total of 360 hours) over two semesters. Graded S/U. Prerequisite: Concurrent enrollment with SOCW 541A. Restricted to admission to the MSW Program. Credit Hours: 2

SOCW542A - Foundation Seminar II Seminar which is taken concurrently with Foundation Practicum II and serves as a continuation of SOCW 541A. The seminar emphasizes the relationship between the practicum experience, social work practice, policy, human behavior and the social environment (HBSE) and research curricula. Prerequisite: SOCW 541 A&B. Restricted to Master of Social Work students only. Credit Hours: 3

SOCW542B - Foundation Practicum II Field practicum which is taken concurrently with Foundation Practicum Seminar II (SOCW 542A) and serves as a continuation of SOCW 541B, which is the second structured and supervised on-site field practice in a selected agency. Graded S/U. Prerequisite: SOCW

541A&B; Concurrent enrollment with SOCW 542A. Restricted to admission to the MSW Program. Credit Hours: 2

SOCW543A - Advanced Practicum Seminar I Concentration specific practicum seminar with concurrent field practicum (SOCW 543B). Practicum seminar focuses on the application of advanced generalist theory, knowledge and skills covered in the curriculum within the specific concentration area (Children, Youth and Families/School Social Work; Health/Mental Health). Prerequisite: Completion of transition courses (SOCW 502, 512, & 522) or foundation courses (SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B). Concurrent enrollment with SOCW 543B. Restricted to admission to the MSW Program. Credit Hours: 3

SOCW543B - Advanced Practicum I On-site concentration specific field practice in an approved agency with appropriate supervision equivalent to 20 hours per week for 15 weeks (a total of 607 hours is required to be completed in two semesters) with a concurrent seminar. The practicum focuses on the application of advanced concentration theory, knowledge and skills covered in the curriculum. Graded S/U. Concurrent enrollment with SOCW 543A. Prerequisite: Completion of the transition courses (SOCW 502, 512, & 522) or foundation courses (SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B). Restricted to admission to the MSW Program. Credit Hours: 3

SOCW544A - Advanced Practicum Seminar II A continuation of the concentration specific practicum seminar concurrent field practicum SOCW 544B. Continuation of SOCW 543A. Prerequisite: Completion of SOCW 543A&B. Concurrent enrollment with SOCW 544B. Restricted to admission to the MSW Program. Credit Hours: 3

SOCW544B - Advanced Practicum II A continuation of the concentration specific practicum of 20 hours per week in the field for 15 weeks with a concurrent seminar, SOCW 544A. Graded S/U. Continuation of SOCW 543B. Prerequisite: SOCW 543A&B; Concurrent enrollment with SOCW 544A. Restricted to admission to the MSW Program. Credit Hours: 3

SOCW546A - Selected Topics: Advanced Social Work Counseling with Individuals Knowledge and skills particularly useful for practice in social services with application to case materials. Theories, models and techniques of modern human service counseling, especially suitable to multiple-service agencies in rural settings. Credit Hours: 3

SOCW546B - Selected Topics: Advanced Social Work Practice with Groups Knowledge and skills particularly useful for management and supervision in social services with application to case materials. It essential for social workers to acquire skills in working with groups in diverse settings. The required skills range from elementary to more complex, depending on the demand of the agency and client(s) tasks. Social work practice with groups is utilized in a variety of social service settings like family services, foster care and adoption, corrections, halfway houses, substance abuse treatment centers, physical rehabilitation, private psychotherapy clinics, nursing homes, mental hospitals, public schools, community centers and many others. Credit Hours: 3

SOCW546C - Selected Topics: Advanced Social Work Intervention with Traumatic Stress Events This course will cover all aspects of traumatic stress and disaster relief work. Topics covered include introduction to disaster relief work, shelter operations, family services, first aid and CPR certification, disaster health & mental health services including the theoretical bases for these services, critical incident, stress management, community recovery and rebuilding, and policy development for disaster preparedness and community rebuilding. Credit Hours: 3

SOCW546D - Selected Topics: Advanced Medical Social Work This course is designed to provide an introduction to the opportunities and challenges associated with medical social work. Lectures, on-site visits, guest lecturers, directed literature reviews, and classroom discussion are used to focus on the integration of generalist social work practice, research, and ethics with various areas of medical care. Credit Hours: 3

SOCW546E - Selected Topics: Advanced Substance Abuse and Mental Health This is an elective course that provides a comprehensive introduction to social work with persons involved in substance abuse. Topics to be covered include: Explanation of the use and abuse of Central Nervous System Depressants, narcotics, stimulants, hallucinogens, marijuana, over-the-counter, and prescription drugs; biological, psychological, and sociological theories of addiction; DSM 5 diagnostic criteria of substance

abuse/dependence, social consequences of substance abuse; treatment strategies for harm reduction; community resources available and attention to the special needs diverse populations. The class may issue selective invitations to the practitioner community to enrich seminar discussion. Credit Hours: 3

SOCW546F - Selected Topics: Advanced Family Therapy Knowledge and skills particularly useful for management and supervision in social services with application to case materials. This course provides an in-depth exposure to the principles and practice of family therapy from a social work perspective which emphasizes self-determination and family strengths. The class will focus on the foundations of family therapy and the application of these concepts with an emphasis on special populations and family challenges. Credit Hours: 3

SOCW546G - Selected Topics: Advanced Administration and Grant Writing This class provides necessary knowledge to understand the grant writing process starting with the grant seeking stage through the post-proposal stage. Students will develop the essential skills to identify write/prepare and submit grants for non-profit organizations. The role of grant writing in overall fundraising and its importance for social agencies and organizations are discussed. Credit Hours: 3

SOCW546H - Selected Topics: Advanced Child Welfare Child welfare interacts with entire families as well as focusing on direct intervention with children to ensure all children live in safe, permanent, and stable environments that supports their well-being. This course provides learning opportunities and baseline knowledge on substance use and mental health problems among families involved in the child welfare system, facilitates cross-systems work, and incorporates cultural awareness and competency in child welfare practice. Credit Hours: 3

SOCW546I - Selected Topics: Advanced Spirituality This course provides a framework of knowledge, values, skills and experiences for spiritually sensitive social work practice. It prepares students to respond competently and ethically to diverse spiritual and religious perspectives by using a comparative, critically reflective approach to content. Credit Hours: 3

SOCW546J - Selected Topics: Advanced Adoption Policy and Practice This course provides knowledge of policy and practice for students preparing for employment in child welfare and mental health. Students will learn about major themes concerning adoption and related issues. This expertise can assist prospective and existing adoptive families with important issues that arise during and after the adoption process. The course also addresses guardianships and other custodial arrangements, including foster care. Credit Hours: 3

SOCW546K - Selected Topics: Advanced Military Social Work This online distance education course provides a broad overview of the systemic analysis of the military culture and bureaucracy and introduces clinical practice strategies of social work intervention with military personnel and their families to improve the mental health and health of this population. This class at graduate level will be beneficial to students seeking greater understanding on working with this population, while at undergraduate level this class will orient students with military culture, the challenges this population and their families face while reintegrating to civilian life. The course also provides an overview of the resources that are available to help this population. Credit Hours: 3

SOCW546L - Selected Topics: Advanced Other (May be repeated with different sections) Credit Hours: 3

SOCW551 - Advanced Social Work Practice I: Health and Mental Health This is the first of a two-part sequence that emphasizes health and mental health delivery within systems theory and an advanced practice skills framework. Includes case studies and exercise aimed at practice with diverse populations in rural areas. Prerequisite: completion of transition courses (SOCW 502, 512, & 522) or foundation courses (SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B). Restricted to admission to the MSW Program. Credit Hours: 3

SOCW552 - Advanced Social Work Practice II: Health and Mental Health The second part of the sequence on advanced skills in health and mental health. Continuation of SOCW 551. Application of treatment modalities. Prerequisite: Completion of SOCW 543A&B and SOCW 551. Restricted to admission to the MSW Program. Credit Hours: 3

SOCW555 - Advanced Policy Analysis and Practice: Health and Mental Health This course applies a systematic analytical framework for a critical and in-depth analysis of federal, state and local policies that shape programs affecting health and mental health in rural settings. Examines how policy impacts practice with diverse populations. Prerequisite: Completion of transition courses (SOCW 502, 512, & 522) or foundation courses (SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B). Restricted to Admission to the MSW Program. Credit Hours: 3

SOCW559 - Aging and Mental Health (Same as GRON 559) Examination of the nature and etiology of mental health problems facing older Americans. Review of research reports to build a theoretical basis for mental disorders. Credit Hours: 3

SOCW561 - Advanced Social Work Practice I: Children, Youth, and Families This is the first part of a two-part sequence that emphasizes family-centered practice (family preservation, integrated services) within systems theory and an advanced practice skills framework. Includes case studies and exercises aimed at practice with diverse populations in rural areas. Prerequisite: completion of transition courses (SOCW 502, 512, & 522) or foundation courses (SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B). Restricted to admission to the MSW Program. Credit Hours: 3

SOCW562 - Advanced Social Work Practice II: Children, Youth, and Families The second part of the practice sequence on advanced skills. Continuation of SOCW 561. Application of treatment modalities. Prerequisite: SOCW 543A&B & SOCW 561. Restricted to admission to the MSW Program. Credit Hours: 3

SOCW565 - Advanced Policy Analysis and Practice: Children, Youth and Families This course applies a systematic analytical framework for a critical and in-depth analysis of federal, state and local policies that shape programs affecting children, youth and families in rural settings. Examines how policy impacts practice with diverse populations. Prerequisite: completion of foundation courses (SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B) or transition courses (SOCW 502, 512, & 522) . Restricted to admission to the MSW Program. Credit Hours: 3

SOCW567 - Advanced School Social Work Issues Exploration of policies, programs, practice and legislative trends affecting public service in school social work. Prerequisite: SOCW 533. Restricted to admission to the MSW Program and the School Social Work Endorsement Program. Credit Hours: 2

SOCW570 - Gerontology and Social Work Examines the major psycho-social and ecological theories of human aging within the framework of social work practice. Extrapolations of those theories and application of them to social work practice and research are emphasized. Credit Hours: 3

SOCW575 - Policy and Program Issues of Aging (Same as GRON 575) Examination of public policies that impact on the quality of life of the elderly. Major programs are identified and analyzed. Future policy issues are discussed. Credit Hours: 3

SOCW576 - Selected Topics in Aging Practice Issues Examination of selected knowledge and skills useful for gerontological social work practice. In-depth study on specific topics will be conducted. Prerequisite: SOCW 570. Credit Hours: 1-6

SOCW577 - Selected Topics in Research Individualized advanced research projects related to student interest. Graded S/U. Prerequisite: completion of foundation or transition courses (SOCW 502, 512, & 522 or SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B). Credit Hours: 1-4

SOCW578A - International Social Work - Germany Critical examination of the nature and scope of social welfare programs in other nations including: personal social services, income maintenance, health care and social development programs. Credit Hours: 1-6

SOCW578B - International Social Work - Generalist Policy and Practice - Classroom Based Provides an international perspective for the study of social work groups, organizations and communities. Focuses on the examination of assessment and problem-solving interventions and cross-cultural comparisons of policy and practice. Credit Hours: 1-6

SOCW578C - International Social Work - Generalist Policy and Practice - Other Social Work Topic Provides an international perspective for the study of social work groups, organizations, and

communities. Focuses on the examination of assessment and problem-solving interventions and cross-cultural comparisons of policy and practice. Credit Hours: 1-6

SOCW598 - Social Work Research Paper Preparation of a final research paper as partial requirement for the M.S.W. degree. Graded S/U only. Prerequisite:completion of foundation or transition courses (SOCW 502, 512, & 522 or SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B). Credit Hours: 1-4

SOCW599 - Thesis in Social Work A partial and optional requirement for the M.S.W. degree. A written report of the student's research project in the chosen area of concentration. Graded S/U only. Prerequisite: completion of foundation or transition courses (SOCW 502, 512, & 522 or SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B). Credit Hours: 3

SOCW601 - Continuing Enrollment For those graduate students who have not finished their degree programs or who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Social Work Faculty

Basler, Sarah K., Associate Lecturer and Undergraduate Program Director, Social Work, M.S.W., Southern Illinois University Carbondale, 2015; 2020.

Brinker, Paul W., Associate Lecturer and Graduate Field Coordinator, Social Work, M.S.W., Southern Illinois University Carbondale, 1996; 2009.

Dobie Buila, Sarah, Professor and Graduate Program Director, Social Work, Ph.D., University of Illinois at Urbana-Champaign, 2005; 1998. Generalist practice, substance abuse, psychosocial disorders, health/mental health practice, social support and the management of chronic mental illness, cultural competency, food security, and social justice.

Harlow, Sherrie, Assistant Lecturer, Social Work, M.S.W., Southern Illinois University, 2004; 2020.

Harper, Joseph J., Assistant Lecturer, Social Work, M.S.W., LCSW, DCSW, ACSE, MBA, CADC, Washington University in St. Louis, 1993; 2021.

Hopes, Diedra, Assistant Lecturer, Social Work, M.S.W., LCSW, University of Oklahoma; 2015; 2019.

Jurkowski, Elaine T., Professor and Graduate Program Director, Social Work, Ph.D., University of Illinois at Chicago, 1997; 1998. Social work theory, program evaluation and community social services and systems changes, research methods, health, public health, population health, gerontology, behavioral health, disability policy and media as an intervention.

Kawewe, Saliwe, Professor Emeritus, Social work, Ph.D., St. Louis University, 1985; 1996. Advanced generalist practice, child welfare, policy, research, international social welfare policy, social development strategies in Third World communities, HIV/AIDS prevention and treatment, women and children, cultural diversity, and indigenous populations.

Koen, Nina, Assistant Lecturer and Undergraduate Field Coordinator, Doctor of Social Work, DSW, Barry University, 2024. Trauma-informed care, practice, field, human behavior, criminal justice.

Soliman, Hussein, Professor, Social Work, Ph.D., University of Tennessee, 1993; 2004. Research methodology, generalist practice, practice evaluation, school social work, social policy, disasters and traumatic stress, international social work.

Sun, Kang, Assistant Professor, Social Work, Ph.D., University of Illinois Urbana-Champaign, 2023; 2024.

Wilson, Shanika L., Assistant Professor of Practice, LCAS, LCSW. MSW, University of Wisconsin-Madison, concentration in mental health and substance abuse; DSW, University of Tennessee-Knoxville, concentration in clinical practice and leadership.

Sociology

The School of Anthropology, Political Science, and Sociology offers graduate work leading to M.A. and Ph.D. degrees in Sociology. The Master of Arts in Sociology gives students an opportunity to acquire a general knowledge of sociology through lecture courses, seminars, and exposure to a variety of theoretical and methodological approaches. The Doctor of Philosophy in Sociology centers around advanced offerings in the areas of theory, methods, social movements, gender, sexualities, religion, communities, and inequalities. A special concentration in criminology, deviance, and criminal justice allows interested students to pursue a part of the doctoral studies in Criminology and Criminal Justice. Students may pursue a Women, Gender and Sexuality Studies graduate certificate at the same time as well.

The faculty of the program is research-oriented and encourages a similar orientation on the part of its students. The program maintains a small library and state-of-the-art computer facilities for qualitative and quantitative analyses.

This program requires a nonrefundable $65 application fee that must be submitted with the application for Admissions to Graduate Study in Sociology. This must be paid by credit card at the time you submit the online application.

Admission to Graduate Study in Sociology

Undergraduates who majored in Sociology or a closely-related field (some Sociology required, evaluated on a case-by-case basis) with a GPA of 3.0 or better (A=4.00) on the entire last undergraduate GPA earned may apply for the two-year M.A. in Sociology program.

Students with M.A. degrees in Sociology or closely-related fields (evaluated on a case-by-case basis) with a graduate GPA of 3.25 may apply to the Ph.D. in Sociology program. To apply to either program, the student must submit personal and research statements, three reference letters, a writing sample, a CV, and official transcripts of all undergraduate and graduate academic grades to the school for review by the graduate admissions committee. Scores from the Graduate Record Examination (GRE) are recommended for consideration for admission. A virtual interview may be conducted as part of the admissions process.

Complete applications must be received by January 1 to be considered for a Master's fellowship, a Doctoral fellowship, a Graduate Dean's fellowship, or a PROMPT assistantship, by February 15 to be considered for a graduate assistantship, and by March 1 for final consideration. Admitted students begin the subsequent fall semester. Admission for the spring semester will be given only in exceptional circumstances and only for spring terms in even numbered years. International students must achieve 550 or better on the paper-based TOEFL, 213 on the computer-based TOEFL, 80 on the internet-based TOEFL, and 6.5 on the IELTS; these are minimum scores; international students may be asked to engage in a telephone or zoom conversation to ensure English proficiency.

Persons seeking more information should email the current Director of Graduate Studies as listed on our website. Students can access our program website (sociology.siu.edu). Here you can find more information about the program, faculty, students, and the link for applications. For more information about graduate fellowships and about financial assistance programs, see the Graduate School Website (gradschool.siu.edu/cost-aid).

Admission from SIU Carbondale M.A. to Ph.D. Program

M.A. in Sociology students who wish to continue work towards a doctoral degree must submit a formal application including the program application form, a statement of purpose, two letters of recommendation, evidence of progress toward the M.A. (e.g., draft chapters), a polished writing sample, and transcripts (these can be pulled from student's file). Applications will be reviewed using the policies, procedures, and guidelines applicable to external Ph.D. in Sociology applicants and will involve an assessment of performance in the M.A. in Sociology program. Applications must be received by January 1 to receive full consideration for fellowships.

Graduate Assistantships and Fellowships

A limited number of assistantships for qualified students are available through the program and school on a competitive basis. Eligible applicants may be nominated for various fellowships awarded by the Graduate School in University-wide competition that have deadlines in January and February. Once funded, a student's continued funding is contingent on the student's satisfactory performance in the program, annual evaluations by faculty (on students' performance in classes & readings, work assignments, timely progress in the program, and professional service and activities), passing comprehensive exams in a timely manner, and on the availability of funds.

Graduate Student Evaluation Criteria

Acceptance into either degree program, continuation/retention in either degree program, and funding in the graduate program are at the discretion of the program. Students need to maintain a GPA of at least 3.0. If a GPA goes below 3.0, the student is placed on academic probation by the Graduate School. Any graduate student on academic probation whose grade point average remains below 3.0 for two consecutive semesters in which she or he is enrolled, excluding summer sessions, will be permanently suspended from the Graduate School, and thus from our program. In other words, the student has one semester to bring the GPA back up to an average of 3.0. Decisions about admission, retention, and funding will be based on five criteria:

1. Timely progress in the program

Students are expected to make normal progress toward the degree, and failure to progress according to the Graduate Catalog for Sociology will diminish priority for funding (dependent on availability), admission, and continuation. M.A. in Sociology students are expected to complete all coursework and the master's paper within two years. Residency in the Ph.D. in Sociology program requires 24 credit hours of coursework (only 6 credit hours of SOC 600 count toward this 24) and must occur prior to advancing to candidacy. The doctoral examination is taken in January of the second year; students with an SIUC M.A. in Sociology take the doctoral examination in January of their first year. The substantive comprehensive review paper must be completed within one year of the doctoral comprehensive examination, but it is highly recommended that it be completed within a few months. Students advance to candidacy after achieving residency, successfully completing all required courses, completing both examinations, and defending the dissertation prospectus. Students need 24 credit hours in SOC 600 to complete the Ph.D. in Sociology (only six of which may occur prior to candidacy). Failure to make timely progress in the program will decrease the likelihood of program or school funding and may impact continuation in the program. Retention and funding in the Ph.D. in Sociology program are also contingent on faculty evaluations that occur annually (see the next section on grades and the Annual Review section for details and situations that likely lead to lowered priority for funding and/or dismissal from the program). For an SIUC M.A. in Sociology student, the Ph.D. in Sociology program should be about four years and for those with an external M.A. in Sociology about five years.

2. Grades

Sociology students need to maintain a GPA of 3.0. Students must earn an *A* or *B* for course credit. Courses cannot be re-taken due to the two-year rotation of scheduling courses. A grade of *C* or lower in a required/research tool course is grounds for immediate dismissal from the program. However, in the case of a *C* grade in a required/research tool course, exceptions and possible remedies will be considered by the Graduate Studies Committee on a case-by-case basis. If a student earns a grade of *C* in a non-research tool course (i.e., an elective), the course will not count toward the required credit hours and must be replaced with a grade of *A* or *B* in an additional course and the student must meet the terms of academic probation set by the Graduate School. A grade of *D* or *F* in any course is grounds for immediate dismissal. Failure to make timely progress lowers a student's priority for funding or may result in dismissal from the program.

- Incompletes in coursework will diminish priority for funding.
- Students with incompletes in theory (SOC 501) and methods/stats (SOC 526A & SOC 526B, SOC 512, SOC 514) will be ineligible to take the comprehensive examinations.

- Students with incompletes will have lower priority for acceptance into the Ph.D. in Sociology program.
- Plagiarism is grounds for de-funding and dismissal from the program.

3. Exams

Successful completion of the doctoral and substantive exams increases priority for funding while failing decreases priority. Failing the doctoral comprehensive exam may preclude funding; failing the substantive review paper is grounds for immediate dismissal (see exam section for information on grading and revisions).

4. Prospectus and research

Priority for funding and retention will decrease if a student has not made progress towards a prospectus committee by the end of the second year of Ph.D. in Sociology, for those with an SIUC M.A. in Sociology and third year of Ph.D. in Sociology for others. The dissertation prospectus should be defended by the middle of the relevant subsequent year. Students may lose funding and may be dropped from the program if they do not defend a proposal by the end of their third year for students with an SIUC M.A., and fourth year in the Ph.D. program for students with an external M.A.; exceptions will be considered by the Graduate Studies Committee on a case-by-case basis. Additionally, students who present professional papers or published papers and who submit/publish papers will be given increased priority for funding. Once the student advances to candidacy, they have five years to complete an approved dissertation.

5. Teaching evaluations

Priority for teaching-related funding will also be tied to successful teaching as indicated by teaching evaluations and faculty oversight. Students with strong research skills (indicated by coursework and exam performance) will be given priority for research-related funding contingent on resources.

Master of Arts (M.A.) in Sociology

The M.A. in Sociology requires a minimum of 30 credit hours of coursework and a research paper. Students are required to take the following three courses: SOC 501, Sociological Theory (3 CH); SOC 526A, Statistical Data Analysis in Sociology I (4 CH); and SOC 512, Sociological Research Methods and Design (4 CH). Students must receive an A or B in all three classes. Students are required to enroll in four additional graduate seminars (12 CH) in sociology or related discipline if granted permission by the Director of Graduate Studies, and in four credit hours of individual research for completion of the master's degree research paper (SOC 591). Students may take Readings in Sociology (SOC 596) as long as the above requirements are also fulfilled.

Credit Hours per Semester

We require full-time students with full assistantships (i.e., time assistantships) to enroll in a minimum of eight credit hours per semester. Students with graduate fellowships, Veteran's benefits, or SIUC scholarships also must take at least nine credit hours as required by the Graduate School. GAs in their final semester of the M.A. in Sociology program who have or will meet all requirements may seek program approval to take six credit hours in that final semester.

Master's Research Paper

The research paper is developed from a paper produced in a sociology course or through independent readings/research with a faculty member. Students will select an advisor for the Master's Research Paper (e.g., the person who taught the course or supervised the readings/research project). Students will enroll with this faculty member for four credit hours in SOC 591, Individual Research, for the completion of the research paper. These credit hours should be taken when the student will be doing the most work on the research paper and can be divided across two terms. The student alerts the Director of Graduate Studies when a chair and second reader are selected. In case of disagreement over the evaluation (pass/

revision/fail) of the paper, the Graduate Studies Committee will appoint a third reader. The Master's Research Paper normally is 30 to 40 pages in length and uses the standard American Sociological Review reference style or the APA style guide. In addition to submitting the paper per the Graduate School requirements, one suitably bound copy must be deposited in the program or school library.

Doctor of Philosophy (Ph.D.) in Sociology

Advisement

The responsibility for initial advisement rests with the Director of Graduate Studies. As soon as possible, the student, in consultation with the Director of Graduate Studies, will request an appropriate member of the program's graduate faculty to serve as the student's academic advisor. This advisor will help prepare a general plan of study and will be responsible for making sure that their student understands the various requirements of the program and is making timely progress.

It is the student's responsibility to develop, in consultation with their advisor, a plan of study leading to timely completion of the comprehensive examinations and dissertation (a form is available from the Director of Graduate Studies). This plan of study will be filed in the student's permanent file. Change of advisor should be filed with the Director of Graduate Studies.

Research Tool Requirement

Doctoral students must complete the following courses (equaling 22 Credit Hours) with grades of *A* or *B*:

- SOC 501
- SOC 512
- SOC 514
- SOC 526A
- SOC 526B
- SOC 518

In addition to these courses, students must develop research skills that are appropriate and necessary for their dissertation research (see the next section and the time-lines for additional requirements and clarifications). It is the responsibility of the student's program advisor to supervise the student's development of these research skills.

Course Work and Readings

While in the Ph.D. in Sociology program, students must take at least four substantive, 500-level, seminars in sociology (15 credit hours; on a case-by-case basis, permission may be granted for courses in a related discipline) beyond the research tool courses. Ideally the seminars should be taken prior to the substantive examination. In addition to the regularly offered courses and seminars, the program provides supervised readings depending upon the availability of faculty members. Supervised readings are not to be taken as substitutes for regularly-scheduled courses and seminars, and registration in them requires prior approval by the readings faculty in an email granting permission for the course and general approval by the student's advisor. This email must be forwarded to the Director of Graduate Studies.

Credit Hours per Semester

We require full-time students with full assistantships (i.e., ½ time assistantships) to enroll in a minimum of eight credit hours per semester. Students with graduate fellowships, Veteran's benefits, or SIUC scholarships also must take at least nine credit hours as required by the Graduate School.

Comprehensive Examinations

Ph.D. students must pass one written comprehensive exam and one written comprehensive review paper: the Doctoral Comprehensive Exam which is taken during the second weekend in January of the first year for students with an SIUC M.A. in Sociology and the second year for others, and the Substantive

Comprehensive Review Paper on the student's research field which should be finished within one year of the Doctoral Comprehensive Exam. Students should form the substantive review paper committee within three months after completion of the Doctoral Comprehensive Exam. Students are advised to complete this paper within a few months if possible.

Doctoral Comprehensive Exam

This examination will be geared towards the demonstration of sociological insights, and its results will be graded by any two faculty members who taught a graduate course or supervised graduate students in the preceding three semesters. Ph.D. in Sociology students with an SIUC M.A. in Sociology take the exam after their first semester in the Ph.D. in Sociology program and others after their third semester.

Using an article selected by the examination committee, students will discuss and provide written commentary and critique on key substantive concepts, theories, method analysis, and sociological insights or contributions in 15 double-spaced typed pages, 12 pt font. Students will be assessed on their ability to clearly and concisely summarize, discuss, and critique the article and provide alternative theoretical and/or methodological arguments. The examination committee will consist of two faculty members who have taught graduate courses and/or supervised graduate students in the previous three semesters. The examiners will be chosen by lottery conducted by the Director of Graduate Studies. The examiners will rotate every exam period. The two faculty members will select a sociological article for the exam at least two to three days before the exam. Faculty graders will have up to four full regular semester weeks to grade the comprehensive exams and will report their individual written results to the Director of Graduate Studies. Results will be Pass or Fail and the grade will be used as one aspect of evaluation for continuation in the program.

Annual Faculty Review

All Ph.D. students will compile dossiers that will be used in a full faculty review of on-campus Ph.D. graduate students (including ABDs). The review will occur in late spring. Materials are due February 1. Students must submit a CV, along with a statement of purpose for completing Ph.D. in Sociology studies.

- Up-to-date curriculum vita: name, address, education, current position, assistantship and work history in the program, courses taught, research-paper presentations and publications, professional memberships, and other scholarly activities.
- One-page statement of plans for remainder of the doctoral programwith detailed timeline including: information pertaining to research direction(s) with topics, doctoral and substantive comp exams' actual or proposed dates and grades, prospectus topic and date, proposed chair and committee members; if ABD, dissertation topic, date prospectus defended, and proposed date of dissertation completion; chair, committee members.
- For each student, at least one faculty member must agree to supervise the student through the completion of the Ph.D. in Sociology, and at least three other faculty members must agree to serve on the student's dissertation committee. This will be done in two separate blind ballots of the full faculty for each non-ABD student. The first ballot will assess willingness of faculty to serve as the student's dissertation chair, and the second will assess willingness of faculty to serve on the student's dissertation committee. If a student fails to achieve at least one vote on the first ballot, and at least four votes on the second ballot, they will be terminated from the program. For ABD students, the faculty will review your timely progress towards completion of your dissertation. Failure to make progress may preclude funding.

Substantive Comprehensive Review Paper

The substantive review paper will assess students' ability to think and write critically about a subfield within Sociology. Students should select the area on which they will write based on their expected dissertation topic. In so doing, the review paper functions to prepare the student for the dissertation and the review paper committee may function as the basis of the dissertation committee, to which additional members will be added later. Typically, the chair of the review paper committee becomes the chair of the dissertation committee. In selecting an area and organizing the relevant literature, students should first identify the area they are interested in studying, clarifying their dissertation research topic, and investigate historical/developmental issues in that area, key theoretical perspectives, early and contemporary

debates, and trends indicating the state of the field. Faculty may provide broad orienting questions to help the student engage the literature.

In consultation with the chair, a second faculty member will be identified and invited to join the committee. The student will develop a reading list under the guidance of the committee. Each committee member will have the opportunity to suggest changes to the reading list; however, this must be done in time to allow the student to complete the review paper as planned. A final approved reading list must be completed and given to each member of the committee at least one month prior to writing the review paper (the date of which should be agreed upon and deposited with the Director of Graduate Studies). An ideal time to begin constituting the committee and compiling the reading list is in the spring after the Doctoral Comprehensive Exam. This process may take as long as the semester, but need not. Students should read and understand all relevant readings and then complete the review paper. Once the student is ready, they give the start date for the writing period to the Director of Graduate Studies. The writing period is 30 days.

Students should write the review paper early enough in a semester to allow faculty four regular semester weeks to grade it before the end of term. Alternatively, students may write it over one month in the summer or winter break and the faculty committee will evaluate the review paper in the first month of the subsequent semester. The review paper should be approximately 40 written pages (exclusive of references). At the end of the month, the review paper should be turned in to the Director of Graduate Studies who will attach a cover sheet and distribute it to the committee. Completing the paper in the spring or by start of fall in the year after the doctoral exam is recommended. This timeline is designed to give the student ample time to write and defend a dissertation proposal so that they may be eligible for faculty nomination for the DRA (Dissertation Research Assistantship) in early spring.

The faculty committee will have up to four regular semester weeks to read, assess, and grade the review paper (faculty are not expected to grade review papers over breaks). The committee members will turn in comments to the Director of Graduate Studies, who will then give copies to the student. At the discretion of the grading faculty, the student may be asked to defend the review paper orally before a passing grade is awarded. Outcomes include: High Pass, Pass, Revisions, or Fail. A final copy of the approved review paper should be deposited with the Graduate Secretary before the end of the semester.

In the event that revisions are required, the student has one month to complete said revisions. If revisions are necessary, committee members will likely meet with the student to offer guidance. If committee members disagree on whether the student has completed a satisfactory paper, a third faculty will grade the review paper. An oral defense of the revised paper may also be required at the faculty's discretion. Students who fail the review paper will be dismissed from the program.

IMPORTANT: Students are also required to demonstrate their mastery of a second area through two or more of the following: taking seminars (e.g., earning a certificate and/or emphasis), teaching undergraduate courses, writing for a scholarly audience (presenting and especially publishing) and appropriate demonstration in the dissertation. The chair of the student's dissertation as well as at least one other faculty with expertise in that area may discuss student's competence in this area in a letter of reference.

Dissertation

The dissertation is the single most important requirement for the Ph.D. in Sociology degree, and the student should start thinking about potential dissertation topics soon after admission. Information concerning Graduate School requirements regarding the dissertation is contained in the Graduate Catalog.

After completing both comprehensive examinations, in consultation with the Director of Graduate Studies, the student selects a dissertation chair. In consultation with the dissertation chair, the student selects a committee consisting of four additional graduate faculty members, including one from outside of the Sociology program. Students selecting the Criminology/Deviance/Criminal Justice option may have committee members from the Criminology and Criminal Justice program who serve as either inside or outside members. Exceptions to this committee membership will be granted in only limited circumstances. Normally, students are encouraged to use the two members of their substantive comprehensive examination committee as the initial members of the dissertation committee with one serving as chair. The Director of Graduate Studies must submit the committee roster to the Graduate School for approval prior to the scheduling of the prospectus defense.

Students may change the composition of the committee if necessary. First, the student must find a dissertation chair, who must first agree to serve and who must also be a member of the Graduate Faculty. Second, the student must identify the remaining members of the committee. Five committee members are needed, and at least one must be from outside of the Sociology program. After discussion with current chair/members and new/potential members, students may reconstitute a dissertation committee prior to the dissertation defense. Notification of the new members and chair is needed in writing to the Director of Graduate Studies who must submit the new roster.

The student then prepares a detailed dissertation prospectus, showing clearly the purpose and scope of the research, its relation to the previous work in the field, its theoretical relevance and significance, and the research methods and techniques. The prospectus must contain a section documenting the student's training and abilities in using the proposed research methods and techniques. The dissertation committee will have at least two weeks to read the prospectus before the formal session. During summer months, students should consult with all committee members prior to arranging for any hearings. The prospectus must be approved by the dissertation committee in a formal session and filed in the graduate program office. A prospectus must be approved no later than the end of the full-time student's sixth semester in the Ph.D. in Sociology program for students with an SIUC M.A. in Sociology and 8th semester for those with an external M.A. in Sociology. Failure to do so may preclude funding.

Dissertation Defense

The completed dissertation must be acceptable to the chair of the dissertation committee before being circulated among committee members for evaluation. After acceptance of the dissertation by the candidate's dissertation chair, an oral examination will be conducted by the committee in an open meeting, as specified by Graduate School regulations. This examination will be based upon the contents and implications of the dissertation. The examination should not be scheduled sooner than four weeks after the completed dissertation has been distributed to the dissertation committee. A public announcement and a copy of the dissertation shall be made available to other faculty of the program at least one week before the examination. Upon satisfactory completion of the oral examination, the student must follow the Graduate School rules for submission and subsequently submit a suitably bound copy to the program or school library.

Expectations

1. Students will complete their Substantive Comprehensive Exam in the area of concentration.
2. Students' dissertations will be on a topic related to the area of concentration.

Committees

Students' substantive comprehensive exam committees will have at least one sociology faculty member. Students' dissertation committees will have at least two sociology faculty members who are members of the Graduate Faculty.

Advising

Prior to the appointment of the dissertation chair, faculty advisors for Ph.D. in Sociology students should be sociology faculty members.

Crime/Deviance/Criminal Justice Emphasis

A student who has been admitted to the Ph.D. in Sociology program, and whose major interest is in the area of crime, criminology, or criminal justice may want to incorporate the following courses, expectations, and committee guidelines into her/his program of study to form an emphasis in the field:

Required Courses:

- CCJ 500: Foundations of Criminal Justice
- CCJ 504: Criminological Theory -OR-
- SOC 572: Seminar in Criminology

Two additional 500-level courses, from the following:

- SOC 530: Topical Seminar in Sociology (when topic is relevant)
- CCJ 540: Seminar in Theory and Practice of Crime Prevention
- CCJ 550: Seminar in Juvenile Justice and Delinquency
- CCJ 562: Law and Social Control
- CCJ 571: Seminar in Punishment and Corrections
- CCJ 576: Policy Analysis in CCJ
- CCJ 584: Administration and Management in Criminal Justice
- CCJ 587: Seminar in Policing
- CCJ 592: Advanced Seminar in Criminology and Criminal Justice

Note: One of the four courses required for the concentration must be a sociology course.

Sociology as a Secondary Emphasis in Another Ph.D. Degree Program

A student who is enrolled in another Ph.D. degree program and who wishes to declare Sociology as a secondary area must submit to the Director of Graduate Studies a written request which includes the following: a plan of course work, a personal reading list, and an overall program statement indicating the relationship of the area in sociology to the student's total program.

Interdisciplinary Ph.D. in Sociology Degree Program

Students who have been admitted to the Ph.D. in Sociology program, and who wish to develop an interdisciplinary program, should review the guidelines set forth by the Graduate School. The Dean of the Graduate School approves interdisciplinary Ph.D. degree programs only when they bear the endorsement of a program that offers a Ph.D. degree. A student who wishes to apply for an interdisciplinary program, in which Sociology will be the sponsoring program, should understand that the program of study must include substantial involvement in Sociology courses and seminars, and that the program may require the student to meet other requirements similar to those established for the Ph.D. in Sociology program.

Certificate in Women, Gender, and Sexuality Studies

A student interested in a post-baccalaureate certificate in Women, Gender, and Sexuality Studies (WGSS) should contact the WGSS Director and/or cross-listed Sociology faculty for the required courses and guidelines. The program encourages Sociology of gender/sexuality students to pursue the certificate and doing so works well within the doctoral program, especially if one course is taken during the M.A. in Sociology program.

M.A. in Sociology and Ph.D. in Sociology students who wish to incorporate the certificate requirements into their program of study may do so.

Note: One of the courses required for the certificate must be a sociology course.

Sociology Courses

SOC406 - Social Change Theories and problems of social change; their application, with emphasis on the modern industrial period. Credit Hours: 3

SOC407 - Sociology of Sexuality (Same as WGSS 407) Examines a range of social issues related to human sexuality and the interaction between sexuality and other social processes. Emphasis is on the relevant concepts, theories, and methods in the field of sexual studies, the social and historical construction of sexuality and the ways in which social characteristics shape sexual behaviors and desires, sexual variation, including its causes and consequences, how basic social institutions affect the rules governing sexuality, the major moral and political controversies that surround sexuality, and the "dark side" of sexual life. Credit Hours: 3

SOC415 - Logic of the Social Sciences (Same as PHIL 415) An examination of the theoretical structure and nature of the social sciences and their epistemological foundations. The relationship of social theory to social criticism; theory and praxis. Historical experience and social objectivity. Social theory as practical knowledge. Credit Hours: 3

SOC423 - Sociology of Gender (Same as WGSS 442) Examines social science theory and research on gender issues and contemporary roles of men and women. The impact of gender on social life is examined on the micro level, in work and family roles, in social institutions, and at the global, cross-cultural level. Credit Hours: 3

SOC424 - Social Movements and Collective Behavior An analysis of social behavior in non-institutional settings such as crowds, disasters, riots, mass panics, crazes, cults, and social movements. Emphasis is on the cultural and structural factors leading to collective action and its impact on social change. Credit Hours: 3

SOC435 - Social Inequality Discussion of theories and evidence pertaining to the socio-structural causes and consequences of inequality based on social class, prestige, power, gender, wealth and income. Credit Hours: 3

SOC437 - Sociology of Globalization and Development Survey of sociological theories and research on globalization and development: modernization, dependency, world-system, and global economy. Problem areas include population growth and control, economic growth and underdevelopment, role of state, transnational corporations, financial institutions, and organizations, non-governmental organizations, work, population, migration, social movements and resistance, gender, race-ethnic, class, and sexuality issues. Credit Hours: 3

SOC455 - Racial Inequality This course is an introductory survey on the sociology of Racial Inequality. As such, the basic objective of this course is to give students a broad understanding of race and inequality issues in society. This course will require students to become familiar with the critical frameworks and concepts through which social scientists make sense of racial inequality; to come to terms with the ideological, political, and economic mechanisms that perpetuate racist structures; to study the past and present historical contexts within which racial inequality is given shape; and to explore potential venues for change. Credit Hours: 3

SOC460 - Sociology of Medicine Analyzes the social structures and issues involved in health, illness, and health-care delivery systems in the United States. Explores the economic and political influences on the role of medicine in society, as well as the organization of medical care and health institutions. Critically examines the social processes and factors that influence health and illness behavior. Credit Hours: 3

SOC461 - Women, Crime and Justice (Same as CCJ 460 and WGSS 476) A study of women as offenders, as victims, and as workers in the criminal justice system. Credit Hours: 3

SOC462 - Victims of Crime (Same as CCJ 462) An examination of the extent and nature of victimization, theories about the causes of victimization, the effects of crime on victims and services available to deal with those effects, victims' experiences in the criminal justice system, the victims' rights movement, and alternative ways of defining and responding to victimization. Credit Hours: 3

SOC465 - Sociology of Aging The adult life cycle from a sociological perspective, with emphasis on the later stages of adulthood. Special topics on aging include demographic aspects, family interaction, ethnicity, and cross-cultural trends. Credit Hours: 3

SOC471 - Introduction to Social Demography Survey of concepts, theories, and techniques of population analysis; contemporary trends and patterns in composition, growth, fertility, mortality, and migration. Emphasis is on relationship between population and social, economic, and political factors. Credit Hours: 3

SOC473 - Juvenile Delinquency (Same as CCJ 473) An in-depth study of theories of delinquency, analytical skills useful in studying delinquent offenders, systematic assessment of efforts at prevention, and control and rehabilitation in light of theoretical perspectives. Six hours of social/behavioral science recommended. Credit Hours: 3

SOC475 - Political Sociology (Same as POLS 419) An examination of the social bases of power and politics, including attention to global and societal political relations, as well as individual-level political beliefs and commitments; primary focus on American politics. Credit Hours: 3

SOC476 - Religion and Politics (Same as POLS 476) Examines the connection between religious beliefs and institutions and political beliefs and institutions. Comparative studies will focus on religious political movements in the United States and throughout the world. Credit Hours: 3

SOC490 - Special Topics in Sociology Varying advanced sociological topics selected by the instructor for study in depth. May be repeated for a maximum of twelve semester hours provided registrations cover different topics. Topics announced in advance. Credit Hours: 3

SOC501 - Sociological Theory A systematic survey of sociological theory with the focus on both classical and contemporary sociological thought. An in-depth examination of selected thinkers whose work laid the foundation for major schools of contemporary sociology, along with an overview of issues in contemporary sociological theory. Students are expected to be familiar with the fundamentals of sociological analysis. Credit Hours: 3

SOC507 - Seminar in the Sociology of Sexuality (Same as WGSS 507) Examines the emerging body of work in the fast-growing field of sexuality studies. While the course focuses on sociological research, it takes a few side trips into other disciplines. We begin by discussing the evolution of theory and methodology in the sexual sciences. After briefly considering the contributions of early sexologists and the work of Sigmund Freud, we will survey the sociology of sexuality from its beginnings in quantitative research, through classical sociological theory, social constructionism, and feminism. We'll then examine Foucault's radical rethinking of sexuality and grapple with the challenges of queer theory. The second part of the course will take up several substantive areas in the sociology of sexuality, drawing on cutting edge quantitative and qualitative research. Credit Hours: 3

SOC512 - Sociological Research Methods and Design Focus on research process: identification of the role of theory, formulation of research questions, research design and quantitative, qualitative, and mixed method data collection techniques. Connections between theory, research design and measurement decisions, and interpretation (answering research questions) are emphasized throughout. Includes practical and ethical issues, e.g. informed consent. Credit Hours: 4

SOC514 - Qualitative Methodology Focus on research strategies involving the systematic exploration, documentation and analytic description of social settings, interactions, meanings, lifeworlds and texts. Includes discussion of field observation, depth interviewing, oral histories/narratives, case studies, biographies and life histories, focus group interviewing, content analysis of written and visual data, historical/archival investigations, among other approaches. Credit Hours: 4

SOC518 - Teaching Sociology Emphasis is on the development of teaching skills and pedagogical knowledge for instructors in sociology. Credit Hours: 3

SOC526A - Statistical Data Analysis in Sociology I Provides a foundation in univariate and bivariate descriptive statistics, inferential statistics including hypothesis testing about population parameters and bivariate and multivariate relationships, and measures of association for nominal, ordinal, and interval-ratio variables, and an introduction to bivariate and multivariate correlation and linear regression (including concepts of causal modeling and control variables). Restricted to graduate standing. Credit Hours: 4

SOC526B - Statistical Data Analysis in Sociology II Provides in-depth instruction in multiple regression including assumptions of linear model, diagnostics and corrections for violation, exploratory factor analysis, using categorical dependent variables (logistic and multi-nominal regression), nonlinear relationships, interactions, and extensions to advanced techniques as time allows. Prerequisite: SOC 526A (or successful pass of proficiency test). Credit Hours: 4

SOC530 - Topical Seminar in Sociology Content varies with interests of instructor and students. Special approval needed from the instructor. Credit Hours: 2-4

SOC533 - Seminar in Social Stratification Comparative study of power, social class, and status; conceptions of social structure and measurement techniques; explanations of social and occupational mobility; institutions and differential life changes. Credit Hours: 3

SOC542 - Seminar on the Family (Same as WGSS 542) Overview of the theoretical approaches, substantive issues, and techniques of research and measurement in the study of American family life. Approaches include structural functionalism, conflict theory, and the feminist critique. Among the substantive topics are family roles and relationships, kinship, relationships of the family to other institutions and family change. Credit Hours: 3

SOC544 - Sociology of Gender (Same as WGSS 544) Examines major theories, themes, and research methods on the intersection of gender, race, class, and sexuality. Topics may include: construction of gender, race, class and sexual identities; work; social movements; intersection of family and work; parenting and reproduction; historical and cross-national dimensions. Credit Hours: 3

SOC545 - Gender and Work (Same as WGSS 545) This course is designed to investigate how gender structures the workplace, as well as how men and women both reproduce and negotiate gender at work. Focusing on select topics, we will develop an understanding of workplaces as gendered organizations and discuss sex segregation, wage inequality, the glass ceiling, the glass escalator, sex work, men and women in nontraditional occupations, the body at work, emotional labor, aesthetic labor, immigration and work, globalization, and unemployment and welfare. Also, this class will take an intersectional approach to analyzing and discussing issues of gender inequality at work; meaning, we will take seriously how gender intersects with race, ethnicity, class, and sexuality to shape both inequality and resistance at work. Credit Hours: 3

SOC547 - Gender and Social Change (Same as WGSS 547) This graduate seminar is a sociology of gender course that focuses on changes in the subfield itself and in peoples' lived experiences in terms of gender, gender relations, and gender stratification. Readings and discussions will trace the development of the sociology of gender over the last several decades. We will discuss how ideas and theories have changed over the years including changes in concepts and in how sociologists define, problematize, and theorize about sex and gender as traits, identities, relations, structures, and systems. We will also explore 'objective' or actual change (or lack of change) related to gender in individuals, groups, and societies. Credit Hours: 3

SOC551 - Sociology of Religion Theoretical and empirical study of the origin, location and function of religious ideas and institutions in society. Credit Hours: 3

SOC552 - Seminar in Race and Ethnic Relations Overview of theories, research and prevailing issues of race and ethnic relations in contemporary societies. Discussions will include world expansion during colonialism, political economy of minority groups, class and gender issues in the global development. Credit Hours: 3

SOC555 - Social Movements and Collective Action A seminar designed to survey the major sociological approaches to social movements and collective action. Emphasis will be on movement culture, social movement organizations and the social environment in which collective action occurs. Credit Hours: 3

SOC557 - Revolutions and Radical Social Change This course is designed to explore the ways in which revolutions have been theorized. It sets out to study Classical (Chinese, French, and Russian) and Modern (Cuban, Mexican, Iranian, and other Third World) historical cases, as well as contemporary popular uprisings. This course will require students to become familiar with the structural causes of revolution; the cultural and ideological roots of revolutionary mobilization; the emotional, gendered, and story-telling dimensions of revolution-making; and the relationship between globalization and more contemporary attempts at Radical Social Change. Credit Hours: 3

SOC572 - Seminar in Criminology A survey of classical and contemporary theoretical perspectives related to crime and justice. Credit Hours: 3

SOC591 - Individual Research Supervised Research Projects Open to graduate students with a major in sociology. Graded S/U only. Special approval needed from the instructor and departmental director of graduate studies. Credit Hours: 1-4

SOC596 - Readings in Sociology Supervised readings in selected subjects. Graded S/U only. Special approval needed from the instructor and departmental director of graduate studies. Credit Hours: 1-8

SOC600 - Dissertation Special approval needed from the chair. Credit Hours: 1-16

SOC601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

SOC699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Sociology Faculty

Frase, Robert, Assistant Professor, Ph.D., Purdue University, 2023; 2023. Medical sociology, health inequalities, intergenerational relations.

Leach, Brittany, Assistant Professor, Ph.D., University of Virginia, 2020; 2022. Race, gender, theory, social movements, and public law.

Reed, Jean-Pierre, Professor, Ph.D., University of California-Santa Barbara, 2000; 2009. Cultural sociology, race relations, social movements, revolutions and change, theory.

Sherkat, Darren E., Professor, Ph.D., Duke University, 1991; 2001. Religion, social movements, quantitative methods.

Sutherland, D. Kyle, Assistant Professor, Ph.D., University of British Columbia, 2023; 2023. Medical sociology, criminology.

Whaley, Rachel B., Associate Professor, Ph.D., University of Albany, SUNY, 1999; 2006. Gender, criminology, and quantitative methods.

Wienke, Chris., Associate Professor, Ph.D., University of Pittsburg, 2003; 2008. Family, sexuality, gender, mental health, and social inequality.

Emeriti Faculty

Alix, Ernest K., Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1966; 1967.

Burger, Thomas, Associate Professor, Emeritus, Ph.D., Duke University, 1972; 1973.

Danaher, William F., Professor, Ph.D., North Carolina State University, 1994; 2014.

Hawkes, Roland K., Associate Professor, Emeritus, Ph.D., Johns Hopkins University, 1967; 1970.

Hendrix, Lewellyn, Professor, Emeritus, Ph.D., Princeton University, 1974; 1971.

Hope, Keith, Professor, Emeritus, Ph.D., London University, 1963; 1986.

Nall, Frank C., II, Associate Professor, Emeritus, Ph.D., Michigan State University, 1959; 1964.

Theater

The School of Theater and Dance is an accredited institutional member of the National Association of Schools of Theatre, 11250 Roger Bacon Drive, Suite 21, Reston, Virginia 20190.

The School of Theater and Dance blends scholarship and practice in an academically based theater experience that provides students with broad based exposure to human experience and a sound foundation in the skills of theater craft. Class work in all areas of theater is complemented by a production program that reinforces both scholarship and practice, creating work that is as imaginative and highly polished as possible. Graduates will be able to apply their knowledge of performance, production, theater history, contemporary practice, literature and theory in a wide variety of theater venues. Graduates will also be able to demonstrate intrapersonal and interpersonal skills in the form of leadership qualities, self-discipline, creative expression, critical thinking, and the ability to work effectively as a part of a collaborative team. The development and guidance of talent and discipline, both characteristic of the artist/scholar, are the goals of the School of Theater and Dance.

The School of Theater and Dance maintains two theaters for public productions: the McLeod Theater, a proscenium stage seating approximately 500, and the Christian H. Moe Laboratory Theater, a flexible stage seating up to 110. The playbill typically encompasses a balance of contemporary, classic, and original works, and offers seven productions including a musical during the academic year. The summer season, McLeod Summer Playhouse, consists of several productions operating as a professional summer stock company, offering stipends and/or graduate credit.

The School of Theater and Dance offers a graduate program of study leading to a Master of Fine Arts degree in Theater. An interdisciplinary doctoral study in Theater is sponsored by the School of Communication Studies.

Admissions

To apply, students must fill out the online application for Admission to Graduate Study in Theater. Applicants for graduate studies in theater must satisfy the minimum requirements of the Graduate School before being admitted to the school. The application includes a statement of purpose, transcripts from all undergraduate and graduate coursework together with three (3) letters of recommendation from former teachers or supervisors. There is a $65 nonrefundable application fee payable online.

There are additional requirements established by each of the areas of study in the M.F.A. in Theater Program. Applicants in the directing area are required to submit materials that are representative of their previous theater work and/or indicate an aptitude for stage direction (including promptbooks, programs, reviews, photos, video tapes or casebooks from previous directing efforts). At this time, each applicant will work with actors on a directing scene to demonstrate their ability to analyze the scene and work with actors. Applicants in the costume, lighting, scene design and technical direction areas are required to submit portfolio samples of their work. Applicants in the playwriting area must submit approximately two to two-and-a-half hours of written material consisting of one full-length play and/or several significant short pieces. These materials should be sent directly to the Director of Graduate Studies at the address below.

Although an undergraduate major in theater is not essential for admission to a graduate degree program in theater, the Director of Graduate Studies may require that certain course deficiencies in undergraduate subject areas be remedied. These requirements are stated in writing on the admissions approval form.

More detailed information about these requirements is obtainable from: Director of Graduate Studies, School of Theater and Dance, Mail Code 6608, Southern Illinois University Carbondale, Carbondale, IL 62901, 618-453-5741.

Financial Assistance

There are several kinds of financial assistance available to graduate students in the School of Theater and Dance. First, there are graduate fellowships awarded on the basis of superior scholarship. Second, special fellowships are offered annually to students who show promise of success in graduate studies although their academic records have been only average due to economic disadvantages. The fellowships have no service requirements. Third, graduate assistantships with competitive stipends are available to students who are employed in various academic support positions, such as teaching, research, and production. All fellowships and assistantships include a waiver of tuition (both in-state and out-of-state). Applications for financial assistance may be obtained by contacting the Director of Graduate Studies.

Master of Fine Arts (M.F.A.) in Theater

The Master of Fine Arts degree program in Theater emphasizes practical expertise in one of the following areas: directing, playwriting, costume design, lighting design, scene design and technical direction. The school encourages interdisciplinary study in related fields including performance studies, dramatic literature, dramaturgy, musical theater and opera. In most instances, a three-year residency is required of all M.F.A in Theater students.

By March of their first year of study, each student will undergo a review of their progress in the program. The criteria by which each area will make its evaluations are to be found described in detail in the M.F.A. in Theater handbook, in the appropriate section dealing with the area's specific requirements. The faculty can elect from the following actions: 1. Suggest areas the student needs to work on before he/she is allowed to proceed to the Qualifier/Thesis project. 2. Move the student along to the Qualifier/Thesis project. 3. Require the student to attend a 2nd Year Review. 4. Dismiss the student from the M.F.A. in Theater program.

All M.F.A. in Theater students must complete a minimum of 60 credit hours of course work, including the ***M.F.A. in Theater degree core*** *requirements, and with a minimum of 30 credit hours at the 500 level:*

- THEA 500: Theater Research Methods (3 CH)
- THEA 501: The Historical Avant Garde & Performance (3 CH)
- THEA 599: Thesis (6 CH)

Total M.F.A. in Theater Core: 12 hours

In addition, each area of study has specific area and elective requirements, which are as follows:

Directing

- M.F.A. core (12 CH)
- THEA 401A: Stage Management (2 CH)
- THEA 401B: Stage Management Lab (1 CH)
- THEA 402: Directing Studio (3 CH)
- THEA 417: Advanced Acting (3 CH)
- THEA 502: Advanced Directing Studio (9 CH)
- THEA 504A: Performing Justice/Theory (3 CH)
- THEA 504B: Performing and Producing Resistance (3 CH)
- THEA 511A: Playwriting I (3 CH)
- THEA 520A: Period Style for Theater I (3 CH)
- THEA 520B: Period Style for Theater II (3 CH)
- Design Classes (select 2 of 3) (6 CH)
    - THEA 407: Scene Design
    - THEA 414: Costume Design
    - THEA 418: Lighting Design
- Electives (by advisement) (9 CH)

Total: 60 credit hours

Costume Design

- M.F.A. core (12 CH)
- THEA 414: Costume Design (3 CH)
- Design & Production Classes (select 2 of 3) (6 CH)
    - THEA 407: Scene Design
    - THEA 418: Lighting Design
    - THEA 419: Technical Direction
- THEA 510: Production Design Seminar (6 CH)*
- THEA 516: Advanced Theater Design & Production (2-8 CH)
- THEA 412: Patterning & Draping for the Theater (2 CH)
- THEA 413: Drafting for the Theater (3 CH)
- THEA 415A, THEA 415B, THEA 415C, THEA 415D Costume Crafts I, II, III, IV (8 CH)
- THEA 512: Advanced Costume Construction (2 CH) (may be taken 4 times)

- THEA 520A: Period Style for Theater I (3 CH)
- THEA 520B: Period Style for Theater II (3 CH)
- Electives (by advisement) (8 CH)
- *THEA 510 is to be taken every semester in residence. Students who complete the program in fewer semesters must make sure degree courses total 60 credit hours.

Total: 60 credit hours

Lighting Design

- M.F.A. core (12 CH)
- THEA 418: Lighting Design (3 CH)
- Design & Production Classes (select 2 of 3) (6 CH)
    - THEA 407: Scene Design
    - THEA 414: Costume Design
    - THEA 419: Technical Direction
- THEA 510: Production Design Seminar (6 CH)*
- THEA 516: Advanced Theater Design & Production (2 CH) (may be taken 6 times)
- THEA 520A: Period Style for Theater I (3 CH)
- THEA 520B: Period Style for Theater II (3 CH)
- Electives (by advisement) (19 CH)
- *THEA 510 is to be taken every semester in residence. Students who complete the program in fewer semesters must make sure degree courses total 60 credit hours.

Total: 60 credit hours

Scene Design

- M.F.A. core (12 CH)
- THEA 407: Scene Design (3 CH)
- Design & Production Classes (select 2 of 3) (6 CH)
    - THEA 414: Costume Design
    - THEA 418: Lighting Design
    - THEA 419: Technical Direction
- THEA 510: Production Design Seminar (6 CH)*
- THEA 516: Advanced Theater Design & Production (2 CH) (may be taken 6 times)
- THEA 520A: Period Style for Theater I (3 CH)
- THEA 520B: Period Style for Theater II (3 CH)
- Electives (by advisement) (19 CH)
- *THEA 510 is to be taken every semester in residence. Student who complete the program in fewer semesters must make sure degree courses total 60 credit hours.

Total: 60 credit hours

Technical Direction

- M.F.A. core (12 CH)
- THEA 419: Technical Direction (3 CH)
- Design & Production Classes (select 2 of 3) (6 CH)
    - THEA 407: Scene Design
    - THEA 414: Costume Design
    - THEA 418: Lighting Design
- THEA 510: Production Design Seminar (6 CH)*
- THEA 516: Advanced Theater Design & Production (2 CH) (may be taken 6 times)
- THEA 520A: Period Style for Theater I (3 CH)
- THEA 520B: Period Style for Theater II (3 CH)
- Electives (by advisement) (19 CH)
- *THEA 510 is to be taken every semester in residence. Students who complete the program in fewer semesters must make sure degree courses total 60 credit hours.

Total: 60 credit hours

Playwriting

- M.F.A. core (12 CH)
- 500-level Theater History courses by advisement (6 CH)*
- THEA 503: New Play Development (18 CH)
- THEA 504A: Performing Justice/Theory (3 CH)
- THEA 504B: Performing and Producing Resistance (3 CH)
- THEA 511A: Playwriting I (3 CH)
- THEA 511B: Playwriting II (3 CH)
- Electives (by advisements) (12 CH)**

Total: 60 credit hours

*Any two of these Theater History courses must be taken in year 1 or 2 by advisement:

- THEA 450: Topical Seminar
- THEA 454: American Theater
- THEA 460: Black Theater
- THEA 525: Contemporary Experiments in Drama
- THEA 550: Topical Seminar may apply depending on the topic (may be repeated)

Certain other Theater, English or Communication Studies courses may apply with permission.

**THEA 402 (Directing Studio) must be taken in the first two years unless playwrights already have directing experience.

Besides the core requirements, the students will propose and successfully complete a project to qualify for further study in their chosen area. This project will include a research component in conjunction with a realized practical project.

Thesis requirements vary for each area of study; however, they include a research component as well as a description and evaluation of the student's creative project.

The School of Theater and Dance requires an oral examination, conducted by the student's thesis committee, for each M.F.A. in Theater candidate. The examination covers the thesis or dissertation, and may include questions designed to ascertain the student's general competence in theater.

Doctor of Philosophy (Ph.D.) in Communication Studies

The School of Theater and Dance offers a program of study in Theater History and Playwriting under the administration of the School of Communication Studies leading to a Doctor of Philosophy Degree in Communication Studies.

Admission

To apply a student must fill out the online application for Admission to Graduate Study in Communication Studies. Applicants for graduate studies in theater must satisfy the minimum requirements of the Graduate School before being admitted to the program. The application includes a statement of purpose, transcripts from all undergraduate and graduate coursework together with three (3) letters of recommendation from former teachers or supervisors.

There is a $65 nonrefundable application fee payable on-line or by check made out to SIUC.

Additionally, prospective students must submit materials that are representative of their previous theater work and/or indicate an aptitude for work in their chosen field of study. Applicants to Theater History must include several critical research essays. Applicants to the playwriting area must submit approximately two- to two-and-a-half hours of written material consisting of one full-length play and/or several significant short pieces. All prospective students should include a sample of their research writing. Video tapes/ DVDs or websites are acceptable digital materials.

More information for prospective and current students is available at the School of Theater and Dance website and the School of Communication Studies.

A student must take 51 credit hours of course work beyond the Master's degree, 24 credit hours of which must be in Theater, 18 credit hours in Communication Studies, and nine credit hours in methodology (tool) courses. In addition 24 credit hours of dissertation work are required for the Ph.D. degree. Course work outside the program must be germane to one of the program curriculum areas for the purposes of examination and dissertation research. Throughout the program of study, the student must maintain a 3.00 grade point average in all work taken. If the grade point average drops below the minimum, the student is placed on academic warning for the following two semesters. During the last half of the second semester of course work, the student's progress shall be reviewed by the advisory committee to determine continuation, change, or termination of the program. The advisory committee for each student shall be responsible for assembling the necessary information (grades, recommendations, progress in curriculum areas, etc.) for consideration in reaching the above decision.

Advisory Committee

A three (3) person advisory committee shall be established no later than the beginning of the second semester of graduate study to plan the program of study with each student. The chair of the committee shall act as the primary adviser and sign the graduate course request form. This advisory committee is responsible for certifying to the graduate director that the student has met all program requirements for admission to candidacy and has passed the Ph.D. preliminary examination.

Students selecting Theater as a curriculum concentration must take the following:

- Communication Studies Theater Concentration, 18 credit hours (must include):
  - CMST 501: Introduction to Communication Research (3 CH)
  - CMST 510: Seminar: Rhetoric Theory and Society (3 CH)
- Theater 24 credit hours (must include):
  - THEA 501: The Historical Avant Garde & Performance (3 CH)
  - THEA 504A: Performing Justice/Theory (3 CH)
  - THEA 504B: Performing and Producing Resistance (3 CH)
- Dissertation, 24 credit hours
- Methodology (tool), 9 credit hours

Total 75 credit hours

Preliminary Examination

The student must pass a preliminary examination on their program of study. The preparation and administration of the examination are determined by the advisory committee in consultation with the student. The examination is taken at the end of the course work.

Dissertation

Each student must register for at least 24 credit hours of dissertation credit in THEA 600. The dissertation director shall, upon consultation with the student, be responsible for setting up a dissertation committee, supervising the dissertation, and administering the final oral examination. The dissertation committee shall approve the dissertation prospectus and pass upon the completed dissertation and oral examination.

The Graduate School requires students who have not completed their dissertation to enroll in THEA 601 Continuing Enrollment until they complete the dissertation or withdraw from the program. Students who do not register for this class will be charged for all semesters before they may graduate.

Students are required to submit an electronic copy of the dissertation to the Graduate School and one bound copy to the School of Theater and Dance.

Theater Courses

THEA400 - Production Practicum for support of major department productions in all areas. Roles in department productions may fulfill requirement. Credit Hours: 1-2

THEA401A - Stage Management Study of the theories and skills required to successfully stage manage a theater production. Prerequisite: THEA 217 and THEA 218A or graduate standing, concurrent enrollment in THEA 401B required. Credit Hours: 2

THEA401B - Stage Management Lab Practical application of the theories and skills learned in the 401A course and applied on a department of theater production. Prerequisite: THEA 217 and THEA 218A or graduate standing, concurrent enrollment in THEA 401A required. Credit Hours: 1

THEA402 - Directing Studio Introduction to the art of directing through examination of various genres. An exploration of the fundamentals of directing culminating in scene work and studio presentation. Advanced students will approach the directing process from play selection through dramaturgy to production and through the context of contemporary directing styles. Prerequisites: THEA 217 and THEA 311A with grades of C or better. Credit Hours: 3

THEA403A - Advanced Movement for the Actor Advanced studies in stage movement with special attention to period styles. Prerequisite: THEA 303A, THEA 317A, THEA 317B. Credit Hours: 3

THEA403B - Advanced Voice for the Actor Advanced studies in voice with special attention to stage dialects and advanced vocal techniques. Prerequisite: THEA 303B, THEA 317A. Credit Hours: 3

THEA404 - Theater Management Discussion of legal and financial aspects concerning the professional and community theaters of the United States. Consideration of and practice in managerial activities of an educational theater including administration, purchasing, and accounting practices, direct sales, publicity, promotion and public relations. Credit Hours: 3

THEA406 - Properties Studio Beginning and advanced studio work in traditional and non-traditional crafts for theatrical events, including mask work, puppetry, stage furniture construction, upholstery, weaponry, armor, and special effects. Repeatable. Prerequisite: THEA 218A with a grade of C or better or graduate standing. Studio Fee: $60. Credit Hours: 3

THEA407 - Scene Design Technical and artistic aspects of scene design. Theory and practice. Prerequisite: THEA 218A, THEA 413 with a grade of C or better. Credit Hours: 3

THEA409 - Scene Painting Studio Studio work in basic and advanced scene painting techniques and materials. Projects include wood, drapery, foliage, marble, transparencies, scrim painting, dye painting, faux finishes, metal reflections, and murals. Repeatable. Prerequisite: THEA 218A or graduate standing. Studio fee: $65. Credit Hours: 2

THEA410 - Children's Theater Theory and practice in performing theater for children. Class activities include lectures on various aspects of production as well as producing a touring children's play for local area schools. Special approval needed from the instructor. Credit Hours: 9

THEA412 - Patterning and Draping for the Theater This course introduces the theatrical costume design and technical student to the basics of pattern development and construction techniques used to develop a 3-dimensional theatrical costume, with focus on giving the student a working knowledge of costume production, flat patterning, and draping techniques. Prerequisite: THEA 218C with a minimum grade of C or graduate standing. Studio fee: $25. Credit Hours: 2

THEA413 - Drafting for Theater Development of the student's skill in scenographic techniques including ground plans, sections, elevations, and detail construction drawings. Prerequisite: THEA 218A with a minimum grade of C or graduate standing. Up to 9 credits toward graduation. Credit Hours: 3

THEA414 - Costume Design Technical and artistic aspects of costume design. Development of the design process, understanding and use of color theory and fabric, and practice of costume drawing techniques. Prerequisite: THEA 218C with a minimum grade of C or graduate standing. Credit Hours: 3

THEA415A - Costume Crafts I This course focuses on advanced skills in costume technology and crafts. In this semester, a variety of fabric dyeing and fabric modification techniques are taught and practiced, culminating in a final project that incorporates several techniques in one. Prerequisite: THEA 218C with a grade of B or better or graduate standing. Craft fee: $50. Credit Hours: 2

THEA415B - Costume Crafts II This course focuses on advanced skills in costume technology and crafts. In this semester, techniques for setting and styling wigs, and techniques for millinery (making hats) are taught and practiced, culminating in a final project that combines both wig styling and millinery. Prerequisite: THEA 218C with a grade of B or better or graduate standing. Craft fee: $50. Credit Hours: 2

THEA415C - Costume Crafts III This course focuses on advanced skills in costume technology and crafts. In this semester, the theme of armor is explored as a variety of techniques for working with thermoplastics, foam and chainmail are taught and practiced, as well as a brief unit in jewelry making. The course culminates in a final project that incorporates several techniques in one. Prerequisite: THEA 218C with a grade of B or better or graduate standing. Craft fee: $50. Credit Hours: 2

THEA415D - Costume Crafts IV This course focuses on advanced skills in costume technology and crafts. In this semester, students will make a corset, and other period accessories. The course culminates in a final project that incorporates several techniques in one. Prerequisite: THEA 218C with a grade of B or better or graduate standing. Craft fee: $50. Credit Hours: 2

THEA416A - Structural Design for the Stage Part I An in-depth study of the art and practice of structural design for the stage including forces, stresses, strains, load analysis, geometric properties of materials and simple beam design. Prerequisite: THEA 218A with a minimum grade of C or graduate standing. Credit Hours: 3

THEA416B - Structural Design for the Stage Part II Continued study of the art and practice of structural design for the stage including beam design, column and tension member design and combined loading design for sawn lumber and steel materials. Prerequisite: THEA 218A (or graduate standing) and 416A with minimum grades of C or special approval needed from the instructor. Credit Hours: 3

THEA417 - Advanced Acting Utilization of the actor's process in the performance of various theories and styles of acting. May be repeated once for credit. Prerequisite: THEA 317B or graduate standing. Credit Hours: 3

THEA418 - Lighting Design Investigation of stage lighting design, theory and professional practice. Special attention to color theory and its application to stage lighting. Lecture/Laboratory. Prerequisite: THEA 218B (or graduate standing) and THEA 413 with grades of C or better. Credit Hours: 3

THEA419 - Technical Direction Advanced study of principles and procedures of scenic construction and stage rigging. Includes scene shop organization, materials, and specialized stage equipment; preparation for professional technical direction. Lecture and laboratory to be arranged. Prerequisite: THEA 218A (or graduate standing) and THEA 413 with grades of C or better. Credit Hours: 3

THEA423 - Musical Theater Dance II Developing and performing musical theater choreography using advanced jazz, tap, ballet, social and modern dance skills. Prerequisite: THEA 323 with a C or better or graduate standing. Credit Hours: 1

THEA424 - Audition Techniques Methods of auditioning for theater and musical theater. The course covers audition techniques for open calls, cold reading/singing, improvisation, interviews, as well as the development of an audition portfolio and the preparation of head shots and resumes. Prerequisite: THEA 217 with a grade of C or graduate standing. Credit Hours: 3

THEA425 - Metal Fabrication for Theater A study of the knowledge and practice of various welding processes and fabrication techniques for the stage as well as an understanding of the theater practitioner's responsibility to the quality and safety of their products. Prerequisite: THEA 218A with a grade of C or better or graduate standing. Studio fee: $40. Credit Hours: 3

THEA450 - Topical Seminar An intensive examination and application of selected areas of interest. Topics will vary and may include such areas as stage management, audition and interview, current political theater. Credit Hours: 1-9

THEA454 - American Theater The development of American theater from colonial times to the present. Includes a study of the American musical theater from preminstrels through contemporary music-drama. Credit Hours: 3

THEA455 - Dramaturgy An introduction to the theory and practice of dramaturgy, including a survey of contemporary critical theories as they apply to the pre-production work of the dramaturg. The student will apply methodologies studies to plays from the classical repertory and to the works of new playwrights. Prerequisite: THEA 311A with a minimum grade of C or graduate standing. Credit Hours: 3

THEA460 - Black Theater: Intersections of Culture and Performance (Same as AFR 420) This course will freely examine the intersections between African and African American Theater. It will study the origins, form and agenda of Black Theater by tracing the commonalities of culture and Performance between African and African American Theaters. Students will be exposed to seminal essays, topical plays and performances while they hone their own critical and creative skills. Credit Hours: 3

THEA500 - Theater Research Methods An introduction to the principles and methods of research and writing in theater with a focus on selected areas of specialization within the various degree programs. Required of all Masters Theater students. Restricted to Theater Majors. Special approval needed from the instructor. Credit Hours: 3

THEA501 - The Historical Avant Garde & Performance A survey of the historical avant garde throughout the 19th and 20th centuries through the study of documentary material, critical works, and plays. Individual reports, in class exercises, performance opportunities, and lectures provide focus on selected areas. Required reading encompasses a broad spectrum of subjects in order to demonstrate the political and aesthetic importance of a variety of the theatrical avant garde. Credit Hours: 3

THEA502 - Advanced Directing Studio Emphasis on practical directing problems and concerns of individual students through research, rehearsal and performance. Includes survey of directing theories and practices with laboratory application of directing techniques. Special approval needed from the instructor. Credit Hours: 3

THEA503 - New Play Development This is an interdisciplinary course meant for designers, directors, dramaturgs, and playwrights that prepares students for a prominent feature of the U.S. theatre landscape: the new play workshop. This ensconced entity, somewhere between a production and a casual reading, is an economic and artistic powerhouse, not just for playwrights, but for all theatre artists. This class imitates the methods and environments of the most prominent new play workshops in order to demystify a process that can be both artistically satisfying and lucrative for all theatre artists. Prerequisite: THEA 511A with a grade of C or better or concurrent enrollment allowed. Credit Hours: 1-3

THEA504A - Performing Justice/Theory (Same as WGSS 504A) Performance is more prevalent in society than ever before. Performance, in this class means: theatre, mass media, social media, entertainment, digital humanities, and everyday life. This course considers questions such as: How can performance help gender equality? How does literary, media, and performance theory relate to struggles for social justice? What does it mean to live in a "dramatized society"? Students will gain an understanding of the economic, psychological, and political strategies behind performance and theory that seeks to intervene in unjust social structures. Restricted to graduate standing or special approval from the instructor. Credit Hours: 3

THEA504B - Performing and Producing Resistance Beginning with Aristotle and the earliest foundations of Western performance, this course considers questions such as: How have artists resisted earlier performance theory? How have artists redefined performance in order to promote social justice? How have artists moved beyond performance onstage with actors in order to empower spectators? Students will gain an understanding of classical performance theory and subsequent resistant performance theories. Restricted to graduate standing or special approval from the instructor. Credit Hours: 3

THEA506 - The Collaborative Process The theory and practice of the collaborative processes involved in play production; how designers, technicians, directors and playwrights interact with and communicate to each other to work as a creative team. Activities involve both hypothetical and fully realized productions when appropriate. May be taken for up to 4 hours. Credit Hours: 2-4

THEA510 - Production Design Seminar Exploratory workshop experience in rendering techniques, creative problem solving, design aesthetics, and production philosophies. To be taken by graduate production design students in residence, each semester, with exceptions by consent of instructor. Credit Hours: 1

THEA511A - Playwriting I This course assumes basic writing knowledge. It advances techniques of structure and dialogue in playwriting. Written exercises are submitted and discussed to identify dramatic events. Students will self-produce several short plays in collaborative performances. Students will initiate development of a full-length play. Special approval needed from the instructor. Credit Hours: 3

THEA511B - Playwriting II This course continues to develop advanced techniques of structure and dialogue in playwriting. Students will examine canonical plays to understand the tools used by the playwrights. Students will write short plays and self-produce several short plays in collaborative performances Students will write a full-length play. Prerequisite: THEA 511A. Special approval needed from the instructor. Credit Hours: 3

THEA512 - Advanced Costume Construction This course focuses on advanced skills in the areas of cutting and draping for the theater. A variety of techniques will be taught, including but not limited to, flat pattering, bias draping, tailoring, and historical construction techniques. Prerequisite: THEA 218C, THEA 412 or special approval needed from the instructor. Credit Hours: 2

THEA516 - Advanced Theater Design and Production An advanced studio-based study of the theories and practices of modern production and design with particular emphasis on the interaction of the sub-disciplines of scenic, costume, light, sound design, and technical production as well as the collaborative nature of theatrical production. Special approval needed from the instructor. Credit Hours: 2

THEA520A - Period Style for Theater I A survey of the costumes, architecture, furniture, decorative styles and motifs of major periods and countries relating to western culture and theater. Egyptian to the Renaissance. Credit Hours: 3

THEA520B - Period Style for Theater II A survey of the costumes, architecture, furniture, decorative styles and motifs of major periods and countries relating to western culture and theater. Late Renaissance to 20th Century. Prerequisite: THEA 520A or special approval needed from the instructor. Credit Hours: 3

THEA522 - SIU Summer Theater Practical experience in summer stock play production. Performance or technical work in SIU Summer Theater only. Special approval needed from the instructor. Credit Hours: 1-6

THEA525 - Contemporary Experiments in Drama By studying contemporary literary theory and applying these critical tenets to new American plays, students develop tools to use in reading, understanding and writing plays in unconventional, non-traditional styles. Course work includes extensive reading of both essays and plays, discussing these matters, preparing reports and writing a play. Special approval needed from the instructor. Credit Hours: 3

THEA530 - Independent Study Independent research on selected problems. A maximum of three credit hours may be taken for a single project. Special approval needed from the instructor. Credit Hours: 1-3

THEA550 - Topical Seminar In-depth studies of topics of special interest to advanced students concerning individual or groups of playwrights, directors, designers, and their techniques and theories. Topic is determined in advance. Special approval needed from the instructor. Credit Hours: 2

THEA560 - Professional Work Experience Credit may be granted for professional work experience prior to acceptance into the program. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-21

THEA561 - Theater Internship Credit may be granted for internship at professional theaters, training programs, or studios. Special approval needed from the instructor. Graded S/U only. Credit Hours: 1-12

THEA599 - Thesis Capstone course for Master's degree. Credit Hours: 1-6

THEA600 - Dissertation Minimum of 24 hours to be earned for the Doctor of Philosophy degree. Credit Hours: 1-16

THEA601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Theater Faculty

Bogumil, Mary L., Associate Professor, Ph.D., University of South Florida, 1988.

Clark, Darryl, Assistant Professor, M.F.A. in Dance, State University of New York College at Brockport, 2005; 2016. Musical theater dance.

Fagerholm, Thomas, Associate Professor, M.F.A., Minnesota State University, Mankato, 2012; 2014. Technical direction and production.

Fletcher, Anne, Professor, Distinguished Scholar, Ph.D., Tufts University, 1992; 2001. Theater history, dramaturgy, Eugene O'Neil.

Juntunen, Jacob, Associate Professor, Ph.D., Northwestern University, 2007; 2012. Playwriting/dramatic literature and criticism.

Neuman-Lambert, Gennie, Assistant Professor, M.F.A., Rutgers University, 2018; 2020. Scenic design.

Ojewuyi, Olusegun, Professor and Interim Chair, M. A., University of Ibadan, 1987, Nigeria. M.F.A., Yale University, 1998. Directing, acting, African, and African American theater.

Patrick Benson, Susan, Associate Professor, M.F.A., Rutgers University, 1995; 2006. Voice and speech.

Pivovarnik, Jane, S., Assistant Professor of Practice, Southern Illinois University Carbondale, 2012; 2020.

Varns, Mark, Professor, M.F.A., University of Missouri-Kansas City, 1990; 1996. Lighting design.

Zea, Wendi, Associate Professor, M.F.A., Kent State University, 2006; 2009. Costume design.

Emeriti Faculty

Moe, Christian H., Professor, Emeritus, Ph.D., Cornell University, 1958.

Naversen, Ronald, Professor, Emeritus, Ph.D., Southern Illinois University, 1990.

Women, Gender, and Sexuality Studies

There is no graduate program in Women, Gender, and Sexuality Studies.

Certificate in Women, Gender, and Sexuality Studies

The purpose of the graduate certificate in Women, Gender, and Sexuality Studies is to meet the demand for formal recognition of graduate level credentials in WGSS, and to enhance and broaden the perspectives of graduate students from various related fields. The program requires 18 credit hours of coursework. 12 credit hours must be at the 500-level, which includes WGSS 596 and WGSS 597. Six credit hours must be taken outside the student's major discipline. The student must be currently enrolled in a graduate degree program at SIUC or an individual holding a bachelor's degree and admitted to the Graduate School (non-declared).

The following graduate programs work closely as partners with WGSS Graduate Certificates:

College of Business and Analytics:

- School of Management and Marketing

College of Health and Human Sciences:

- School of Psychological and Behavioral Sciences

College of Liberal Arts:

- Communication Studies
- History
- Political Science
- Sociology

School of Education:

- Educational Administration and Higher Education
- Organizational Learning, Innovation, and Development

School of Law

For more information, contact:
Women, Gender, and Sexuality Studies
Southern Illinois University Carbondale MC 6518
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Women, Gender, and Sexuality Studies Courses

WGSS400 - Sex and Scandal in Film and Literature Film, literature, and media-based exploration of historical and contemporary texts that feature sex and scandal. Using relevant cultural and literary criticism, this class explores how "scandalous" sexualities have their own specific histories and deployments. Topics to be considered include the meaning of the word "scandal" and how different sexual relationships can appear "scandalous" in a given context. The course will question how sex and scandal intersect with race, ethnicity, nationality, religion, class, ability, and more. Credit Hours: 3

WGSS401 - Introduction to Transgender Studies Global study of transgender representation in film, media, literature, and performance. This course utilizes a cultural theory approach and draws from the work of scholars, activists, and artists within the areas of transgender, queer, feminist, and disability studies. Credit Hours: 3

WGSS406A - Gender, Family and Sexuality in Pre-Modern Europe (Same as HIST 406A) A discussion of the history of the family, creation of gender roles, and importance of sexuality from medieval times to the French Revolution. Credit Hours: 3

WGSS406B - Gender, Family and Sexuality in Modern Europe (Same as HIST 406B) From the French Revolution. A discussion of the history of family, creation of gender roles, and importance of sexuality from the French Revolution to the present. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

WGSS407 - Sociology of Sexuality (Same as SOC 407) Examines a range of social issues related to human sexuality and the interaction between sexuality and other social processes. Emphasis is on the relevant concepts, theories, and methods in the field of sexual studies, the social and historical construction of sexuality, and the ways in which social characteristics shape sexual behaviors and desires, sexual variation, including its causes and consequences, how basic social institutions affect the

rules governing sexuality, the major moral and political controversies that surround sexuality, and the "dark side" of sexual life. Credit Hours: 3

WGSS410 - Transcending Gender (Same as ANTH 410L) How do humans become male and female in different societies? Can men become women and women become men? What other gender possibilities exist? Is male dominance universal? What are the sources of male and female power and resistance? Do women have a separate culture? What are the relationships between gender, militarism, and war? These and other questions will be examined in cross-cultural perspective. Credit Hours: 3

WGSS411 - Human Sexuality (Same as PH 410) Provides detailed information on dimensions of sexuality; characteristics of healthy sexuality; anatomy and physiology; gender roles; relationships; sexually transmitted infections/diseases; contraceptive issues and concerns; sexual victimizations; and sexuality through the life cycle. Credit Hours: 3

WGSS415 - Topics in Gender, Sexuality, and Communication (Same as CMST 415) An exploration of advanced theories and research in gender and sexuality from communication perspectives. Course may be repeated when topics vary. Credit Hours: 3

WGSS416 - Black Feminist Thought as Theory and Praxis Explore the roots, contemporary manifestations, and current embodiments of Black feminist thought. Explore the works of Black women to engage in critical thinking and thoughtful dialogue that positions the valuable knowledge, experiences and perspectives of women of color at the center of inquiry while simultaneously discovering spaces for multicultural alliances. Credit Hours: 3

WGSS426 - Gender, Culture and Language (Same as ANTH 426 and LING 426) This course is designed for students who have had some exposure to gender studies. It will focus on readings in language and gender in the fields of anthropological and socio-linguistics. Issues to be addressed are the differences between language use by men/boys and women/girls, how these differences are embedded in other cultural practices, and the various methodologies and theories that have been used to study gendered communication. Credit Hours: 3

WGSS437 - Lesbian and Gay History in the Modern United States (Same as HIST 437) This course explores the social, political, and cultural history of lesbians, gay men, and other sexual and gender minorities in the United States from the turn of the twentieth century to the present. Themes to be taken up in the class include: the emergence of heterosexuality and homosexuality as distinct categories of identity; the intersection between sexual identity and identities of race, class, gender, and ethnicity; the relationship between homosexuality and transgenderism; the movement for gay liberation; the creation of lesbian and gay urban and rural subcultures; representations of homosexuality in popular culture; anti-gay backlash; and AIDS. Credit Hours: 3

WGSS438 - Women and the Law (Same as POLS 438) The course is an advanced seminar in public law with a focus on gender, law, and society. The course will engage with issues in feminist legal practice and the development of legal theories regarding gender. We will interrogate the relationship between theory and practice and the ways in which feminist jurisprudence has taken shape in the dynamics of this relationship. POLS 114 and 230 recommended prerequisites. Credit Hours: 3

WGSS440 - Queer Visual Culture (Same as CIN 469) Course discusses aspects of the aesthetics, history, theory, and politics of media representations of gender and sexuality. Cultural texts from one or a combination of media forms, genres, historical periods, and platforms will inform the historical and theoretical consideration of media representations of gender and sexual variation with a special interest on their bearings upon the present moment. May be repeated if topics vary. Credit Hours: 3

WGSS442 - Sociology of Gender (Same as SOC 423) Examines social science theory and research on gender issues and contemporary roles of men and women. The impact of gender on social life is examined on the micro level, in work and family roles, in social institutions, and at the global, cross-cultural level. Credit Hours: 3

WGSS446 - Gender and Global Politics (Same as POLS 456) An advance course examining gender systems and women's situations across cultures and countries. This course also studies the impact globalization has had on gender issues by looking at women's activism at international and transnational

levels. Topics covered include women's political representation, gender and culture, women's social movements, gender and development, and gendered policy issues. Credit Hours: 3

WGSS448 - Gender and Family in Modern US History (Same as HIST 448) This course explores the history of gender and the family in the United States from the late 19th century to the present. Themes to be explored include: the family and the state, motherhood, race and family life, and the role of the "family" in national politics. Credit Hours: 3

WGSS450A - Women in Music (Same as MUS 450A) Explores the creative contributions of women in music, examining women's participation across a range of genres, cultural/geographic areas, and time periods. Restricted to 3rd Year/4th Year/graduate music major or consent of instructor. Credit Hours: 3

WGSS452A - Traditions of Uppity Women's Blues (Same as AFR 452A and MUS 452A) Examines the tradition of "uppity" women's blues from the so-called "classic" blues singers of the 19th century (Gertrude "Ma" Rainey, Bessie Smith, Ida Cox, etc.) to the contemporary blues of Saffire, Denise LaSalle and others. Explores ways blues women challenge conventions of gender and sexuality, racism, sexism, classism, and homophobia. Restricted to 3rd Year/4th Year/graduate music major or consent of instructor. Credit Hours: 3

WGSS456A - Feminist Philosophy (Same as PHIL 446A) A general survey of feminist theory and philosophical perspectives. Credit Hours: 3

WGSS456B - Special Topics in Feminist Philosophy (Same as PHIL 446B) A special area in feminist philosophy explored in depth, such as Feminist Ethics, French Feminism, Feminist Philosophy of Science, etc. Credit Hours: 3

WGSS456C - Women Philosophers (Same as PHIL 446C) Explores the work of one or more specific women philosophers, for example Hannah Arendt, Simone DeBeauvoir, etc. Credit Hours: 3

WGSS464 - Audio Documentary & Diversity (Same as RTD 464) The purpose of this course is the creation of short and long form audio documentaries by students, regardless of production background. It will introduce students to basic production techniques and diversity considerations during the making of a documentary. This course uses qualitative methods to investigate an issue or document an event, with an emphasis on observation and interview techniques. Topics will explore the role of gender, race, ethnicity, and class during the planning, gathering, and production stages of the documentary. Course open to non-majors. Lab fee: $55. Credit Hours: 3

WGSS465 - History of Sexuality (Same as HIST 465) Comprehensive survey of sexuality from the early modern period to the present. Examines social trends, politics, and cultural debates over various forms of sexuality. Students will engage in discussion, research, and writing. Emphasis varies by instructor. Credit Hours: 3

WGSS470 - College Student Sexuality (Same as EAHE 470) Seminar designed to provide students with a strong grounding in the field of college student sexuality and sexual identity, covering the lived experiences of U.S. college students, the construction of sexualized collegiate identities through U.S. history, and how institutions of higher education have attempted to regulate, control, and (intentionally as well as inadvertently) effect college student sexuality. Credit Hours: 3

WGSS476 - Women, Crime, and Justice (Same as CCJ 460 and SOC 461) A study of women as offenders, as victims, and as workers in the criminal justice system. Credit Hours: 3

WGSS489 - Women, State and Religion in the Middle East (Same as HIST 489) Following an introduction to the question of women in Islamic law and Islamic History, this course will examine the changing status and experiences of women in a number of Middle Eastern countries in the 20th century, focusing on Egypt, Iran, and Turkey. Major themes will include legal, social, and political rights, participation in social and economic life, cultural and literary production, and recent secular and Islamist women's movements. Credit Hours: 3

WGSS493 - Individual Research Exploration of a research project under the supervision of a faculty member having graduate faculty status. The project must result in a written research report, which is filed with the Director of Women, Gender, and Sexuality Studies. Restricted to 4th Year standing. Special

approval needed from the instructor and Director of Women, Gender, and Sexuality Studies. Credit Hours: 2-6

WGSS494 - Community Service This course gives students the opportunity to serve the community through direct engagement with organizations and services that center issues of gender and sexuality. The setting may be in one's own field of study or in general content areas recognized by the Women, Gender, and Sexuality Studies Program. Students will devise their service plan in communication with the Coordinator of the WGSS program. Prerequisite: WGSS 201. Credit Hours: 1-3

WGSS496 - Advanced Special Topics in LGBTQ+ Studies Advanced study of a topic of interest in LGBTQ+ Studies not offered through regular course listings. Credit Hours: 3

WGSS497 - Independent Study in LGBTQ+ Studies Supervised readings in selected content areas in LGBTQ+ studies. This is a capstone, synthesizing experience for students in LGBTQ+ studies. Prerequisite: WGSS 201. Credit Hours: 3

WGSS504A - Performing Justice/Theory (Same as THEA 504A) Performance is more prevalent in society than ever before. Performance, in this class means: theatre, mass media, social media, entertainment, digital humanities, and everyday life. This course considers questions such as: How can performance help gender equality? How does literary, media, and performance theory relate to struggles for social justice? What does it mean to live in a "dramatized society"? Students will gain an understanding of the economic, psychological, and political strategies behind performance and theory that seeks to intervene in unjust social structures. Restricted to graduate standing or special approval from the instructor. Credit Hours: 3

WGSS507 - Seminar in the Sociology of Sexuality (Same as SOC 507) Examines the emerging body of work in the fast-growing field of sexuality studies. While the course focuses on sociological research, it takes a few side trips into other disciplines. We begin by discussing the evolution of theory and methodology in the sexual sciences. After briefly considering the contributions of early sexologists and the work of Sigmund Freud, we will survey the sociology of sexuality from its beginnings in quantitative research, through classical sociological theory, social constructionism, and feminism. We'll then examine Foucault's radical rethinking of sexuality and grapple with the challenges of queer theory. The second part of the course will take up several substantive areas in the sociology of sexuality, drawing on cutting edge quantitative and qualitative research. Credit Hours: 3

WGSS515 - Studies in Gender, Sexuality, and Communication (Same as CMST 515) How communicative activity creates and sustains human beings as gendered. Emphasis on gaining familiarity with contemporary research on gendering from a particular perspective (e.g., ethnography, performance, phenomenology, qualitative methods, rhetorical criticism). May be repeated when perspective varies. Perspective announced prior to each offering. Credit Hours: 3

WGSS525 - Theorizing the Body (Same as ANTH 525) This seminar explores a broad range of theoretical readings centering on the human body. Once the province of medical science and certain schools of philosophy, recent research in the social sciences and the humanities position "the body" as a primary site of socialization, gendering, social control. Credit Hours: 3

WGSS535 - Seminar: Gender in Higher Education (Same as EAHE 535I) A seminar for specialized study of administrative practice and policy in gender in higher education. Credit Hours: 1-3

WGSS542 - Seminar on the Family (Same as SOC 542) Overview of the theoretical approaches, substantive issues, and techniques of research and measurement in the study of American family life. Approaches include structural functionalism, conflict theory, and the feminist critique. Among the substantive topics are family roles and relationships, kinship, relationships of the family to other institutions and family change. Credit Hours: 3

WGSS544 - Sociology of Gender (Same as SOC 544) Examines major theories, themes, and research methods on the intersection of gender, race, class and sexuality. Topics may include: construction of gender, race, class and sexual identities; work; social movement; intersection of family and work; parenting and reproduction; historical and cross-national dimensions. Credit Hours: 3

WGSS545 - Gender and Work (Same as SOC 545) This course is designed to investigate how gender structures the workplace, as well as how men and women both reproduce and negotiate gender at work. Focusing on select topics, we will develop an understanding of workplaces as gendered organizations and discuss sex segregation, wage inequality, the glass ceiling, the glass escalator, sex work, men and women in nontraditional occupations, the body at work, emotional labor, aesthetic labor, immigration and work, globalization, and unemployment and welfare. Also, this class will take an intersectional approach to analyzing and discussing issues of gender inequality at work; meaning, we will take seriously how gender intersects with race, ethnicity, class, and sexuality to shape both inequality and resistance at work. Credit Hours: 3

WGSS546 - Language, Gender and Sexuality: Anthropological Approaches (Same as ANTH 546, LING 545) This course examines the study of language in society with a particular focus on how linguistic practices are part of the construction of gender and sexual identities, ideologies, social categories, and discourses. Anthropological theories applied to the study of language, gender, and sexuality will be covered along with a variety of methodological approaches. Credit Hours: 3

WGSS547 - Gender and Social Change (Same as SOC 547) This graduate seminar is a sociology of gender course that focuses on changes in the subfield itself and in peoples' lived experiences in terms of gender, gender relations, and gender stratification. Readings and discussions will trace the development of the sociology of gender over the last several decades. We will discuss how ideas and theories have changed over the years including changes in concepts and in how sociologists define, problematize, and theorize about sex and gender as traits, identities, relations, structures, and systems. We will also explore 'objective' or actual change (or lack of change) related to gender in individuals, groups, and societies. Credit Hours: 3

WGSS550 - The Psychological Construction of Gender (Same as PSYC 550) This course will focus on the psychology of gender within a feminist perspective and using a feminist approach. The term feminism, as used here, primarily implies that we will consider information and ideas for more diverse than simple empirical data. In our reading and discussion, we will consider politics, discrimination, the history of science, the history of patriarchy, the development of theory and ideas in general and the development of feminism in particular, and objective versus subjective views of science, and within these contexts, we will consider and study the psychology of gender. Credit Hours: 3

WGSS560 - Gender and Sport: Sociological and Psychological Perspectives (Same as KIN 560) This course explores psychological and sociological dimensions underlying the concept of gender and critically examines how gender relates to sport and physical activity. Students will be introduced to non-traditional as well as traditional research that addresses the issue of gender in various physical activity contexts. Credit Hours: 3

WGSS565 - Continental Feminist Philosophy (Same as PHIL 565) An examination of major figures and problems in continental feminism, focusing on metaphysical, ethical, political, and aesthetic theories in the works of Beauvoir, Kristeva, Irigaray, Butler, and Kofman. Credit Hours: 3

WGSS575 - Women in Higher Education (Same as EAHE 575) The goal of this course is to provide an overview of women in higher education. Topics that will be considered are: feminism's impact on women in higher education; the division of labor for women (including faculty and professional staff positions); historical and sociological perspectives of access to higher education including curriculum and pedagogy. Credit Hours: 3

WGSS576 - College Men and Masculinities (Same as EAHE 576) This course is a readings-based seminar covering concepts of masculinity as demonstrated by collegiate men in the United States. The readings in this course cover cultural as well as identity elements of what being a "college man" means (and how that definition has changed over time and contexts). The readings consist of historical, contemporary and theoretical scholarship concerning collegiate masculinity. Credit Hours: 3

WGSS590 - Readings Supervised readings in selected advanced subjects. Special approval needed from the instructor and the Director of Women, Gender, and Sexuality Studies. Credit Hours: 1-3

WGSS591 - Special Topics Concentration on a topic of interest not offered through the regular course listings. Special approval needed from the instructor and the Director of Women, Gender, and Sexuality Studies. Credit Hours: 1-3

WGSS592 - Gender and Sexuality in Times of Pandemic This course explores how pandemics affect the social construction of race, gender, sexuality, and identity. Students will discuss the role of religion in health care and science and how women in religious contexts were primary caretakers during the Plagues, the Flu of 1918-1920, and the polio epidemic. The course will consider how the burden of care falls on women and sexual minorities in churches, mosques, synagogues, indigenous religious spaces and affiliated organizations in all times of public health crises, including during the Covid-19 pandemic. Students will also learn how religion has played both a divisive and positive role in the prevention and care of HIV/AIDS, particularly for Black, Indigenous, and People of Color (BIPOC) communities. The course will consider research from the fields of medicine, history, English, political theory, sociology, environmental humanities, and cultural theory. Credit Hours: 3

WGSS593 - Introduction to Critical Masculinity Studies Critical examination of masculinity in a global context. The course will explore the constructed nature of masculinity at the intersections of race, sexuality, class, national, and religious identifications. Takes an interdisciplinary approach and includes texts from the fields of history, sociology, English, film and media studies, and the visual arts. Credit Hours: 3

WGSS595 - Practicum in Educational Women, Gender, and Sexuality Studies This course provides students with supervision in their work toward course development in Women, Gender and Sexuality Studies. The instructor of record will meet with practicum members on a regular basis, and, together, they will work towards the research and syllabus construction necessary for a WGSS course. Pedagogical strategies will also be covered. Must have consent of the Director of Women, Gender, and Sexuality Studies. Graded by S/U only. Credit Hours: 1-3

WGSS596 - Advanced Feminist Theories This course introduces students to the past, present, and potential future of feminism and its various permutations. Readings are designed to stress historical, intellectual, and contemporary issues in order to inspire in-class discussion and to provide foundations for written assignments. Emphasis varies by instructor. Credit Hours: 3

WGSS597 - Graduate Pro-Seminar in Women, Gender, and Sexuality Studies This proseminar introduces graduate students to the field of Women, Gender, and Sexuality Studies (WGSS). The approach is both interdisciplinary as well as multidisciplinary. The course guides students through a process by which they build a detailed map of the intersection between their course of study and the field of WGSS. Emphasis varies by instructor. Credit Hours: 3

Women, Gender, and Sexuality Studies Faculty

For more information, contact:

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Zoology

The School of Biological Sciences offers graduate programs in Zoology leading to the Master of Science, Professional Science Masters, and Doctor of Philosophy degrees. The Professional Science Masters in Zoology is awarded on the basis of demonstrated scholarship, with emphasis on basic ecological knowledge, managing habitat for wildlife, and constituent consensus building. The Master of Science in Zoology and Doctor of Philosophy in Zoology degrees are awarded on the basis of demonstrated scholarship, with an emphasis on the ability to organize, conduct, and report original research. The

program's graduate program is organized around five disciplinary areas: ecology & ecosystem studies; environmental toxicology; fisheries biology & aquaculture; genetics, evolution and population biology; and wildlife ecology & management. These research groups draw heavily upon the expertise of faculty members affiliated with SIUC's Center for Fisheries, Aquaculture, and Aquatic Sciences and the Cooperative Wildlife Research Laboratory. Graduate research in Zoology is facilitated by SIUC's geographic location, notably its proximity to extensive national forests, wildlife refuges, state parks, and other natural areas of diverse physiography.

Admission

Application forms can be obtained via the program webpage (zoology.siu.edu/graduate/apply/). A completed program application includes: the form, transcripts of all previous college credits, an official score report for the Graduate Record Examination (GRE) General Test, and three letters of evaluation that address the applicant's academic abilities. A nonrefundable application fee must be submitted with the program application form. Applicants pay this fee when applying electronically to the Graduate School. Students who wish to be considered for a University fellowship must have a complete application on file by December 1. There are no other application deadlines, but early contact with the program is encouraged.

Applicants for P.S.M. in Zoology, M.S. in Zoology, and Ph.D. in Zoology programs must fulfill all admissions requirements of the Graduate School. Inquiries about Zoology graduate programs should be made to the Director of Graduate Studies in Zoology. Prospective applicants are strongly encouraged to make contact with faculty members in their area of research interest prior to submitting an application.

Applicants to the P.S.M. in Zoology with a concentration in Wildlife Administration and Management program must possess the following academic background: 24 credit hours (or equivalent) in courses covering the basic principles of zoology (including animal diversity, ecology, and evolution); 9 credit hours of physical sciences (physics, chemistry, soil science, geology — at least 2 disciplines must be represented); one year of college mathematics including college algebra and trigonometry (calculus and statistics are also desirable); be within 6 credit hours of meeting class requirements for a Certified Wildlife Biologist (details can be found on The Wildlife Society web page (wildlife.org/) after completion of program course requirements; an undergraduate grade point average of at least 3.0 (*A*=4.0). Applicants who do not meet these requirements will be considered on individual merit.

Applicants to the M.S. in Zoology program must possess the following academic background: 24 credit hours (or equivalent) in courses covering the basic principles of zoology (including animal diversity, genetics, ecology, and evolution); one year of college chemistry (organic and biochemistry are also desirable); one year of college mathematics including college algebra and trigonometry (calculus and statistics are also desirable); an undergraduate grade point average of at least 2.70 (*A*=4.0). Applicants with a GPA less than 2.70 will be considered on individual merit.

Applicants for the Ph.D. in Zoology degree must have a solid background in biological science, hold a master's degree, and have a grade point average in graduate work of 3.25 or above. Applicants with a graduate GPA less than 3.25 will be considered on individual merit. Direct entry to the Ph.D. in Zoology program for students with only a bachelor's degree, or accelerated entry from the M.S. in Zoology program, is possible for students demonstrating exceptional potential.

Advisement and Progress Toward Degree

During the admission process and prior to registration, a student should consult with faculty members representing his or her area of interest to identify an advisor. Advisors will be assigned formally by the Director of Graduate Studies upon admission. A change in advisor later in the program must be coordinated and approved by the Director of Graduate Studies.

Each M.S. in Zoology student, in consultation with the advisor, must assemble an advisory committee to be approved by the Director of Graduate Studies before the end of the first semester of enrollment. For the M.S. in Zoology degree, the committee shall consist of at least three graduate faculty members, one of whom may be from outside the program, with the advisor serving as chair. For the Ph.D. in Zoology degree, the advisory committee shall consist of five graduate faculty members, one of whom must be from outside the program, with the advisor serving as chair. A program of study must be approved by the advisory committee and submitted to the Director of Graduate Studies no later than second semester of enrollment. A research proposal must be approved by the advisory committee and submitted to the

Director of Graduate Studies no later than the third semester. Students may not register for ZOOL 599 or ZOOL 600 before their proposal is approved.

Master of Science (M.S.) in Zoology

All requirements of the Graduate School must be satisfied. At least 30 hours of graduate credit (15 credit hours at the 500-level) is required beyond the bachelor's degree, including 21 credit hours of graded coursework, two credit hours of ZOOL 589, six credit hours of ZOOL 599, and two or more courses in a specific area representing the research tool. A grade point average of 3.00 in graduate coursework must be maintained. Failure to meet this requirement will result in academic probation and loss of financial support from the program and School.

Thesis

Students must prepare and defend a thesis based on the results of original research. The nature of the research is developed by the student in consultation with the advisor and advisory committee. The thesis is evaluated by the advisory committee and must be successfully defended before graduation. The defense consists of a presentation of thesis results in public seminar, followed by a closed session of oral evaluation by the advisory committee. A final version of the thesis must be approved by the advisory committee, the Director of Graduate Studies, the School Director, and the Graduate School. M.S. in Zoology candidates must follow all Graduate School procedures in applying for graduation and deposit one bound copy of their thesis with the program.

Professional Science Masters (P.S.M.) in Zoology

All requirements of the Graduate School must be satisfied. At least 30 hours of graduate credit (13 credit hours at the 500 level) is required beyond the bachelor's degree, including 24 credit hours of graded courses required by the program. A grade point average of 3.2 in graduate coursework must be maintained. Failure to meet this requirement will result in academic probation.

A capstone project consisting of a grant proposal presented to the agency providing the summer internship and approved by the Program Director must be completed prior to graduation.

Doctor of Philosophy (Ph.D.) in Zoology

All requirements of the Graduate School must be satisfied. Students entering the Ph.D. in Zoology program are expected to have taken courses in the broad areas of animal diversity & evolution, ecology, and cell biology & genetics. Admission to the Ph.D. in Zoology program requires two courses in two of these areas and three courses in the third. Students may be admitted with deficiencies, but must acquire the necessary coursework as part of their doctoral studies.

There is no minimum credit-hour requirement beyond the Graduate School's residency and dissertation requirements. A student, in consultation with his or her advisory committee, prepares a program of study that includes courses (including two semesters of ZOOL 589), seminars, and research. A research tool, consisting of at least two courses in a specific subject area, is required. A 3.25 grade point average in graduate coursework must be maintained. Failure to meet this requirement will result in loss of financial support from the program and School.

Preliminary Examinations

Written and oral examinations are taken after the tool requirement and major portion of any other formal coursework are completed, usually at the end of the second year of graduate study. The examinations focus on the student's area of research expertise as defined by the student, the advisor, and the advisory committee, and approved by the Director of Graduate Studies and the School Director. Administration and evaluation of these examinations is governed by the program's Preliminary Examination Policy. Students must pass both preliminary examinations to advance to candidacy.

Dissertation

Students must prepare and defend a dissertation based on the results of original research. The nature of the research is developed by the student in consultation with the advisor and advisory committee. Students must register for at least 24 credit hours of ZOOL 600 Research and Dissertation (only six credit hours are permitted prior to candidacy). The dissertation is evaluated by the advisory committee.

Final Examination

With the approval of the advisory committee, the candidate requests the Director of Graduate Studies to schedule a dissertation defense. The defense consists of a presentation of dissertation results in a public seminar, followed by a closed session of oral evaluation of the student's dissertation research by the advisory committee. A final version of the dissertation must be approved by the advisory committee, the Director of Graduate Studies, the School Director, and the Graduate School.

Graduation

Ph.D. in Zoology candidates must follow all Graduate School procedures in applying for graduation and deposit one bound copy of their dissertation with the program.

Ecology Concentration

Students opting to declare Ecology as a concentration shall follow the same program as students in the Ph.D. in Zoology degree program that do not declare a concentration subject to the following: The Seminar in Ecology (PLB 589A) or equivalent (equivalent agreed upon by the student's committee) must be taken once each year until a student achieves candidacy. The research tool shall be statistics. The student's advisory committee shall consist of at least two members from outside of the Zoology program.

Zoology Courses

ZOOL403 - Bee Identification Short Course Pollinator diversity and conservation is a growing environmental concern for state and federal land managers, private industry, NGO, and municipalities. However, studies and management of pollinators are hampered by a shortage of taxonomic expertise in hyper-diverse insect taxa such as bees, which number over 800 species in the eastern U.S., over 4,000 species nationwide, and over 20,000 species worldwide. Therefore, taxonomic identification of major groups of pollinating insects is both a marketable job skill and valuable research tool. The course is designed to introduce students to the biology and identification of bees, with a focus on the bee diversity of the eastern U.S. The course will provide the necessary background in bee morphology and ecology to allow students to use traditional dichotomous keys, interactive keys, and field guides to identify common families, genera, and species of bees. Lab fee: $50. Credit Hours: 2

ZOOL405 - Systematic Biology Estimation, analysis, and interpretation of phylogenetic trees; concepts, delimitation, and description of species; biological taxonomy and systems of classification; application of phylogenetics to the study of evolution. Prerequisites: BIOL 304; MATH 106 or 108 with grades of C- or better. Credit Hours: 3

ZOOL407 - Parasitology Principles, collection, identification, morphology, life histories, and control measures. Overview of the mechanisms and patterns of host-parasite interactions. Two lectures and two 2-hour laboratories per week. Prerequisite: ANTH 240A, MICR 301, PHSL 301 or ZOOL 220, with a grade of C- or better. Special approval needed from the instructor. Laboratory/Field Trip fee: $15. Credit Hours: 4. Credit Hours: 4

ZOOL408 - Herpetology Taxonomic groups, identification, morphology, and natural history of amphibians and reptiles. Two lectures and one 2-hour laboratory per week. Prerequisite: ZOOL 220 with a grade of C- or better. Laboratory/Field Trip fee: $15. Credit Hours: 3

ZOOL410 - Conservation Biology An introduction to patterns of global biodiversity and threats to that diversity. Course emphasizes how principles from numerous biological disciplines are involved in conserving and managing biodiversity, and how social, economic, and political factors affect conservation strategies. Prerequisites: BIOL 307 and MATH 106 or 108 with grades of C- or better. Credit Hours: 3

ZOOL411 - Environmental Risk Assessment Risk assessment can be defined as the process of assigning magnitudes and probabilities to the adverse effects of human activities or natural catastrophes. Prerequisites: BIOL 307 and CHEM 340 with grades of C- or better. Credit Hours: 3

ZOOL413 - The Invertebrates Structure, phylogeny, distinguishing features and habitats of the invertebrates. Two lectures and one 2-hour laboratory per week. Prerequisite: ZOOL 220. Laboratory/ Field Trip fee: $15. Credit Hours: 3

ZOOL414 - Freshwater Invertebrates Taxonomic groups, identification, distribution, and habitats of the North American freshwater invertebrate fauna. Two lectures, two 2-hour laboratories per week. Prerequisite: ZOOL 220. Laboratory/Field Trip fee: $15. Credit Hours: 4

ZOOL415 - Limnology (Same as PLB 416) Lakes and inland waters; the organisms living in them, and the factors affecting these organisms. Two lectures and one 4-hour laboratory alternate weeks. Prerequisite: BIOL 307 with a grade of C- or better. Laboratory/Field Trip fee: $15. Credit Hours: 3

ZOOL425 - Invertebrate Paleontology and Paleoecology Concepts of paleontology and paleoecology. Emphasis on functional morphology, lifestyles and habitats of fossil invertebrates and algae. The nature and evolution of marine and coastal paleocommunities. The effects of extinction events on paleocommunities and biodiversity. Laboratory. Field trips required. Prerequisite: GEOL 325 or ZOOL 220 with a grade of C- or better. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed $199. Credit Hours: 3. Credit Hours: 3

ZOOL426 - Comparative Endocrinology (Same as ANS 426, PHSL 426) Comparison of mechanisms influencing hormone release, hormone biosynthesis, and the effects of hormones on target tissues, including mechanisms of transport, receptor kinetics, and signal transduction. Prerequisites: ANS 331 or ZOOL 220 or PHSL 310 with a grade of C-. Laboratory/Field Trip fee: $15. Credit Hours: 3

ZOOL432 - Principles of Toxicology This course will introduce students to the main topics in the field of toxicology. The emphasis will be on understanding physiological, biochemical, and molecular mechanisms of toxicity. Prerequisites: BIOL 211, BIOL 212, and BIOL 213 with grades of C- or better. Credit Hours: 3

ZOOL433 - Comparative Animal Physiology (Same as PHSL 433) Variations of physiological processes in animal phyla, comparison with human physiology, and physiological adaptation to environmental variation. Review of basic physiological principles and comparative aspects of mechanism and function. Prerequisites: BIOL 211, BIOL 212 & BIOL 213, or PHSL 310 with grades of C- or better. Credit Hours: 3. Credit Hours: 3

ZOOL435 - Pollination Ecology (Same as PLB 435) This course will be an evolutionary and ecological examination of the interactions between plants and pollinators. Topics include pollination syndromes, plant breeding systems, pollinator foraging, learning, and behavior, specialized vs. generalized relationships, coevolution/cospeciation, chemical ecology, honey beekeeping & agricultural pollination, and conservation implications of pollinator relationships. Labs will provide hands-on experience in methods of investigating plant breeding systems, plant reproductive ecology, pollinator behavior and efficacy, pollen analysis, floral scent chemistry, and floral phenology. Prerequisite: BIOL 307 (General Ecology) or equivalent with a grade of C- or better. For graduate students and 4th Year students. Lab fee: $75. Credit Hours: 3

ZOOL438 - Plant and Animal Molecular Genetics Laboratory (Same as PLB 438, PSAS 438, AGSE 438, CSEM 438) Arabidopsis and Drosophila model organisms, training in laboratory safety, reagent preparation, phenotype analysis, genetics, DNA and RNA analysis, PCR, cDNA construction, cloning and sequencing. Includes plant and bacterial transformation, and population level analysis of genetic variation

using RAPD markers in grasses and Alu insertion in humans. Two 2-hr labs and one 1-hr lecture per week. Prerequisite: BIOL 305 or equivalent or consent of instructor. Lab fee: $30. Credit Hours: 3

ZOOL444 - Ecological Analysis of Communities (Same as PLB 444) Includes concepts and methods pertaining to the analysis of ecological data. Approaches will include a variety of methods for analyzing multivariate ecology, diversity, pattern, and spatial data. Laboratory will include the computer application of these concepts and methods to field situations. Two lectures and one 4 hour lab per week. Prerequisite: PLB/ZOOL 360, BIOL 307. Lab fee: $15. Credit Hours: 4

ZOOL458 - Multiple Stressors in Ecology In this class, students will use a step-by-step approach to evaluate an environmental issue or human concern compounded by climate change. The evaluation will begin with a conceptual model of the problem, followed by planned management strategies based on collaborative decision making. The class is designed to foster quantitative reasoning, include that reasoning in research, and articulate findings in terms that foster collaborative management and outreach. Examples of potential projects include climate change impacts in concert with disease propagation, habitat quality and quantity, pollutant uptake in ectotherms, coral bleaching, changing human coastal communities, or fire incidence. Credit Hours: 3

ZOOL461 - Mammalogy Taxonomic characteristics, identification, and natural history of mammals. Two 1-hour lectures and one 2-hour laboratory per week. Prerequisite: ZOOL 220. Laboratory/Field Trip fee: $10. Credit Hours: 3

ZOOL462A - Waterfowl Ecology and Management (Lecture) This class will explore the pertinence of basic life history theory and ecological principles to waterfowl management. Lecture topics include but are not limited to waterfowl life histories (i.e., productivity and mortality), foraging ecology, nutrition, habitat use, habitat management, migration, and the influence of harvest. Prerequisites: ZOOL 220, BIOL 307 with minimum grades of C-. Co-requisite: ZOOL 462B. Credit Hours: 2

ZOOL462B - Waterfowl Ecology and Management (Laboratory) This laboratory will meet 1 day/ week for 2 hours. The primary objective will be waterfowl identification with a secondary emphasis on wetland plant identification and field techniques in waterfowl research and management. There will be 2-3 Saturday field trips. Prerequisites: none. Laboratory/field trip fee: $20. Credit Hours: 1

ZOOL464 - Wildlife Administration and Policy Responsibilities of private, state, and federal natural resources management agencies. Legal and political processes in areas of wildlife and natural resources. Three lectures per week. Special approval needed from the instructor. Credit Hours: 3

ZOOL465 - Ichthyology Anatomy, physiology, sensory biology, behavior, taxonomy, evolution, zoogeography, and ecology of fishes. Two lectures and one 2-hour laboratory per week. Prerequisite: ZOOL 220 with a grade of C- or better. Laboratory/Field Trip fee: $10. Credit Hours: 3

ZOOL466 - Fish Management Sampling, age and growth, dynamics, habitat improvement, manipulation of fish populations, and management of freshwater and marine fish stocks. Two lectures per week and one 4-hour laboratory alternate weeks. Offered Fall term. Prerequisite: 10 hours of biological science or consent of instructor. Credit Hours: 3

ZOOL467 - Ornithology Classification and recognition of birds and the study of their songs, nests, migratory habits, and other behavior. One lecture and one four-hour laboratory per week. Prerequisite: ZOOL 220. Laboratory/Field Trip fee: $10. Credit Hours: 3

ZOOL468 - Wildlife Biology Principles Basic concepts of wildlife ecology and management. Includes lectures on ecological physiology, population dynamics, and wildlife management strategies. Prerequisite: ZOOL 220, BIOL 307. Credit Hours: 3

ZOOL469 - Wildlife Techniques Field-oriented course with instruction in techniques for management of wild species and their habitat. One 1 1/2-hour lecture and one 3-hour laboratory per week, two of which may be field trips on Saturdays. Prerequisite: ZOOL 220. Laboratory/Field Trip fee: $30. Credit Hours: 3

ZOOL471 - Entomology Structure, classification, and life histories of insects. Two lectures and two 2-hour laboratories per week. Prerequisite: ZOOL 220. Laboratory/Field Trip fee: $10. Credit Hours: 4

ZOOL472 - Introduction to Systems Biology (Same as PLB 471) The experimental and bioinformatics analysis of large genomic and post-genomic data sets. The goal is integration of gene regulation, protein interaction, metabolite and hormonal signaling molecules into an understanding of basic cellular circuitry networks. Examine redundancy, robustness and decision making in biological systems. Prerequisite: BIOL 305 or CS 330. Lab fee: $15. Credit Hours: 3

ZOOL477 - Aquaculture (Same as ANS 477) Production of food, game, and bait fishes. Design of facilities, chemical and biological variables, spawning techniques, diseases and nutrition. Two lectures per week and one four-hour laboratory on alternate weeks. Prerequisites: BIOL 211 or ZOOL 118 or ANS 121 with grade of C- or better. Credit Hours: 3

ZOOL478 - Animal Behavior Biological basis of the behavior of animals. Two lectures and one 2-hour laboratory per week. Prerequisite: One year of biological science or permission of instructor. Credit Hours: 3

ZOOL485 - Special Topics in Zoology Examination of topics of special interest not available in other departmental courses. Offered in response to student need and faculty availability. Special approval needed. Credit Hours: 2-4

ZOOL490 - Energetics, Food Webs, and Ecosystems (Same as PLB 490) This course places conservation of particular species into the context of community and ecosystem management. Approaches to quantifying energy needs of individual species will be extended to models of trophic networks among multiple species. Food web structure and function, species interactions, and resilience to species loss species invasions, and environmental changes will be examined in light of landscape processes. Prerequisite: BIOL 307 or consent of instructor. Credit Hours: 3

ZOOL505 - Wildlife Administration and Management Constituencies This class will explore what motivates individuals to pursue outdoor activities, why individual user groups are often extremely passionate about their individual outdoor activity, how outdoor activities impact wildlife populations and habitat, outdoor ethics, how to safely interact with individuals who are often in possession of firearms or other potentially dangerous tools that are used for hunting, and how to resolve conflicts between user groups. Credit Hours: 2

ZOOL510 - Evolutionary Biology An introductory survey of evolutionary biology at the graduate level, emphasizing conceptual issues in evolutionary genetics, adaptation, systematics, and macroevolution. Prerequisite: BIOL 305 or equivalent. Credit Hours: 3

ZOOL521 - Stream Ecology The physical, chemical, and biological factors affecting organisms in streams. Two lectures per week and one four-hour laboratory alternate weeks. Prerequisite: ZOOL 415. Special approval needed from the instructor. Credit Hours: 3

ZOOL530 - Wildlife Diseases Introduction to the causes and nature of diseases of wildlife with emphasis on wild mammals and birds. The relationship of disease to the population ecology of species will be emphasized further. Two lectures and one two-hour laboratory per week. Offered Spring term. Special approval needed from the instructor. Credit Hours: 3

ZOOL533 - Aquatic Toxicology This course will provide an overview of concepts and methodology for conducting tests in the field of aquatic toxicology. Specific topics to be covered include: acute and chronic bioassays, bioaccumulation tests including biotransformation processes and toxicokinetics, and modeling techniques using Quantitative Structure Activity Relationships and fugacity modeling. This class is recommended for students interested in learning about the applied methodology used in the rapidly evolving field of aquatic toxicology. Prerequisite: BIOL 307 and CHEM 340 or equivalent, or instructor's permission. Credit Hours: 4

ZOOL534 - Wildlife Habitat Analysis Physical, biological and behavioral factors that influence habitat use and selection by wild vertebrate populations. Landscape level analysis of wildlife habitats. Modeling habitat suitability, environmental impact and wildlife population dynamics with habitat data. Application and use of remote sensing and geographic information systems in natural resource management and habitat evaluation. One two-hour lecture and one two-hour laboratory per week. Special approval needed from the instructor. Credit Hours: 3

ZOOL535 - Quantitative Zoogeography This course focuses on spatial analyses from the perspective of the organism (or a group of organisms) and the role of the environment in shaping its distribution. The course will cover topics associated with species distribution modeling, biodiversity quantification, landscape genetics, animal movement analyses, home range quantification, and landscape conservation prioritization from the perspective of conserving a single species. Prerequisite: familiarity with GIS and consent of instructor. Credit Hours: 3

ZOOL536 - Spatial Analysis in Ecology This course provides the ecological, GIS and statistical foundations needed to perform spatial analyses of ecological data at the landscape level. The course will cover the conceptual basis and practical application of GIS-based techniques for accounting for spatial autocorrelation, data reduction, batch processing of analyses (in Python, ArcGIS and R), spatial interpolation of spatial data, and building mixed predictive models aimed at assessing landscape level processes. Prerequisite: familiarity with GIS and consent of instructor. Credit Hours: 3

ZOOL540 - Stable Isotopes in Ecology This course will introduce students to fundamentals of stable isotope biogeochemistry, analytical techniques, and interpretation and analysis of stable isotope data. Students will become acquainted with a diverse array of applications of stable isotopes in ecological research in terrestrial and aquatic systems. Two lectures or discussions per week. Prerequisite: 6 hours of chemistry, 10 hours of biological science. Special approval needed from the instructor. Credit Hours: 3

ZOOL542 - Evolution in the Anthropocene This graduate level course focuses on our contemporary understanding of the impacts of expanding urban and agricultural environments, climate change, and other major components of the Anthropocene on the evolution of wild populations. It is more critical than ever for scientists to examine how anthropogenic factors impact natural populations. This is a conceptually broad course which covers topics ranging from landscape genetics, ecological genetics, evolutionary ecology, and phylogenetics. Credit Hours: 3

ZOOL550 - Analysis of Vertebrate Populations This course provides instruction in the estimation of demographic parameters including but not limited to occurrence, abundance, mortality, birth, growth, philopatry, emigration, and immigration. Students will be introduced to and provided detailed instruction in the use of Program MARK to analyze data from individually marked organisms. Prerequisite: a course in statistics. Credit Hours: 3

ZOOL556 - Phylogenetics (Same as ANTH 556, MBBS 556, and PLB 556) An advanced introduction to modern methods of phylogenetic inference, emphasizing both theoretical background concepts and numerical approaches to data analysis. Topics include properties of morphological and molecular characters, models of character evolution, tree estimation procedures, and tree-based testing of evolutionary hypotheses. Special approval needed from the instructor. Credit Hours: 3

ZOOL557 - Biostatistics (Same as PLB 557) Basic biostatistics procedures used by researchers in life sciences and related fields. Topics include descriptive statistics, probability and distributions, statistical models, likelihood methods, experimental design, analysis of variance, regression, correlation, and the use of statistical software. Credit Hours: 4

ZOOL558 - Advanced Biostatistics (Same as PLB 558) Advanced biostatistical procedures used by researchers in life sciences and related fields. Topics include multiple and logistic regression, randomization tests, jackknife and bootstrap, Mantel tests, BACI designs, MANOVA, repeated measures analysis and the use of statistical software. Prerequisite: ZOOL 557, PLB 557 or equivalent. Credit Hours: 4

ZOOL559 - Analytical Techniques in Toxicology This is an advanced class for graduate students interested in the analytical tools used in the field of Environmental Toxicology. Prerequisite: CHEM 340 with C- or better. Credit Hours: 4

ZOOL564 - Aquaculture Techniques (Same as ANS 564) Practical experience in aquaculture techniques. Course consists of modules which require student participation in hands-on experience, (e.g., spawning, induction of spawning, production of fry, operation and grading, diagnosis and treatment of parasites and diseases, and transporting of fish). One credit for completion of two modules. Register any semester, one year to complete elected number of modules. Written report and examination required for

each module. Cost incurred by student varies with modules selected. Prerequisite: ZOOL 477 or ANS 477 or consent of instructor. Credit Hours: 1-2

ZOOL565 - Environmental Physiology of Fish Synthesis of effects of pollutants on physiological processes of fish. Course begins with an overview of fish physiology. Topics include: concepts, methods, and measurements in aquatic toxicology; histopathological, physiological, and behavioral responses to pollutants; and toxicity of heavy metals, organics, particulates and other pollutants. Three lectures per week. Prerequisite: ZOOL 465 or consent of instructor. Credit Hours: 3

ZOOL568 - Fisheries Stock Assessment Methods of characterizing harvested fish populations including mortality rates, age growth analysis, population sampling, yield models, habitat evaluation procedures and creel survey techniques. Three one-hour meetings per week. Prerequisite: ZOOL 466 with a grade of C- or better or consent of instructor. Credit Hours: 3

ZOOL569 - Advanced Fisheries Management Advanced topics related to the management of fisheries including urban fisheries, native American fisheries, freshwater commercial fisheries, Great Lakes fisheries, impact of power generating plants on fishes, and in-depth consideration of indices of community structure and current topics in fish management. Three lectures per week. Prerequisite: ZOOL 466 or consent of instructor. Credit Hours: 3

ZOOL570 - Advanced Aquaculture (Same as ANS 570) Special topics in aquaculture and practical methods for the production of coldwater, coolwater, warmwater, and tropical aquatic species. Prerequisite: ZOOL 477 or ANS 477 or equivalent with a grade of C- or better. Credit Hours: 3

ZOOL571 - Fish Reproduction and Breeding (Same as ANS 571) Principles of finfish reproductive strategies, reproductive physiology and captive breeding. The role of genetics and the use of biotechnology and various breeding techniques in breeding programs will also be emphasized. The purpose of this course is to develop an understanding of fish reproduction and breeding techniques and to gain an appreciation of the complexity involved in managing a hatchery breeding program. Two lectures a week and one four-hour lab alternate weeks. Prerequisite: ZOOL 477 or ANS 477 or equivalent with a grade of C- or better. Credit Hours: 3

ZOOL573 - Physiological Ecology The role of physiological, morphological, and behavioral adaptations and adjustments in the ecology of vertebrate organisms with special emphasis on examining the energy balance and environment as it influences vertebrate ecology. Two hours of lecture and one two-hour laboratory. Prerequisite: BIOL 307 or equivalent. Special approval needed from the instructor. Credit Hours: 3

ZOOL574 - Internship in Wildlife Administration and Management A minimum 2-month full-time internship will be conducted at a Fish and Wildlife Refuge, National Forest, State Wildlife Area, or other private of publicly held land trust. During the time of the internship, daily activities of the students will be supervised by agency personnel. In collaboration with agency personnel, students will be required to write and submit a land improvement proposal to an appropriate funding agency. Internships must be approved by the Director of the Professional Science Master's program in Zoology. Grading will be based on a rubric outlining student performance during the day to day activities internship and the final land improvement proposal. Credit Hours: 1-6

ZOOL576 - Seminar in Ecology (Same as PLB 589A) Discussions of current and historical research and literature in various subject areas of ecology. Credit Hours: 1

ZOOL577 - Population Ecology Principles of population dynamics as related to animals, with application to management and conservation of animal populations. Areas of emphasis include (A) an introduction to mathematical models and graphical theory of population dynamics, (B) application of theory to population management & conservation, and (C) empirical approaches to studying population persistence and regulation. Prerequisite: BIOL 307 or consent of instructor. Credit Hours: 3

ZOOL578 - Population Genetics (Same as PLB 578) Genetic structure of populations, factors causing changes and principles governing rate and direction of change. Three lectures per week. Prerequisite: BIOL 304 or equivalent, and BIOL 305 or equivalent. Credit Hours: 3

ZOOL579 - Molecular Genetics Techniques Practical experience in molecular genetics techniques currently used in zoology for population genetic analysis and for molecular systematics. Emphasis will be on methods for allozyme, mtDNA and nuclear DNA analysis. Class projects will focus on experimental design, data collection and analysis. Special approval needed from the instructor. Credit Hours: 3

ZOOL580 - Current Topics in Evolution (Same as ANTH 580) The Evolution Discussion Group meets weekly throughout the year to discuss current evolutionary literature and the research of participants. All students and faculty with an interest in evolutionary biology are welcomed to participate. Credit Hours: 1

ZOOL581 - Zoological Literature Diversity and functions of zoological literatures, scientific writing and the publication process. Two lectures per week. Restricted to graduate status in a biological science. Credit Hours: 2

ZOOL582 - Graduate Zoology Seminar Special topics in zoology. Consult department for each semester's topic. One meeting per week. Special approval needed from the instructor and department. Credit Hours: 1

ZOOL584 - Conservation Genetics Application of principles from evolutionary and ecological genetics to conservation biology, fishery management, wildlife management, and aquaculture. Includes an overview of classical, molecular, population and quantitative genetics leading to an understanding of how managers can conserve genetic diversity and evolutionary potential of natural and captive populations. Prerequisite: BIOL 305 or consent of instructor. Credit Hours: 3

ZOOL585E - Seminar: Reasoning in Ecology Conceptual issues in ecology and ecological research. Credit Hours: 3

ZOOL585G - Seminar in Parasitology Advanced study of special topics in zoology. Credit Hours: 3

ZOOL585Z - Seminar in Selected Topics Advanced study of special topics in zoology. Special approval needed from the instructor or department. Credit Hours: 3

ZOOL586 - Fisheries Seminar Contemporary topics, literature, and oral and written communication in fisheries science. Enrollment required for zoology graduate students specializing in fisheries science for all fall and spring semesters until degree requirements are completed, unless exempted by the student's academic advisor. Only one 586 credit hour, however, may be used to satisfy degree requirements. One meeting per week. Credit Hours: 1

ZOOL588 - Wildlife Seminar Contemporary topics, literature, and oral and written communication in wildlife ecology. Enrollment required for zoology graduate students specializing in wildlife ecology for all Fall and Spring semesters until degree requirements are completed. Only four 588 credit hours, however, may be used to satisfy degree requirements. One meeting per week. Credit Hours: 1

ZOOL589 - Zoology Colloquium Regularly scheduled presentations by invited seminar speakers on topics of current research interest in Zoology. Graded S/U. Only two credits of 589 may be used to satisfy degree requirements. Restricted to graduate status in Zoology. Credit Hours: 1

ZOOL593 - Individual Research Investigation in zoology other than those for theses. Only three hours may be credited toward a degree. Some costs may be borne by the student. Credit Hours: 1-12

ZOOL596 - Research Graded S/U only. Credit may not be used toward a degree in Zoology. Special approval needed from the instructor. Credit Hours: 1-12

ZOOL597 - Advanced Zoological Techniques Individualized techniques or experimental procedures to prepare for dissertation research. May be taken at another university. Number of credits determined by committee. Graded on S/U basis following final report submitted to major adviser. Restricted to admission to Ph.D. degree program in Zoology. Special approval needed from the major adviser. Credit Hours: 1-12

ZOOL598 - Research Paper Research paper for Master of Science degree for Biological Sciences major. Some cost may be borne by the student. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-6

ZOOL599 - Research and Thesis Thesis for Master of Science degree. Only six hours may count toward the degree. Some cost may be borne by student. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-36

ZOOL600 - Research and Dissertation Research and dissertation for Doctor of Philosophy degree. Some cost may be borne by student. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-32

ZOOL601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

ZOOL699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Zoology Faculty

Anderson, Frank E., Professor, Ph.D., University of California, Santa Cruz, 1998; 1999. Invertebrates, molecular systematics, molecular evolution.

Bastille-Rousseau, Guillaume, Assistant Professor, Ph.D., Trent University, 2014; 2020. Wildlife, spatial, population, and behavioral ecology.

Brown, Jason L., Assistant Professor, Ph.D., East Carolina University, 2009; 2016. Integrated ecological, evolutionary, genetic, and geospatial analysis.

Eichholz, Michael W., Professor, Ph.D., University of Alaska, 1998; 2002. Waterfowl, wetland ecology.

Garvey, James E., Professor, Ph.D., Ohio State University, 1997; 2000. Fisheries biology.

Garcia-Heras, Marie-Sophie, Assistant Professor, Ph.D., University of Cape Town, 2017; 2025. Conservation biology, ornithology.

Grundler, Michael C., Assistant Professor, Ph.D., University of Michigan, 2020; 2025. Evolutionary biology, herpetology.

Heist, Edward J., Professor, Ph.D., College of William and Mary, 1994; 1998. Population genetics, conservation genetics, fishery management.

Holmes, Iris. Assistant Professor, Ph.D., University of Michigan, 2020; 2025. Host-pathogen interactions, herpetology.

Ibrahim, Kamal, Associate Professor, Ph.D., Cambridge University, 1989; 2001. Population genetics.

Jimenez-Ruiz, F. Agustin, Associate Professor and Director of Graduate Studies, Ph.D., University of Nebraska-Lincoln, 2004; 2009. Parasitology.

Lovvorn, James R., Professor, Ph.D., University of Wisconsin-Madison, 1987; 2009. Waterbird ecology, food webs.

Lydy, Michael J., Professor, Ph.D., Ohio State University, 2001. Aquatic toxicology.

Narr, Charlotte, Assistant Professor, Ph.D., Trent University, 2016: 2020. Freshwater ecology, ecological stoichiometry, and host-parasite interactions.

Whitledge, Gregory, Professor, Ph.D., University of Missouri, 2001; 1995. Fish ecology and management.

Emeriti Faculty

Anthoney, Terence R., Associate Professor, Emeritus, M.D., University of Chicago, 1968; and Ph.D., University of Chicago, 1975; 1971.

Brandon, Ronald A., Professor, Emeritus, Ph.D., University of Illinois, 1962; 1963.

Brooks, Marjorie, Associate Professor, Emerita, Ph.D., University of Wyoming, 2003; 2009.

Burr, Brooks M., Professor, Emeritus, Ph.D., University of Illinois, 1977; 1977.

Englert, DuWayne C., Professor, Emeritus, Ph.D., Purdue University, 1964; 1963.

Feldhamer, George A., Professor, Emeritus, Ph.D., Oregon State University, 1977; 1984.

Halbrook, Richard S., Associate Professor, Emeritus, Ph.D., Virginia Polytechnic Institute and State University, 1990; 1993.

Heidinger, Roy C., Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1970; 1970.

King, David G., Associate Professor, Emeritus, Ph.D., University of California, San Diego, 1975; 1977.

Kohler, Christopher C., Professor, Emeritus, Ph.D., Virginia Polytechnic Institute, 1980; 1981.

Krajewski, Carey, Professor, Emeritus, Ph.D., University of Wisconsin-Madison, 1988; 1990.

LeFebvre, Eugene A., Associate Professor, Emeritus, Ph.D., University of Minnesota, 1962; 1966.

McPherson, John E., Jr., Professor, Emeritus, Ph.D., Michigan State University, 1968; 1969.

Muhlach, William L., Associate Professor, Emeritus, Ph.D., University of Illinois at Chicago, 1986; 1987.

Nsofor, Margaret N., Associate Professor of Practice, Emerita, Ph.D., Mississippi State University, 1998.

Reeve, John, Associate Professor, Emeritus, Ph.D., University of California Santa Barbara, 1985; 2000.

Shepherd, Benjamin A., Professor, Emeritus, Ph.D., Kansas State University, 1970; 1969.

Thomas, Richard H., Associate Professor, Ph.D., University of Arizona, 1985; 2004.

Other Graduate Courses

The courses listed below are offered by Southern Illinois University Carbondale for graduate credit. These courses may satisfy graduate degree requirements or graduate certificate programs but are not stand alone master or doctoral degree programs.

Africana Studies

AFR401 - Atlantic History (Same as HIST 401) This course examines the origins and development of the Atlantic basin as an intercommunication zone for African, European and American societies from the mid-15th century through the early-19th century. Themes include transformation of environments, forced and voluntary migrations, emergence of distinct Atlantic culture communities, development of Atlantic economics and formulation and implementation of Atlantic revolutionary ideologies. Credit Hours: 3

AFR410H - African Expressive Culture (Same as ANTH 410H) This course examines aspects of African expressive culture including the visual arts, music, dance, orature, cinema, drama, and ceremony from an anthropological perspective. Particular attention is given to analysis of African expressive culture in social context and the role of the arts in the practice of politics, religion, medicine, and other aspects of African life. Many of the expressive genres examined deal with historical representation and political resistance. Therefore, this course provides insights into African history and politics through the creation of African artists. Credit Hours: 3

AFR413 - African Film (Same as ANTH 413) This course examines the history and social significance of African film from cultural, aesthetic, political, and economic perspectives. Credit Hours: 3

AFR416 - Black Feminist Thought as Theory and Praxis Explore the roots, contemporary manifestations, and current embodiments of Black feminist thought. Explore the works of Black women to engage in critical thinking and thoughtful dialogue that positions the valuable knowledge, experiences and perspectives of women of color at the center of inquiry while simultaneously discovering spaces for multicultural alliances. Credit Hours: 3

AFR420 - Themes in Africana Drama (Same as THEA 460) Explores significant themes in African and African American drama, with special attention to performance styles and cultural issues. Credit Hours: 3

AFR447 - Communicating Race and Ethnicity (Same as CMST 447) Via intercultural theories and methods, this course explores histories, relationships, interactions and recent events by positioning racial and ethnic perspectives at the center of inquiry. The course critically examines the complexities of race, racism and ethnicity by focusing on how people communicate across racial and ethnic differences in different contexts. Credit Hours: 3

AFR452A - Traditions of Uppity Women's Blues (Same as MUS 452A, WGSS 452A) Examines the tradition of "uppity" women's blues from the so-called "classic" blues singers of the 19th century (Gertrude "Ma" Rainey, Bessie Smith, Ida Cox, etc.) to the contemporary blues of Saffire, Denise LaSalle and others. Explores ways blues women challenge conventions of gender and sexuality, racism, sexism, classism, and homophobia. Restricted to 3rd Year/4th Year/graduate music major or consent of instructor. Credit Hours: 3

AFR452B - Blues and Boogie Woogie Piano Styles (Same as MUS 452B) Traces the history, culture, and stylistic developments of blues and boogie woogie piano. Explores socio-cultural contexts and examines key players, pieces, and musical styles. Restricted to 3rd Year/4th Year/graduate music major or consent of instructor. Credit Hours: 3

AFR460 - Slavery and The Old South (Same as HIST 460) This course examines slavery and southern distinctiveness from the colonial period to 1861. Discussion topics include the plantation system, race relations, women and slavery, and southern nationalism. Credit Hours: 3

AFR461 - Black Americans on the Western Frontier (Same as HIST 461) This course examines the history of African Americans in the American West. Taking both a chronological and thematic approach, it begins with a discussion of early black explores in the age of encounter, and ends with a focus on black western towns established in the United States by the 1880's. Credit Hours: 3

AFR465 - Governments and Politics of Sub-Saharan Africa An examination of the impact of western colonial rule on the societies and politics of Africa, the method by which these colonial areas became sovereign states in the post-World War II era, the role of domestic political institutions, African political thought and behavior, and the development of foreign policies regarding relations with other African states, continental and international organizations, and international organizations, and non-African states. Credit Hours: 3

AFR472 - Psychology of Race and Racism This course reviews the history and evolution of the construct of race as a psychological phenomenon. While the course will be largely psychological in nature, the pervasiveness of race in practically every sphere of life necessitates a multidisciplinary approach. The course will emphasize a theoretical and conceptual approach toward understanding the psychology of racialized thinking. Prerequisite: PSYC 211. Crosslisted with PSYC 470. Credit Hours: 3

AFR473 - Comparative Slavery (Same as HIST 473) A comparative study of slavery from antiquity to its abolition in the 19th century with the differing socio-cultural, political and economic contexts; organized chronologically, regionally, and thematically. Credit Hours: 3

AFR475 - Education and Black America This course uses the best scholarship of cultural anthropology and social studies to look at the history of education in the African American community; how public education affects African American families; how school shape cultural change and how racial, ethnic peer group, and gender issues help determine curriculum issues. For graduate credit. Credit Hours: 3

AFR478 - Southern Africa, 1650-1994 (Same as HIST 478) An examination of Southern African history with emphasis on South Africa from 1652 to 1994. Topics to be covered include conflicts and wars, migrations and state formations, the economics of minerals, industrialization and the Anglo-Boer War, intertwined histories of race relations, the politics of exclusion and apartheid, and the making of modern South Africa. Credit Hours: 3

AFR491 - Independent Readings in Africana Studies Special topics, focused on research needs of students who are regularly enrolled in upper-division courses, especially graduate students doing research in Africana related topics in other departments and programs. May be repeated for up to six credit hours. Special approval needed from the director of the AFR program. Credit Hours: 3

AFR494 - Methodology Seminar in Africana Studies This course provides the theoretical framework for research in the field of Africana Studies. Students will investigate the foundations of the field of Black Studies, from the arguments of Maulena Karenga and Molefi Asante, to the challenges of scholars such as Manning Marable, James Turner and other recent scholars. Students will pursue individual research projects appropriate to various academic disciplines which constitute the field of Africana Studies. May be taken for graduate credit. Credit Hours: 3

AFR495 - African Cultural Continuities: Study Abroad Study abroad 4-6 week program is designed to introduce similarities in culture (food, dance, music, family traditions, religion) of people in Ghana and in the cultures of people in the African diaspora. Class begins on the SIUC campus and will relocate to Elmina and Cape Coast, Ghana, during the first year of a three-year sequence. Other years will locate in areas of the West Indies, Caribbean & Central America. May be taken for graduate credit. Special approval needed from the instructor. Credit Hours: 3-9

AFR496 - Slave Narratives Using compilations of the 19th and early 20th century body of work known as "Slave Narratives", students will organize research projects that discover selected major themes of Africana Studies. The course will be useful to students from various academic disciplines (such as Psychology; Music; Sociology; History; Philosophy; Education; Literature; and Theology, among others) as they place Slave Narratives in the center of Africana and American Studies scholarship. May be taken for graduate credit. Credit Hours: 3

AFR497 - The U.S. Civil Rights Movement (Same as HIST 487) This course provides an overview of the history of the Civil Rights Movement while engaging major debates in the field of Black Freedom Studies. Central themes will include the impact of the Cold War, the roles of women, and the relationship of civil rights to black power. We will also discuss the difference between popular memory and historical scholarship as well as the meaning of such discussions for contemporary issues of racial and economic justice. Credit Hours: 3

AFR499 - Special Topics in Africana Studies Topics vary and are announced in advance. May be repeated as the topic varies. No prerequisites. Credit Hours: 3-9

AFR499A - History of African American Philosophy (Same as PHIL 451) A survey of major thinkers and themes in the history of African American Philosophy from colonial times to the 20th century. Credit Hours: 3

AFR499B - Philosophy of Race (Same as PHIL 455) A survey of critical examination of a range of theories on the nature and meaning of "race", the intersection of race with class and gender, and the promotion of racial progress. Such theories include racial realism and idealism, racial biologism, cultural race theory, social constructivist theory, integrationism, separatism, racial eliminativism, cosmopolotianism, and especially critical race theory. Credit Hours: 3

AFR499C - Topics in Africana Philosophy (Same as PHIL 459) A seminar on varying topics, themes, and figures in African, African American, and/or Caribbean Philosophy, e.g., "W.E.B. Du Bois and His Contemporaries," "Pan Africanism," "Philosophies of Liberation," "Black Feminism," " Contemporary African Philosophy," "Philosophies of the Caribbean. Credit Hours: 1-6

AFR501 - Testimonies of Liberation: The Slave Narratives as a Foundation for Africana Research In the seminar, a deep appreciation of the various texts that are the testimonies of the enslaved Africans in the United States help shape the research strategies of students who wish to do focused studies of African American and American culture, by discovering the themes of resistance, persistence and transcendence as these themes were articulated and employed by generations of enslaved Africans in what is now the United States. Students engage in close critical and cultural readings of slave narratives; folklore texts; musical testimonies (folk songs and Spirituals), petitions and other records. Credit Hours: 3

AFR502 - Multicultural Competence Seminar The course deals with issues of human diversity broadly defined to include race, ethnicity, culture, nationality, religion, sexual orientation, gender identity, and ability. It explores the contours of difference and the dynamics of diversity, privilege, and oppression in domestic and global contexts. It also examines authentic cultural voices, understanding these voices, how to interact with them and be able to find individual and group cultural voices in a diverse society and how to apply the knowledge in a larger global sphere. Credit Hours: 3

AFR559 - Topics in Africana Philosophy A seminar on varying topics, themes, and figures in African, African American, and/or Caribbean Philosophy, e.g., "W.E.B. Du Bois and His Contemporaries," "Pan-Africanism," "Philosophies of Liberation," "Black Feminism," "Contemporary African Philosophy," "Philosophies of the Caribbean. Credit Hours: 3

Agriculture

AGRI401 - Fundamentals of Environmental Education (Same as FOR 401 and REC 401) A survey course designed to help education majors develop an understanding of environmental education principles and teaching both inside and outside the classroom. Requires field trip transportation fee not to exceed $25 per course registration. Prerequisite: Ten hours of biological science or ten hours of recreation and/or education, or consent of instructor. Credit Hours: 3

AGRI423 - Environmental Interpretation (Same as FOR 423 and REC 423) Principles and techniques of natural and cultural interpretation. Two hours lecture, three hours laboratory. Prerequisite: ten hours biological science or ten hours of recreation. Requires field trip transportation fee not to exceed $40 per course registration. Credit Hours: 3

AGRI450 - Farming Systems Research and Development An introduction to farming systems, which is an interdisciplinary approach to agricultural research and development emphasizing small farms. The whole farm is viewed as a system of interdependent components controlled by the farm household. Focuses on analyzing interactions of these components as well as the physical, biological, and socioeconomic factors not controlled by the household. Techniques of analysis are applicable domestically and internationally. Credit Hours: 2

AGRI481 - International Agricultural Seminar Discussion of special topics relating to worldwide agricultural development. Special approval needed from the instructor. Credit Hours: 1

AGRI595 - Instruction in Agricultural Sciences Acquaints the student with different teaching environments and styles. Students will be expected to participate in instructing agricultural sciences courses. Special approval needed by the instructor. Credit Hours: 1-6

Army Military Science

AMS404 - U.S. Military History This course provides a historical perspective to decisions made by American military leaders; emphasizing solutions to challenges future Army officers might face: battlefield complexity, resource limitations, teamwork deficiencies, etc. The student will learn how former military leaders confronted and coped with similar issues, using their experiences and approaches to arm students with the ability to create their own solutions. Commissioning requirement for Army ROTC cadets. Course not restricted to ROTC cadets. Credit Hours: 3

Aviation Technologies

AVT478 - Aircraft Business and Industry Financial Practices This class introduces current and future aerospace manufacturing and maintenance professionals to aviation business and finance. This course covers business and economic theory as it applies to a wide range of aviation businesses. Topics of study include a survey of the aviation industry, the application of economic principles to industry forecasts, business finance, and aviation in a global marketplace. Credit Hours: 3

AVT570 - Fault Prediction and Analysis Students will develop an understanding of the concepts of reliability, maintainability and failure modes to a level which facilitates fault prediction and the analysis of logistical systems. The topics of logic symbols, fault tree analysis, statistical analysis, fault criticality and engineering for reliability and maintainability will be presented as these relate to the maintenance and logistical management of aerospace hardware. Students who have completed AVT 470 are not eligible to enroll. Credit Hours: 3

AVT578 - Aviation Business Practices This class introduces current and future aerospace manufacturing and maintenance professionals to aviation business and finance. This course covers business and economic theory as it applies to a wide range of aviation businesses. Topics of study include a survey of the aviation industry, the application of economic principles to industry forecasts,

business finance, and aviation in a global marketplace. Students who have completed AVT 478 are ineligible to enroll. Credit Hours: 3

AVT588 - Aerospace Safety This course is an introduction to safety management systems that are becoming prevalent and required in the aviation industry. Topics will include the history of SMS, FAA guidelines pertaining to SMS, development and implementation of an SMS and the documentation and record keeping required. Students that have successfully passed AVM 488 from the School of Aviation at SIU or a similar course from other peer institutes are not eligible to enroll in AVM 588 as the courses cover similar topics to an extent. Credit Hours: 3

Biochemistry

BCHM451A - Biochemistry (Same as CHEM 451A) First half of the 451A,B two semester course. Introduction to structure and function of biomolecules including nucleic acids, proteins, sugars, polysaccharides, lipids and membranes, biochemical techniques, expression of genetic information, signal transduction and transport through membranes. Prerequisites: CHEM 340 and CHEM 342 or 442, or equivalents with grades of C- or better. Credit Hours: 3

BCHM451B - Biochemistry (Same as CHEM 451B) Second half of 451A,B two semester course. Basic kinetics, enzyme kinetics, enzyme inhibitors, regulation of enzymes, oxidation-reduction, high energy bonds, carbohydrate metabolism, aerobic/anaerobic metabolism, lipid metabolism, nitrogen metabolism, hormonal control of metabolism. Prerequisites: BCHM 451A or CHEM 451A or equivalent with a C- or better. Credit Hours: 3

BCHM452 - Advanced Biochemistry (Same as CHEM 452) Advanced study of biological chemistry including the structure-function relationship in proteins, the mechanism of enzyme reactions and the biochemical basis of gene expression, signal transduction, nerve impulses, molecular motors and other physiological processes. For graduate students, this course may be taken to meet deficiencies in biochemical knowledge, but will not meet the formal coursework requirements for the master or doctoral level degrees. Prerequisite: C- or better in CHEM 340, CHEM 341, BCHM/CHEM 350. Credit Hours: 3

BCHM456 - Biophysical Chemistry (Same as CHEM 456) A one-semester course in Biophysical Chemistry intended for biochemists and molecular biologists. Emphasis will be on solution thermodynamics, kinetics and spectroscopy applied to biological systems. Prerequisites: CHEM 340 and 442, MATH 141 or 150, BCHM 451A or CHEM 451A, or equivalents. Credit Hours: 3

Education

EDUC468 - Science Methods for Middle and Senior High Schools A performance-based approach to instructional skills common to teaching natural science at the middle and senior high school levels. Three class hours and one micro teaching laboratory per week. (Previously CI 468). Credit Hours: 3

EDUC469 - Teaching Social Sciences in the Secondary School [6-12] Emphasis is placed on the analysis and evaluation of the social sciences with focus on instructional strategies and curricular designs in the teaching of history, geography, political science, economics, and sociology, as well as content reading for the social sciences. Prerequisite: EDUC 313 with a grade of C or better or consent of instructor. (Previously CI 469). Credit Hours: 3

EDUC500 - Clinical Experiences in Teaching Clinical field experiences or apprenticeship conducted in a public school setting for graduate students. Supervision provided by Cooperating Teacher and University Supervisor. Restricted to admission to graduate programs. Special approval needed from the advisor. Credit Hours: 1-6

EDUC501 - Graduate Student Teaching A requirement for the Master of Arts in Teaching and Alternative Route to Teacher Certification programs. The student teaching experience is necessary for certification by entitlement. Restricted to admission to the M.A.T. or alternative route to teacher certification programs. Lab fee: $100. Credit Hours: 1-12

EDUC510 - Introduction to Doctoral Studies in Education This seminar is required of all new students enrolled in the Ph.D. program in Education, to be taken at or near the beginning of their studies. The seminar serves as an introduction to doctoral studies and doctoral-level scholarship in Education. It

will emphasize each student's development as a critically reflective scholar and address the attitudes, assumptions and practices that underlie scholarly inquiry in the Education field. Credit Hours: 3

EDUC511 - Doctoral Seminar in Philosophical and Cultural Foundations of Education This seminar is one of two course options required for all students pursuing a doctoral program degree in the College of Education and Human Services. The primary objectives are to aid in the development of the Doctoral student's own nature and reflective theory of education; to help students pursue their scholarly activities in relation to the whole field of education; and to make the student aware of the resources of scholarship in other disciplines which might be said to be foundational to education. Restricted to admission to the Ph.D. program in education. Credit Hours: 3

EDUC512 - Doctoral Seminar in Behavioral and Cognitive Foundations of Education This seminar is one of two course options for all students pursuing a doctoral degree in Education. The seminar focuses on the critical examination of the psychological basis of pedagogical theory; a review of behavior, cognitive and motivational theories; and a preliminary assessment of empirical research related to psychology of instruction. Restricted to admission to the Ph.D. program in education. Credit Hours: 3

EDUC513 - Theory and Research in Justice, Equity, Diversity, and Inclusive Education This course focuses on the analysis, application, and synthesis of critical epistemologies and foundational theories in justice, equity, diversity, and inclusion (JEDI). This body of thought originates from multiple disciplines to inquire into and inform conceptions of power, privilege, equity, and justice. The course involves intensive reading, discussion, writing, and synthesis of core theoretical underpinnings and concepts with implications for educators and leaders across social and institutional contexts. Credit Hours: 3

EDUC550 - Experimental Education Offered for purposes of testing new and experimental courses and series of courses within the College of Education. Special approval needed from the instructor. Credit Hours: 1-10

EDUC550C - Rec Research Seminar Credit Hours: 3

Educational Research

ERES500 - Reading Educational Research The goal of this course is to develop student skills as consumers of research in education. This course covers standards and practices in multiple traditions of educational research in order to help students critically read, assess, and evaluate research. Credit Hours: 3

ERES501 - Introduction to Education Research Methods This course provides an overview of research methods as applied to education. Students will read, discuss, and analyze various research approaches. This course will also examine differences between various approaches to research and how educators in multiple settings and venues use them to address elements of education such as organizational functions, fiscal management, instruction (general and discipline specific), and learning outcomes. (Previously CI 538 and SPED 500). Credit Hours: 3

ERES510 - Research in Action This course provides an overview of how to apply research to practice within educational settings and related policy arenas. The research reviewed in this course will focus on an approach to inquiry that strives to improve performance, functions, and outcomes. Students will learn how to use research as a tool to examine elements of their own practice as educators with particular attention to improving student achievement, professional development and performance, administrative leadership, and the overall function of schools, colleges, and universities as organizations. (Previously EAHE 586). Credit Hours: 3

ERES520 - Introduction to Quantitative Research in Education This course offers an introduction to the reading of quantitative research literature and the development of quantitative research methods. This course emphasizes application to Education; however, students can use the content covered in this course to address areas of scholarly inquiry in various academic fields and disciplines. (Previously EDUC 505) Credit Hours: 3

ERES530 - Program Development & Evaluation The course emphasizes both the evaluation of individual learner performance and program evaluation in the interest of assessing curriculum and instruction effectiveness. This course emphasizes formal and informal means of formative and

summative processes utilizing evaluation diagnostics and instrumentation. Content will include qualitative and quantitative data collection strategies, implementing effective evaluations, and complying with accreditation standards and guidelines. (Previously, CI 587, SPED 585, and WED 564). Credit Hours: 3

ERES531 - Implementation and Assessment of Program Evaluation This course will concentrate on the development, implementation, and analysis of assessment and evaluation strategies. Course participants will gain hands-on experience by examining the components, design, influence, and outcomes of an educational program, curriculum, or academic unit. Students will learn and practice using assessment and evaluative strategies to improve administrative practice, affect student outcomes, and conduct academic research. Students will have opportunities to consider and devise strategies for sharing evaluation results and using this information to improve instruction, operations, administration, and outcomes. Prerequisite: ERES 530 with a C or better. (Previously EAHE 567). Credit Hours: 3

ERES532 - Evaluating Learner Performance The course focuses on the evaluation of individual learner performance in schools, the workplace, and other training activities. Topics in this course will include establishing personalized benchmarks, monitoring individual progress, helping learners to identify their own skills and challenges, and application of these tools and approaches in various settings. Prerequisite: ERES 530 with a C or better or consent of instructor. Credit Hours: 3

ERES540 - Introduction to Qualitative Research This course introduces students to qualitative research in education. The course examines the foundations, design, methods and analysis of qualitative research. Course materials include both philosophical texts about the foundations and purposes of qualitative inquiry, and methodological readings about the hands-on application of research techniques. This course allows students to explore multiple approaches and tools used in qualitative methods, while considering how to apply them to research. Restricted to admission to doctoral program or consent of instructor. (Previously EAHE 587). Credit Hours: 3

ERES541 - Critical Qualitative Paradigms This course delves into critical perspectives that center voices of different perspectives, cultures, and identities. Critical perspectives examined and applied in this course include feminism, indigenous, critical race theory (CRT), postcolonialism, postmodernism, and queer theory as well as geographic and culturally specific forms of these and other frameworks. This course will promote (re)consideration, deconstruction, reflexivity, and conscious recognition of the ways that social, economic, political, and ethical issues affect research, the populations and communities at the center of a study, and the people conducting this work. Prerequisite: ERES 540 with a C or better or consent of instructor. Credit Hours: 3

ERES542 - Data Collection in Qualitative Research This course focuses on various approaches to collecting data in qualitative research. Topics include interviews and focus groups; case study; ethnography; phenomenology; comparative; and narrative forms used in qualitative research. Students will use this course to practice and improve their data collection skills for application on theses, dissertations, and other projects. Prerequisite: ERES 540 with a C or better or consent of instructor. Credit Hours: 3

ERES544 - Application and Implementation of Qualitative Research This doctoral-level seminar in qualitative research concentrates on applying methods and approaches. As part of this course, students will design and implement an independent qualitative research project. This course will include attention to methods and methodology, conceptualization, trustworthiness, and analysis. Prerequisite: ERES 540 and ERES 542 (or concurrent enrollment in ERES 542) with grades of C or better. (Previously EAHE 594). Credit Hours: 3

ERES546 - Historical Research in Education Seminar designed to explore the literature, methods, and possibilities of historical research in education. (Previously EAHE 530). Credit Hours: 3

ERES550 - Mixed Methods in Educational Research An examination of how to combine qualitative and quantitative research methods and to defend such studies with reference to the tenets of the underlying constructivist and post-positivistic research paradigms. The objective of this course is for students to design and defend a mixed methods educational research study. Prerequisite: ERES 520 and ERES 540 with grades of C or better or consent of instructor. (Previously CI 592). Credit Hours: 3

ERES580 - Writing for Publication The purpose of this course is to help students learn about and navigate the publication process for educational research and scholarship. This course will discuss and

apply current American Psychological Association (APA) guidelines required by the School of Education with specific attention to writing reports, annotated bibliographies, and reviews of literature. The course will also emphasize professional vocabulary, format, and writing style. Assignments for this course may include reviewing and critiquing scholarly research, crafting detailed literature reviews, authoring conference, fellowship, and/or book chapter proposals, etc. (Previously CI 493 and WED 561). Credit Hours: 3

ERES588 - Reviewing and Synthesizing Research This course seeks to help students prepare, improve, and apply their skills analyzing existing research literature. Students will practice reviewing and analyzing research on a topic of their choice and write a paper synthesizing this body of research. This course will help students enhance their synthesis skills as preparation for preliminary exams, dissertation/capstone, and establishing a research agenda. Prerequisite: ERES 520 or ERES 540 with a C or better. Special approval needed from the instructor. (Previously CI 582). Credit Hours: 3

ERES589 - Doctoral Research Seminar This course seeks to help students prepare to fulfill their dissertation/capstone requirements. This course emphasizes both independent study and practical application to help students transition from reading educational research to synthesizing existing literature and clearly presenting original scholarship. Students must have approval from their committee chair to enroll in this course. Students should also obtain an approved Program of Study before initiating this course. Graded S/U only. Special approval needed from the instructor. (Previously EAHE 589 and WED 594). Credit Hours: 3

ERES590 - Special Investigations Selection and investigation of a problem: use of relevant sources and techniques; collection and analysis, evaluation, interpretation of data, and the writing of a report of the investigation. Emphasizes independent study or small group investigations that students may use as part of their dissertation, capstone, or some other research project. Special approval needed from the instructor. (Previously WED 598). Credit Hours: 3

ERES591 - Individual Readings in Educational Research Advanced readings in topics related to educational research. Special approval needed from the instructor. Credit Hours: 1-6

ERES592 - Independent Study in Educational Research Advanced study and application of research methods on topics related to education and educational research. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-6

ERES593 - Research Internship/Practicum The internship provides an opportunity for practical experience related to educational research. Each student must obtain prior approval from his/her advisor before registering for or starting an internship/practicum. Additionally, each student must pass all of the assigned internship requirements in order to receive a pass for the course. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-6

Electrical Engineering Technology

EET403A - Electronic Circuit Analysis This course studies fundamental solid-state electronic concepts, the application and design of transistor amplifiers, and operational amplifier circuits. Course topics include the ideal operational amplifier, diodes, rectifiers, analysis and design of bipolar transistor (BJT) amplifiers, and the analysis and design of field effect transistor (FET) amplifiers. Prerequisites: EET 304B & EET 304BL. Co-requisite: EET 403AL. Restricted to College of Engineering, Computing, Technology, and Mathematics students or departmental approval required. Credit Hours: 3

EET403AL - Electronic Circuit Analysis Lab This course demonstrates the operation of solid-state devices and provides design experience. The course covers diodes, bipolar junction transistors, and field effect transistors. The course also covers advanced Operational Amplifier applications. Students develop circuits that utilize these devices based on design specifications using industry standard components and part values. Students test these circuits to verify their operation. Design reports document student work and provide experience in technical communications and data presentation. Parts kit required. Prerequisites: EET 304B & EET 304BL. Co-requisite: EET 403A or consent of instructor. Restricted to College of Engineering, Computing, Technology, and Mathematics students or departmental approval required. Credit Hours: 1

EET403B - Electronics Application and Design This course focuses on system-level design and application of electronics circuits. Circuits include linear integrated circuits, quasi-linear circuits, integrated digital circuits, and pulse waveform generating and timing circuits. Topics include power amplifiers, Schmitt triggers, comparators, timers, and active filters. A design laboratory allows students to implement several design projects with increasing complexity. Prerequisite: EET 403A. Restricted to 3rd Year/4th Year standing. Restricted to College of Engineering, Computing, Technology, and Mathematics students or departmental approval required. Credit Hours: 4

EET437A - Telecommunication Systems Fundamentals This course is a study of the fundamental concepts of analog and digital communication systems in addition to a survey of the state of the art of current and emerging communication technologies. Topics include modulation, signal encoding, transmission media, multiplexing, cellular, bluetooth, Wi-Fi, WiMAX and LTE-Advanced. Prerequisites: EET 304B & EET 304BL with a minimum grade of C. Co-requisite: EET 437AL. Restricted to 3rd Year/4th Year standing. Restricted to College of Engineering, Computing, Technology, and Mathematics students or departmental approval required. Credit Hours: 3

EET437AL - Telecommunication Systems Fundamentals Lab This course demonstrates the operation of a basic telecommunication system and hands-on experience with real-world applications. The course covers how to operate an oscilloscope, different signal modulations and demodulation like amplitude and frequency, and how to sample and reconstruct a communication signal. Students will design and develop communication circuits using a trainer kit. The course also covers MATLAB programming to simulate the building blocks of analog/digital communications systems. Prerequisites: EET 304B & EET 304BL with a minimum grade of C. Co-requisite: EET 437A. Restricted to 3rd Year/4th Year standing. Restricted to College of Engineering, Computing, Technology, and Mathematics students or departmental approval required. Credit Hours: 1

EET437B - Data and Computer Communication This course is a study of data and computer networks. Students are introduced to communication protocols, networking technologies and the various computer networks topologies. The OSI (Open Systems Interconnection) model is used as a guide in introducing the purpose and underlying principles of the existing communication protocol standards. The course concludes with an overview of emerging communication standards and technologies. Topics include LAN, WAN, TCP/IP, Routing, and Data Link layer. Prerequisites: EET 437A & EET 437AL with a minimum grade of C. Co-requisite: EET 437BL. Restricted to 3rd Year/4th Year standing. Restricted to College of Engineering, Computing, Technology, and Mathematics students or departmental approval required. Credit Hours: 3

EET437BL - Data and Computer Communication Lab This course gives students experience with computer networking protocols and transmission mediums through software simulation. Students use software tools to build simulated communication networks and test them using various protocols and traffic patterns. Students document their work with short reports and simulation results. Prerequisites: EET 437A & EET 437AL with a minimum grade of C. Co-requisite: EET 437B. Restricted to 3rd Year/4th Year standing. Restricted to College of Engineering, Computing, Technology, and Mathematics students or departmental approval required. Credit Hours: 1

EET438A - Automatic Control Systems Technology The mathematical concepts and tools used to model and design automatic control systems. The mathematical models for electric, hydraulic, mechanical and thermal processes found in industry. The course uses Laplace transforms, transfer functions, block diagrams and signal flow graphs to represent systems, determine system response and design control systems. Prerequisites: EET 304B & EET 304BL with a C or better, or consent of instructor; EET 332A & EET 332AL. Co-requisite: EET 438AL. Credit Hours: 3

EET438AL - Automatic Control Systems Technology Lab This course gives student practical experience with the building blocks of control systems technology. Students construct analog hardware circuits that implement control and measurement functions used in automatic control systems. Software simulation tools allow students to construct mathematical models of physical systems and test their responses to input changes, disturbances and control system parameter variations. Prerequisites: EET 304B & EET 304BL with a C or better, or consent of instructor; EET 332 & EET 332AL. Co-requisite: EET 438A or consent of instructor. Credit Hours: 1

EET438B - Sequential Digital Control and Data Acquisition Concepts and components used in data acquisition and sequential control systems. The course covers sensors, signal conditioning, analog-

to-digital/digital-to-analog conversion devices, relay logic design and programmable logic controllers. Prerequisites: CS 202 or ENGR 222 or ECE 222 with a C or better; EET 438A & EET 438AL with a C or better, or consent of instructor. Co-requisite: EET 438BL. Credit Hours: 3

EET438BL - Sequential Digital Control and Data Acquisition Lab This course demonstrates the fundamentals of computer-based data acquisition and control using a high-level programming language. Students conduct experiments that utilize both analog and digital signals and construct user interfaces that display the results on personal computers. Students also learn the fundamentals of industrial sequential control programming as implemented in ladder logic on programmable logic controllers. Prerequisites: CS 202 or ENGR 222 or ECE 222 with a C or better; EET 438A & EET 438AL with a C or better, or consent of instructor. Co-requisite: EET 438B. Credit Hours: 1

EET439 - Microcontroller Application and Design This course introduces embedded systems design and microcontroller programming. Students study microcontroller architectures and design applications. The course emphasizes interfacing microcontrollers with sensors and actuators. Software tools like Matlab and Simulink aid in visualization and Model-Based Design. Prerequisites: EET 238 & EET 238L with a C or better; CS 202 or ENGR 222 or ECE 222 with a C or better; or consent of instructor. Co-requisite: EET 439L. Credit Hours: 3

EET439L - Microcontroller Application and Design Lab This course provides hardware and software activities that use a microcontroller development board. Students write programs in a high-level programming language that demonstrate the capabilities of the device and its subsystems. The course covers basic digital and analog signal interfacing, communication standards, power management, and digital/analog output interfacing. Processor development board required. Prerequisites: EET 238 & EET 238L with a C or better; CS 202 or ENGR 222 or ECE 222 with a C or better; or consent of instructor. Co-requisite: EET 439. Credit Hours: 1

EET440 - Embedded Systems Design This course introduces the hardware and software necessary to successfully design and construct simple embedded systems using commonly available devices and development tools. This course uses a microcontroller and its associated software development tools to design the hardware and firmware necessary to complete an embedded system. The course reviews the internal structure of the device and how it can be programmed using a high-level language. The course utilizes both the Atmel development tool suite and the Arduino framework to program microcontrollers. This course covers the interconnection of commonly encountered input/output devices connected to microcontrollers to achieve a functional system. Prerequisites: EET 439, EET 439L. Co-requisite: EET 440L. Credit Hours: 3

EET440L - Embedded Systems Design Lab The course provides practical experience in the integration of microcontrollers, sensors and actuators to create functional electromechanical systems. The course covers interfacing both analog and digital input devices, display systems, and actuators to a microcontroller. Students use development boards and software tools to program microcontroller systems that monitor and control the physical environment. Sensor, display, actuator kit required. Prerequisites: EET 439; CS 202 or ENGR 222 or ECE 222 or consent of instructor. Co-requisite: EET 440. Credit Hours: 1

EET445 - Computer-Integrated Manufacturing (Same as IMAE 445) Introduction to the use of computers in the manufacturing of products. Includes the study of direct and computer numerical control of machine tools as well as interaction with process planning, inventory control and quality control. Prerequisite: IMAE 208. Restricted to 3rd Year/4th Year standing. Restricted to College of Engineering, Computing, Technology, and Mathematics students or departmental approval required. Credit Hours: 3

EET455 - Industrial Robotics (Same as IMAE 455) Study of robotics within a wide variety of application areas. Topics covered include classification of robots, sensor technology, machine vision; control systems, including programmable logic controllers (PLCs); robot safety and maintenance; and economic justification of robotic systems. Prerequisite: None. Restricted to 3rd Year/4th Year standing. Restricted to College of Engineering, Computing, Technology, and Mathematics students or departmental approval required. Credit Hours: 3

Fashion Studies

FASH431 - Ethnic Dress The study of ethnic dress in non-western cultures, with attention to aesthetics, symbolism and uses of ethnic dress. Cultures studied may vary with each offering. May be repeated for credit. Credit Hours: 3

FASH432 - Historic Clothing: Western Cultures Development of clothing in Western civilization to 1850. Consideration of social, economic, aesthetic factors and technical innovations influencing clothing. Credit Hours: 3

FASH433 - History of Western Costume 1860 to Present Evolution of Western costume from 1860 through the present time. Emphasis on the interrelationship between costume, social, political, economic, and technical changes. Credit Hours: 3

Fermentation Science

FERM462 - Yeast Science and Technology An in-depth look at yeast from the perspective of fermentation science, with an emphasis on brewing science and technology. The effects of genetics will be examined with respect to how various strains and genetic mutations affect the fermentation process and the quality of the final product. The course will emphasize yeast metabolism and the various parameters and conditions that affect fermentation processes. Three hours lecture per week. Prerequisite: MICR 301 with a grade of C or better or consent of instructor. Concurrent enrollment in FERM 463 allowed. Credit Hours: 3

FERM463 - Yeast Science & Technology Lab The laboratory complement to FERM 462, Yeast Science & Technology. The laboratory will cover the techniques class dealing with yeast collection; storage and culturing will be covered from both theoretical and practical perspectives. One hour laboratory, in-class per week. Co-requisite or prerequisite: FERM 462 with a grade of C or better. Lab fee: $60. Credit Hours: 1

FERM489 - Brewing and Distilling Technology The primary focus of this course is to introduce basic facilities planning for operations of the brewing and distilling industry, and to gain management and technology insight in brewing/distilling production. Prerequisite: FERM 480 with a grade of C or better. Restricted to Junior/Senior standing in Ag Systems Technology or Fermentation Science and instructor approval. Credit Hours: 3

Health Care Management

HCM460 - Lean Six Sigma in Healthcare An introductory course focusing on the Lean Six Sigma approach to improving quality in healthcare organizations. An exploration of error prevention, problem solving, problem detection, change management, and effective and efficient process improvement. Cases will be used to demonstrate how the approach can be applied specifically to the healthcare industry. Restricted to Health Sciences majors or minors. Credit Hours: 3

HCM463 - Environment of Care A study of the elements important for a safe care environment, including the physical space, equipment, and people. Students will discuss how to examine and assess the care environment for environmental risks. Emphasis will be placed on the disinfection and sterilization process, employee/occupational health, and education of staff to ensure a safe care environment. Credit Hours: 3

HCM464 - Surveillance & IP Informatics Explores the use of surveillance technology to identify healthcare-acquired infections (HAIs) and other infection prevention data. Discusses how to develop a surveillance system based on risk assessment and systematic collection of data. Use of EHRs, clinical decision support systems, data warehouses, and predictive analysis related to infection prevention programs will be examined. Credit Hours: 3

HCM465 - Infection Prevention & Control Operations Examines the key elements of infection prevention and control programs within healthcare organizations. Students will study the basic principles of microbiology and the most common healthcare-acquired infections. Explores how infection prevention and control programs can control the spread of infectious pathogens within healthcare organizations.

Emphasis will be placed on developing programs to identify infection risks and implement infection interventions. Credit Hours: 3

HCM471 - Research of Social Responsibility in Healthcare Through use of research methodology and/or case study, students will examine critical issues related to the balancing of quality care with operational efficiency through the lens of ethics and social responsibility in the context of healthcare service delivery and the governance of healthcare organizations. Conflict resolution, critical thinking, and moral reasoning will be explored as applied to analyzing contemporary and global healthcare issues and applied to decision-making models in topic areas applicable to patient care environments. A writing intensive course that critically examines ways to ensure the most benefit and the least harm, achieve justice, eradicate disparity in healthcare, and assure transparency. Prerequisite: HCM 302, HCM 365, ENGL 101 (or higher) all with a grade of C or higher. Restricted to HCM major/minor. Credit Hours: 3

HCM499 - Individual Study Provides advanced health care management/informatics or administration students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Each student will work under the supervision of a sponsoring program faculty member approved by the HCM Program Director. Restricted to School of Health Sciences majors. Requires special permission from HCM Program Director. Credit Hours: 1-3

Horticulture

HORT410 - Urban Horticulture This class will provide students an understanding of growing edible and ornamental plants in urban landscapes. This course will focus on the value of horticulture in urban environments, and provide an overview of urban horticulture practices, with content focusing on the importance to ecosystem services and urban sustainability. The cultivation and management of both ornamental and edible plants will be discussed in the context of using best management practices to create resilient urban ecosystems. Students will also learn the social and economic value of sustainable horticulture systems and implications of creating better communities through urban horticulture. A 3- to 4-day field trip will be required to observe and learn about various current horticulture practices in an urban setting. Prerequisite: HORT 220. Field trip and lab fee: $195. Credit Hours: 3

HORT423 - Greenhouse Management Principles of greenhouse management controlling environmental factors influencing plant growth; greenhouses and related structures; greenhouse heating and cooling systems. Prerequisite: HORT 220 or consent of instructor. Lab fee: $40. Credit Hours: 3

HORT440 - Applied Greenhouse Management (Same as PSAS 440) Faculty led work experience at the SIUC Horticulture Greenhouses. The student can acquire practical professional training to complement their academic course work. Greenhouse management operations manual preparation will be a significant component of this course. Study will include: traditional greenhouse practices, green (living) walls & green roofs, nutrient film techniques, crop scheduling, biological pest control, pesticide application & safety. Prerequisite: HORT 423 or PSAS 423 with a grade of C or better or consent of instructor. HORT 423 or PSAS 423 may be taken concurrently. Lab fee: $75. Credit Hours: 3

HORT450 - Controlled Environment Agriculture Students learn basics of intensive, high-value crop production such as cannabis in artificial/controlled growing environments (e.g., greenhouse, high tunnel, or other indoor environment). Course covers greenhouse structures, their basic operation & fundamental environmental management, plant growth & maintenance, diseases & pests, and crop scheduling & production of high value, intensively grown plants. Course fee of $142 is required for supplies associated with hands-on laboratory exercises and travel expenses. Credit Hours: 3

Hospitality, Tourism, and Event Management

HTEM402 - Dimensions of Tourism In-depth examination of the components of the travel and tourism industry, motivators to travel and the various market segments will be explored. The economic, social, cultural and environmental impacts to tourism will be analyzed. Prerequisite: HTEM 202 or REC 302 or equivalent. Must be enrolled in one of the following Majors: Accounting (ACCT), Business and Administration (BNAD), Business Analytics (BSAN), Economics (ECON), Econometrics and Quantitative Economics (EQE), Finance (FIN), Hospitality, Tourism, & Event Management (HTEM), Management

(MGMT), Marketing (MKTG), Public Administration (PADM), Business Undecided (UNBA), Recreation Professions (REC). Credit Hours: 3

HTEM415 - Gaming Management Introduction to the main components involved in the management of gaming enterprises, including an overview of legalized casino gaming in the United States, profit structure of casinos, organizational structures, Louisiana gaming law, casino drop and count procedures, cage operations, suspicious activity reporting, slot and table games management, and race and sports book operations. Special emphasis to be placed on casino marketing and promotion of responsible gaming. Prerequisite: HTEM 202 with a grade of C or better. Restrictions: College of Business and Analytics majors or minors, or see a College of Business and Analytics advisor. Credit Hours: 3

HTEM435 - Hospitality Marketing Management This course concentrates on marketing for hotels, restaurants and tourism-related entities. Industry specific problems and characteristics will be examined. Students will develop a comprehensive marketing plan. The starting point for the development of hospitality marketing strategy assumes basic marketing knowledge has been derived from completing a previous marketing course. Prerequisite: HTEM 202, MKTG 304 or equivalent, and HTEM 351 with grades of C or better. Restrictions: College of Business and Analytics majors or minors, or see a College of Business and Analytics advisor. Credit Hours: 3

HTEM440 - Hospitality Risk Management Introduction to risk management, security, liability and contract management applicable to the awareness and/or operations of hotels, restaurants and resorts. Prerequisite: HTEM 202 with a grade of C or better. Restrictions: College of Business and Analytics majors or minors, or see a College of Business and Analytics advisor. Credit Hours: 3

HTEM445 - Sustainable Tourism Planning and Development This course focuses on sustainable tourism development as management of all resources in such a way that we can fulfill economic, social, and aesthetic needs while maintaining cultural integrity, essential ecological processes, biological diversity, and life support systems. Prerequisite: HTEM 202 with a grade of C or better or consent of instructor. Restrictions: College of Business and Analytics majors or minors, or see a College of Business and Analytics advisor. Credit Hours: 3

HTEM450 - Event Marketing and Sponsorships Strategic marketing and procurement of sponsors as they relate to events will be examined. Techniques related to association, corporation, and other special events will be analyzed and applied. Credit Hours: 3

HTEM451 - Festival Management Explore strategic planning, logistics, and marketing of local and community festivals. Develop memorable experiences that resonate with audiences and leave a lasting impact. Gain hands-on experience by assisting in the planning activities for festivals held at SIU Touch of Nature. Prerequisite: HTEM 202 or REC 302 or equivalent. Must be enrolled in one of the following Majors: Accounting (ACCT), Business and Administration (BNAD), Business Analytics (BSAN), Economics (ECON), Econometrics & Quantitative Economics (EQE), Finance (FIN), Hospitality, Tourism, & Event Management (HTEM), Management (MGMT), Marketing (MKTG), Public Administration (PADM), Business Undecided (UNBA), Recreation Professions (REC). Credit Hours: 3

HTEM452 - Advanced Festival Management Live entertainment event design including technology, marketing operations, sponsor and vendor relations, and risk management. Overall visitor experience will be explored through an event evaluation. Gain hands-on experience by planning and managing festivals held at SIU Touch of Nature. Prerequisite: HTEM 202 or REC 302 or equivalent. Must be enrolled in one of the following Majors: Accounting (ACCT), Business and Administration (BNAD), Business Analytics (BSAN), Economics (ECON), Econometrics & Quantitative Economics (EQE), Finance (FIN), Hospitality, Tourism, & Event Management (HTEM), Management (MGMT), Marketing (MKTG), Public Administration (PADM), Business Undecided (UNBA), Recreation Professions (REC). Credit Hours: 3

HTEM455 - Event Risk Management and Safety Techniques used to reduce event risk and liability and increase safety for event attendees will be discussed. Crowd control, fire safety, attendee behavior, food and beverage safety, emergency medical services, among others, will be explored. Restrictions: College of Business and Analytics majors or minors, or see a College of Business and Analytics advisor. Credit Hours: 3

HTEM461 - Service Organization and Management (Same as HND 461) Managerial aspects of the hospitality industry as related to provision of quality service. Organizational structures, management

techniques, decision-making abilities, ethics, leadership, and human resource issues are examined. Prerequisite: HTEM 202, HTEM 380 with a grade of C or better. Restricted to junior standing or consent. Restrictions: College of Business and Analytics majors or minors, or see a College of Business and Analytics advisor. Credit Hours: 3

HTEM465 - Convention Management and Services This course serves as a primer to the understanding of the role the meeting and convention planning business plays in hotel profitability. Students will explore successful procedures, practical insight, and foundational knowledge to succeed in convention management and services. Prerequisite: HTEM 202 with a grade of C or better. Restrictions: College of Business and Analytics majors or minors, or see a College of Business and Analytics advisor. Credit Hours: 3

HTEM470 - Facilities Management The course provides a comprehensive survey to manage the physical plants of hotels and food service establishments by working with the engineering and maintenance divisions in an effective and efficient manner. Areas of emphasis will include maintenance, energy conservation, environmental impact, and facilities management, with specific issues such as maintenance needs as they affect operations, property expenditures and resources, and a balance between guest satisfaction and environmental sustainability being addressed. Prerequisite: HTEM 202 with a grade of C or better or consent of instructor. Restrictions: College of Business and Analytics majors or minors, or see a College of Business and Analytics advisor. Credit Hours: 3

HTEM472 - Revenue Management in the Hospitality Industry Managing revenue is a vital aspect of the Hospitality industry. This important course in Revenue Management for the Hospitality Industry will help students understand how they can incorporate the principles of revenue management and best practices, as an integral and critical function in their hospitality establishment. The core of revenue management of a hospitality organization is to "charge the right price, to the right customer, for the right product, through the right channel, at the right time." This course will help students to develop, implement, evaluate and effectively manage revenues as a strategic management process. Prerequisites: ACCT 230, HTEM 273, and HTEM 372 with grades of C or better. Restrictions: College of Business and Analytics majors or minors, or see a College of Business and Analytics advisor. Credit Hours: 3

HTEM521A - Readings in Hospitality and Tourism-7-9 Year Literature Review Advanced seminar class and nine-year historical literature review of issues affecting the hospitality and tourism industry. Sections (A) through (C) may be taken only once each. Credit Hours: 3

HTEM521B - Readings in Hospitality and Tourism-4-6 Year Literature Review Advanced seminar class and nine-year historical literature review of issues affecting the hospitality and tourism industry. Sections (A) through (C) may be taken only once each. Credit Hours: 3

HTEM521C - Readings in Hospitality and Tourism-Current to 3 Year Literature Review Advanced seminar class and nine-year historical literature review of issues affecting the hospitality and tourism industry. Sections (A) through (C) may be taken only once each. Credit Hours: 3

HTEM531 - Hospitality Managerial Accounting Theory and practice of managerial accounting techniques in the hospitality industry. Credit Hours: 3

HTEM535 - Advanced Hospitality Marketing Management Analysis of marketing processes within hospitality, tourism and related organizations. Focus is on design and implementation of marketing research and analysis, as well as creation of the strategic marketing plan. Credit Hours: 3

HTEM545 - Economics of Sustainable Tourism Development Development of sustainable tourism destinations will be examined. Introduction to research methods involved in conducting economic impact studies, feasibility studies and conversion studies. Credit Hours: 3

HTEM551 - Strategic Destination Management Responsibilities of destination management organizations from an international perspective will be examined. Primary focus is destination product development and management. Destination competitiveness and marketing, specifically branding and positioning will also be discussed. Credit Hours: 3

HTEM560 - Advanced Food Service Management Course will provide opportunities in food service facility management to demonstrate leadership, financial management skills, food safety initiatives,

contingency planning, and marketing techniques. Topics include sustainable food service practices, human resource management, culinary techniques, HACCP planning and theories. Graduate students will experience a supervisory role while managing undergraduate students at food service facilities. Credit Hours: 3

HTEM561 - Service Organization and Management Covers topics such as motivation, group dynamics, leadership, organization structure, decision making, conflict resolution, and Organizational Development. Focus is on strategic leadership to prepare individuals and organizations to excel within a changing environmental landscape toward delivery of a quality service relationship. Credit Hours: 3

HTEM565 - Advanced Convention Management and Service Strategic relationships between meeting planner, client, facility and suppliers will be examined. Focus will be on a practical approach to convention planning and management. Students will be required to participate in planning as well as attending regional meetings. Credit Hours: 3

Human Nutrition and Dietetics

HND410 - Nutrition and Wellness Education This course explores research, theories and practices that influence human health behavior. Educational principles associated with behavior change including health literacy, assessing populations at risk, and designing effective health communication strategies are examined. Theories to explain human behavior, such as the Health Belief Model, Social Cognitive Theory, Transtheoretical Model, and Social Ecological Model will be studied, particularly as they relate to health education programming and how individual behavior is influenced. Prerequisite: HND 321. Credit Hours: 3

HND420 - Recent Developments in Nutrition Critical study of current scientific literature in nutrition. Prerequisite: HND 320. Credit Hours: 3

HND425 - Biochemical Aspects in Nutrition (Same as ANS 425) The interrelationship of cell physiology, metabolism and nutrition as related to energy and nutrient utilization, including host needs and biochemical disorders and diseases requiring specific nutritional considerations. Prerequisite: ANS 215 or HND 320, CHEM 140B, PHSL 201 and 208. Credit Hours: 3

HND445 - Nutrition for Sport and Exercise This course presents the metabolic and physiologic basis for macronutrient and micronutrient requirements during training, competition/performance, and recovery. The course begins with a brief overview of nutrition and exercise metabolism, followed by examination of nutritional requirements for sport and exercise, and concluding with a discussion of the practical aspects of nutrition related to athletes and exercise enthusiasts. Restricted to 3rd Year or 4th Year or Graduate Standing or permission of instructor. Credit Hours: 3

HND461 - Service Organization and Management (Same as HTEM 461) Managerial aspects of the hospitality industry as related to provision of quality service. Organizational structures, management techniques, decision-making abilities, ethics, leadership, and human resource issues are examined. Prerequisite: HTEM 202, HTEM 380 with a grade of C or better. Restricted to 3rd Year standing or consent. Credit Hours: 3

HND470 - Medical Nutrition Therapy I This is the first in a 2-course sequence of the study of pathophysiology and principles of medical nutrition therapy for various disease states. Application of Nutrition Care Process, nutrition screening and assessment, and medical record documentation. Prerequisite: HND 320, HND 321, AH 105, CHEM 140B, PHSL 201 and 208. Restricted to HND students. Credit Hours: 3

HND475 - Nutrition Through the Life Cycle This course will review nutrition during major phases of the life cycle. It will include units on: women's health during the preconception period pregnancy and lactation; infancy; childhood; adolescence; and older adults (65+). Students will complete life cycle projects and case studies for each phase of life throughout the course. Prerequisite: HND 320. Restricted to HND major. Credit Hours: 3

HND480 - Community Nutrition This course will provide a general foundation of Community Nutrition and how the Registered Dietitian/Community Nutritionist works in a community setting. This course will cover areas such as determining needs for nutrition education/intervention, public policy, supplemental

nutrition programs, funding and grant writing. Prerequisite: HND 475. Restricted to HND major. Credit Hours: 3

HND485 - Advanced Nutrition This course applies advanced principles of biochemistry and physiology to expand on basic nutrition information and explains the role of nutrients from cellular and mechanistic aspects. Prerequisite: HND 320, 425. Credit Hours: 3

HND486 - Food and Culture in Global Nutrition This course addresses the nature and scope of major nutrition issues, emphasizing the global perspective of the health, food, and nutritional status of various cultures and nutritional aspects of specific infectious and chronic diseases. The course will also study the correlation between health disparities and the availability and accessibility of the food system. The Legislative and regulatory food system policies, using current and emerging issues in global and public health nutrition, will also be discussed. Credit Hours: 3

HND490 - Practicum in Sport Nutrition and Wellness This is an opportunity to gain field experience in wellness and sports nutrition and collaborate with peers to share experiences and work through a variety of problems. It is a "capstone" course: one that brings together the theory, knowledge, and skills that you've gained through completion of the Nutrition curriculum that you may apply in a live setting. The goal of this course is to expose students to a variety of situations they may encounter in a wellness and/or sports nutrition profession. Restricted to 4th Year standing or instructor approval. Credit Hours: 3

HND495 - Nutrition and Obesity This course will examine the multifactorial etiology of obesity, its corresponding health consequences, and the role of diet in prevention and treatment of obesity and its related comorbidities. At the end of this course, students will be able to (i) understand basic physiological and metabolic concepts underlying the development of obesity; (ii) discuss the health consequences of obesity across the lifespan; and (iii) describe the nutrition-related approaches for prevention and treatment of obesity. Prerequisite: HND 425 or concurrent enrollment. Credit Hours: 3

Industrial Management and Applied Engineering

IMAE445 - Computer Integrated Manufacturing (Same as EET 445) Introduction to the use of computers in the manufacturing of products. Includes the study of direct and computer numerical control of machine tools as well as interaction with process planning, inventory control and quality control. Prerequisite: IMAE 208. Restricted to 3rd Year/4th Year standing. Restricted to College of Engineering, Computing, Technology, and Mathematics students or departmental approval required. Credit Hours: 3

IMAE450 - Project Management (Same as TRM 470) This course is designed to provide students with an overview of the project management process based on the knowledge areas/processes developed by Project Management Institute (PMI). This course further provides an in-depth examination of the activities needed to successfully initiate, plan, schedule, and control the time and cost factors of the project from a technical management perspective. Course emphasis using the content of the PMBOK prepares a student for the Certified Associate Project Management (CAPM) examination/certification. A grade of C or better is required. Credit Hours: 3

IMAE455 - Industrial Robotics (Same as EET 455) Study of robotics within a wide variety of application areas. Topics covered include classification of robots, sensor technology, machine vision; control systems, including programmable logic controllers (PLCs); robot safety and maintenance; and economic justification of robotic systems. Prerequisite: None. Restricted to 3rd Year/4th Year standing. Restricted to College of Engineering, Computing, Technology, and Mathematics students or departmental approval required. Credit Hours: 3

IMAE465 - Lean Manufacturing This course will cover the principles and techniques of lean manufacturing. Major topics covered include lean principles, 5S, value stream mapping, total productive maintenance, manufacturing/office cells, setup reduction/quick changeover, pull system/Kanbans, continuous improvement/Kaizen, lean six sigma, lean simulation, and other modern lean manufacturing techniques and issues. Restricted to 3rd Year/4th Year standing. Restricted to College of Engineering, Computing, Technology, and Mathematics students or departmental approval required. Credit Hours: 3

IMAE470A - Six Sigma Green Belt I Study the knowledge areas of Six Sigma Green Belt. Topics include six sigma goals, lean principles, theory of constraints, design for six sigma, quality function deployment, failure mode and effects analysis, process management, team dynamics, project management basics,

data and process analysis, probability and statistics, measurement system analysis, and process capability. Restricted to 3rd Year/4th Year standing. Restricted to College of Engineering, Computing, Technology, and Mathematics students or departmental approval required. Credit Hours: 3

IMAE470B - Six Sigma Green Belt II The objective of this course is to provide the student with a complete coverage of the statistical and analytical tools used and applied in the "Six Sigma" methodology at the green-belt level. Topics include: discrete probability distributions, continuous probability distributions, statistical process control tools, quality control charts, process capability analysis, gauge and measurement capability studies, cumulative sum control charts and exponentially-weighted moving average control charts. Prerequisite: IMAE 307 or MATH 140 or MATH 150, IMAE 470A or consent of instructor. Restricted to Junior/Senior standing. Restricted to students with 3rd Year or 4th Year or graduate standing in the College of Engineering, Computing, Technology, and Mathematics except when approved by department. Credit Hours: 3

Information Technology

ITEC431 - Applied Data Analytics with Python This course introduces students to applied data analytics using the Python programming language. Important topics include exploration of Python language fundamentals (lists, functions, packages, arrays, etc.), applications of data analytics techniques to gain business intelligence, and data visualization and representation in Python. A grade of C or better is required. Prerequisites: ITEC 209, ITEC 265, ITEC 371 all with a grade of C or better; or consent of instructor. Program lab fee: $20. Credit Hours: 3

ITEC432 - Applied Data Analytics with R This course is designed to help develop an understanding of fundamental data mining and data analytics methods and tasks. Important topics include data importing and exporting, data exploration, and data visualization. The lecture is complemented with hands-on learning experience with the use of the R language. A grade of C or better is required. Prerequisites: ITEC 209, ITEC 265, ITEC 371 all with a grade of C or better; or consent of instructor. Program lab fee: $20. Credit Hours: 3

ITEC452 - Research The selection, investigation, research, and writing on a specific topic approved by a faculty member. Special approval needed from instructor. A grade of C or better is required. Restricted to ITEC major. Credit Hours: 1-3

ITEC471 - Applied Data Analytics with Advanced SQL This course is designed to help develop an understanding of essential concepts and techniques of applied data analytics using advanced SQL analytic functions such as ranking, windowing, linear regression, hypothetical rand and distribution, etc. Students will gain hands on learning experience through formulating data analytics problems and building analytics queries in SQL. A grade of C or better is required. Prerequisites: ITEC 209, ITEC 265, ITEC 370 and ITEC 371 each with a grade of C or better, or consent of instructor. Credit Hours: 3

ITEC491 - Seminar Students will examine a variety of information technology topics and/or problems. Special approval needed from the instructor. A grade of C or better is required. Credit Hours: 3

ITEC501 - Cybersecurity Fundamentals This course discusses key concepts of cybersecurity, providing a solid foundation to understand security challenges and practical solutions to cybersecurity threats. Topics to be covered include risks and threats, governance and policy, laws, ethics and compliance, strategy and planning, disaster recovery and business continuity. Credit Hours: 3

ITEC502 - Secure Cloud Computing This course discusses both data security and software security. Topics include basic cryptography concepts, secure communications, data integrity and authentication, information storage security, fundamental design principles including least privilege, open design, and abstraction, security requirements and their role in design, implementation issues, static and dynamic testing, configuring and patching, and ethics, especially in development, testing and vulnerability disclosure. Credit Hours: 3

ITEC503 - Cyber Physical Systems Security This course addresses security concerns for cyber physical systems (CPS) and Internet of Things (IoT) devices including industrial control systems and those considered critical infrastructure systems. Topics include industrial networks and control theory, industrial network protocols, hacking and securing industrial control systems, privacy and legal issues in CPS and IoT. Students will complete multiple course projects both exploring security vulnerabilities and

developing security solutions for CPS and IoT. Prerequisite: ITEC 501 with a grade of C or better. Credit Hours: 3

ITEC504 - IT Project Management This course combines theory and techniques of project management emphasizing information technology applications. The course adheres to the Project Management Body of Knowledge (PMBOK). Course concepts are strengthened by the use of project management software. Credit Hours: 3

ITEC505 - Cybersecurity Metrics and Quantitative Approaches Cybersecurity metrics are tools designed to facilitate decision-making and improve performance and accountability. This course defines cybersecurity metrics, describes characteristics of effective metrics, discusses different types of metrics and where they are best used, and provides tips for communicating metrics to executives. Students will learn a collection of measurements to assess security performance based on data collected from various sources. Topics will also include how to measure a cybersecurity program's implementation, effectiveness, and impact, how to enable the assessment of cybersecurity programs and justify improvements to those programs, and how to bring visibility and awareness to the underlying issues of cybersecurity and highlight effective efforts through benchmarking, evaluation, and assessment of quantified data. Prerequisite: ITEC 502 with a grade of C or better. Credit Hours: 3

ITEC506 - Cyber Forensics This course covers cyber forensics investigation and response. Areas of study include concepts and procedures for investigating cyber crimes and methods for collecting, analyzing, preserving and reporting forensic evidence. Multiple courses projects will help students to get familiar with key tools and techniques, perform damage assessments and determine what was compromised, collect and document evidence, and develop incident response tactics and procedures of threat hunting. Prerequisites: ITEC 501 and ITEC 502 each with a grade of C or better. Credit Hours: 3

ITEC507 - Social Computing and Cyber Intelligence This course discusses aspects of cybersecurity that broadly impact society as a whole for better or for worse. Cybersecurity law, ethics, policy, privacy and their relation to each other are the key components of this course. Topics will include online communities, crowdsourcing platforms, algorithms for information dissemination, information elicitation, collection methods and techniques, open-source tools and risk analysis, threat taxonomy, decomposition and fusion, case studies in analysis and types of reports. Prerequisite: ITEC 502 with a grade of C or better. Credit Hours: 3

ITEC509 - Advanced Topics in Cybersecurity This course provides a survey of various advanced topics in cybersecurity. It allows students to investigate state-of-the-art research and development in the field as well as to apply techniques found in current research. Relevant topics may include data mining and log analysis, machine learning and intrusion prevention, predictive analytics of cloud security, risk management for social computing, and malware analysis tools. Prerequisite: ITEC 504 with a grade of C or better. Credit Hours: 3

ITEC511 - Cybersecurity Research Project This is a guided research project course. Students must seek approval from the Program Director before registering. This course presents an intensive experience during which students build a system they intend to be secure, and then attempt to show that other students' projects are insecure, by finding security flaws and vulnerabilities in them. Special approval needed from the Program Director. Credit Hours: 3

ITEC512 - Information Systems Development This course is designed to provide students with essential knowledge and pragmatic skills of information system analysis, design, and implementation. Topics include systems development life cycle methodologies, system analysis and modeling methods, technical design specifications development, and information systems integration. Credit Hours: 3

ITEC515 - Enterprise Architecture This course is designed to provide students with essential knowledge and pragmatic skills of information system analysis, design, and implementation. Topics include systems development life cycle methodologies, system analysis and modeling methods, technical design specifications development, and information systems integration. Credit Hours: 3

ITEC520 - Business Continuity & Disaster Recovery This course will provide students with an understanding of how an organization should prepare for all types of disruptions. Students will learn how

to establish a BC/DR program and how to evaluate existing and emerging standards to audit an existing or new BC/DR program. Credit Hours: 3

ITEC530 - IT Leadership & Management This course explores fundamentals of management for professionals in high-technology fields. It addresses the challenges of managing technical professionals and technology assets; human resource management; management of services, infrastructure, outsourcing, and vendor relationships; technology governance and strategy; and resource planning. Credit Hours: 3

ITEC531 - Financial Management for IT Professionals This course develops students' skills in financial management, budgeting, and procurement. The course teaches how to leverage financial knowledge to improve workplace decision-making and align spending and budgets with strategic initiatives. Credit Hours: 3

ITEC532 - Business Process Innovation This course introduces students to the key concepts and approaches of business process innovation (BPI) such as incremental improvement, process automation, and process redesign. BPI initiatives take place across three levels - the enterprise level, the process level, and the application infrastructure level. The focus of this course is on both understanding and designing business processes within these three levels of concern. This course has both a theoretical and a practical component. Students will learn theoretical process models such as the Business Process Modeling Notation (BPMN) and use them to design process innovations to achieve efficiency, effectiveness, compliance, and agility objectives. Credit Hours: 3

ITEC533 - IT Service Delivery This course will examine the application of industry standard frameworks to the management of information technology infrastructure, development and operations. Frameworks including the Information Technology Infrastructure Library (ITIL), Control Objectives for Information and related Technology (COBIT), and others will be covered. Students will learn to use these frameworks to tailor a set of concepts and policies necessary to manage IT in a specific enterprise. Credit Hours: 3

ITEC534 - IT Strategy Developing and executing an effective Information Technology (IT) strategy that enables business strategy is critical for creating business value and gaining competitive advantage. This course presents a framework and methodology for assessing, developing and implementing an effective IT strategy that is aligned with business needs. Credit Hours: 3

ITEC541 - Principles of Cryptography This course provides a broad introduction to cryptography. Students will learn how various cryptographic schemes work and explain how they are used in practice. The course focuses on the classical goals of cryptography such as data confidentiality, authenticity and integrity. Students who have completed CTEC 461 are ineligible to enroll. Prerequisites: ITEC 209 and ITEC 280 with grades of C or better. Credit Hours: 3

ITEC542 - Software Security This course provides a broad introduction of the theories and tools used for secure software design, threat analysis, secure coding, and vulnerability analysis. Students will be exposed to the techniques needed for the practice of effective software security approaches. Students who have completed CTEC 440 are ineligible to enroll. Prerequisite: ITEC 209 with a grade of C or better. Credit Hours: 3

ITEC543 - Cloud Security This course focuses on protecting data and applications in cloud-based systems. Areas covered include, but are not limited to, security management strategies, managing user access, securing networks and applications, and vulnerability management. Students who have completed CTEC 418 are ineligible to enroll. Prerequisites: ITEC 216 and ITEC 235 with grades of C or better. Credit Hours: 3

ITEC544 - Web Security This course focuses on technologies behind web applications and servers, how applications and servers are exploited, and the defense mechanisms, which can be used for server and application hardening. Hands-on labs on vulnerability detection and exploitation will provide practical experience. Students who have completed CTEC 410 are ineligible to enroll. Prerequisites: ITEC 216 and ITEC 236 with grades of C or better. Credit Hours: 3

ITEC545 - Wireless Communication and Security This course provides a comprehensive overview of wireless communications through an examination of the wireless channel, signal modulation, encoding and transmission techniques, antennae theory and error control. Uses of wireless technologies in local,

personal and mobile networks will be examined. An emphasis will be placed on security measures and techniques in wireless communications. Students who have completed CTEC 417 are ineligible to enroll. Prerequisites: ITEC 216 and ITEC 224 with grades of C or better. Credit Hours: 3

ITEC546 - Introduction to Machine Learning with Applications in Information Security This course provides a comprehensive overview of wireless communications through an examination of the wireless channel, signal modulation, encoding and transmission techniques, antennae theory and error control. Uses of wireless technologies in local, personal and mobile networks will be examined. An emphasis will be placed on security measures and techniques in wireless communications. Students who have completed CTEC 465 are ineligible to enroll. Prerequisites: ITEC 209 and ITEC 265 with grades of C or better. Credit Hours: 3

Microbiology

MICR403 - Medical Microbiology Lecture (Same as MBBS 403) A survey of the more common bacterial, mycotic and viral infections of humans with particular emphasis on the distinctive properties, pathogenic mechanisms, epidemiology, immunology, diagnosis and control of disease-causing microorganisms. Three hours lecture. Spring semester. Prerequisite: MICR 301, or consent of instructor. Credit Hours: 3

MICR405 - Clinical Microbiology (Same as MBBS 405) This course will be offered in Springfield only. A comprehensive course for health science professionals covering the biology, virulence mechanisms, and identification of infectious agents important in human disease and host-defense mechanisms. Clinical applications emphasized. Three hours lecture. Prerequisite: MICR 301, or consent of instructor. Credit Hours: 3

MICR421 - Biotechnology (Same as MBBS 421) Topics covered will include the genetic basis of the revolution in biotechnology, medical applications including genetic screening and therapeutic agents, industrial biotechnology and fermentation, and agricultural applications. Three hours lecture. Fall semester. Prerequisite: MICR 302, or consent of instructor. Credit Hours: 3

MICR423 - Geomicrobiology (Same as MBBS 423 and GEOL 423) The course will focus on the role that microorganisms play in fundamental geological processes. Topics will include an outline of the present understanding of microbial involvement of weathering of rocks, formation and transformation of soils and sediments, and genesis and degradation of minerals. Elemental cycles will also be covered with emphasis on the interrelationships between the various geochemical cycles and the microbial trophic groups involved. Prerequisite: MICR 301 and CHEM 210 and 211. Recommended: GEOL 220, 221 or 222. Credit Hours: 3

MICR453 - Immunology Lecture (Same as MBBS 453) Principles of molecular and cellular immunology. Particular emphasis is given to molecular mechanisms involved in activation and maintenance of the immune response at the basic science level. The role of the immune system in medical diagnostic procedures and in human health is also discussed. Spring semester. Prerequisite: MICR 403, or consent of instructor. Credit Hours: 3

MICR454 - Soil Microbiology (Same as CSEM 454, PSAS 454) A study of microbial numbers, characteristics, and biochemical activities of soil microorganisms with emphasis on transformation of organic matter, minerals, and nitrogen in soil. Prerequisite: MICR 301 or CSEM 240. Lab fee: $15. Credit Hours: 4

MICR455 - Medical Immunology This course will be offered in Springfield only. A survey of the components of the immune system and how they interact with each other to produce responses that are important in the control or mediation of human disease. Two hours lecture. Prerequisite: MICR 301 or consent of instructor. Credit Hours: 2

MICR460 - Bacterial and Viral Genetics (Same as MBBS 460) The genetic mechanisms and regulatory events that control gene transfer, lambda phage infection, recombination, and metabolic pathways including a brief introduction to bioinformatics, genome analysis and global regulatory functions. Three hours lecture. Fall semester. Prerequisite: MICR 301 and 302, or consent of instructor. Credit Hours: 3

MICR470 - Prokaryotic Diversity Lecture (Same as MBBS 470) A consideration of the major groups of prokaryotes with special emphasis on their comparative physiology and ecology. Three hours lecture. Spring semester. Prerequisite: MICR 301 or consent of instructor. Credit Hours: 3

MICR477 - Microbial Ecology Concepts of ecology applied to microorganisms; methods in microbial ecology; interactions of microbes with their living and non-living environment; microbial habitats and functions. Roles and regulation of microbes in natural and man-made environments, from cellular to community level. Prerequisite: MICR 301 or instructor's consent (based on proven background in both microbiology and ecology). Credit Hours: 3

Quantitative Methods

QUAN402 - Basic Statistics A master's level terminal statistics course. Emphasis on descriptive statistics, graphical representation of data, correlation, and simple regression. Includes an introduction to hypothesis testing procedures and analysis of variance. Credit Hours: 3

QUAN506 - Inferential Statistics Covers basic descriptive techniques such as central tendency, measures of variability and graphical presentation of data. In addition, hypothesis testing, analysis of variance, nonparametrics and simple linear prediction will be covered. Credit Hours: 4

QUAN507 - Multiple Regression The general linear model is presented which allows for hypothesis testing including correlational analysis, analysis of variance and analysis of covariance. Non-linear relationships are presented. Emphasis is placed on testing the stated research hypotheses. Prerequisite: QUAN 506 or PSYC 522. Credit Hours: 4

QUAN508 - Experimental Design (Same as PSYC 522) Strategies of designing research studies and the analysis of data from studies using linear models are examined. Emphasis will be placed on internal and external validity and factors that affect power in variance designs including completely randomized designs, Latin square, repeated measures and analysis of covariance with each of the above designs. Prerequisite: QUAN 506 or equivalent. Credit Hours: 4

QUAN531 - Principles of Measurement (Same as PSYC 525) Intended to provide theoretical principles of measurement which are applicable to both teaching and research. Part of the course will be devoted to current issues in measurement and to practical applications to these theoretical principles. Prerequisite: QUAN 506 or PSYC 522. Credit Hours: 3

QUAN533 - Survey Research Methods Overview of survey methods covering topics such as the purpose of survey research methods, the process of survey research, ethical considerations in survey research, questionnaire design and administration, sampling designs, data processing, and reporting of survey research. Prerequisite: QUAN 506 or PSYC 522 & QUAN 531 or PSYC 525, or equivalent. Credit Hours: 3

QUAN580A - Doctoral Seminar in Quantitative Methods-Structural Equation Modeling A series of advanced seminars on statistics and measurement. Sections A through H may be taken only once each. Section I may be repeated as topics vary. Prerequisite: QUAN 507. Credit Hours: 3-4

QUAN580B - Doctoral Seminar in Quantitative Methods-Factor Analysis A series of advanced seminars on statistics and measurement. Sections A through H may be taken only once each. Section I may be repeated as topics vary. Prerequisite: QUAN 507. Credit Hours: 3-4

QUAN580C - Multilevel Modeling A series of advanced seminars on statistics and measurement. Sections A through H may be taken only once each. Section I may be repeated as topics vary. Prerequisite: QUAN 507 with a grade of B- or better. Credit Hours: 3-4

QUAN580D - Doctoral Seminar in Quantitative Methods-Bayesian Inference A series of advanced seminars on statistics and measurement. Sections A through H may be taken only once each. Section I may be repeated as topics vary. Prerequisite: QUAN 507. Credit Hours: 3-4

QUAN580E - Doctoral Seminar in Quantitative Methods-Program Evaluation A series of advanced seminars on statistics and measurement. Sections A through H may be taken only once each. Section I may be repeated as topics vary. Prerequisite: QUAN 531 or PSYC 525. Credit Hours: 3

QUAN580F - Doctoral Seminar in Quantitative Methods-Advanced Experimental Design A series of advanced seminars on statistics and measurement. Sections A through H may be taken only once each. Section I may be repeated as topics vary. Prerequisite: QUAN 508 or PSYC 522. Credit Hours: 3-4

QUAN580G - Doctoral Seminar in Quantitative Methods-Item Response Theory A series of advanced seminars on statistics and measurement. Sections A through H may be taken only once each. Section I may be repeated as topics vary. Prerequisite: QUAN 531 or PSYC 525. Credit Hours: 3

QUAN580H - Doctoral Seminar in Quantitative Methods-Monte Carlo and Simulation Techniques A series of advanced seminars on statistics and measurement. Sections A through H may be taken only once each. Section I may be repeated as topics vary. Prerequisite: QUAN 507. Credit Hours: 3-4

QUAN580I - Doctoral Seminar in Quantitative Methods-Selected Topics A series of advanced seminars on statistics and measurement. Sections A through H may be taken only once each. Section I may be repeated as topics vary. Prerequisite: QUAN 507. Credit Hours: 2-6

QUAN592 - Independent Study and Investigation For advanced graduate students. Topics of interest to the individual student are studied under supervision of a department staff member. Special approval needed from the department. Credit Hours: 1-6

QUAN593 - Individual Research For advanced graduate students in Quantitative Methods. Formulating, investigating and reporting of research problems in the area of Quantitative Methods. Special approval needed from the department. Credit Hours: 1-4

QUAN600 - Dissertation Credit Hours: 1-16

QUAN601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Science

SCI500 - Science Information Sources Methods and procedures to efficiently exploit the scientific literature are discussed. The two-hour class discussion will be supplemented by practical exercises in library usage. Special approval needed from the instructor. Credit Hours: 2

SCI501A - Research Transmission Electron Microscopy Theory of design of electron microscope, lenses, vacuum systems, alignment, specimen preparation and darkroom. Credit Hours: 2

SCI501B - Research Transmission Electron Microscopy Practical experience in use of transmission electron microscope and specimen preparation. Credit Hours: 2

SCI502A - Research Scanning Electron Microscopy Theory of design for scanning electron microscope, lenses, vacuum systems, alignment, specimen preparation for biologists and materials scientists, darkroom. Laboratory fee: $100. Credit Hours: 2

SCI502B - Research Scanning Electron Microscopy Laboratory practical experience in use of scanning electron microscope and specimen preparation. Laboratory fee: $100. Credit Hours: 2

SCI503A - Science for Elementary School Teachers In-depth studies of selected basic concepts in general science for teachers of upper-level elementary grades. Topics include cells and simple organisms, characteristics of vertebrates, plate tectonics, solar system, nature of matter and magnetism. Prerequisite: currently teaching in an elementary school. Credit Hours: 1-3

SCI503B - Science for Elementary School Teachers In-depth studies of selected basic concepts in general science for teachers of upper-level elementary grades. Topics include human biology,

characteristics of high plants, Earth's building blocks, the atmosphere, forces and simple machines. Prerequisite: currently teaching in an elementary school. Credit Hours: 1-3

SCI504A - Selected Topics in Science for Teachers-Basic Stream Ecology (1 to 3 credits per topic). The course consists of selected basic concepts in general science for practicing teachers. Within a given semester a broad area is selected within either the biological sciences or the physical/earth sciences. Other topics may be added as deemed necessary. This course may not be used for graduate credit by College of Agricultural, Life, and Physical Sciences majors. Prerequisite: currently teaching in an elementary school. Credit Hours: 1-3

SCI504B - Selected Topics in Science for Teachers-Biological Assessment of Polluted Streams (1 to 3 credits per topic). The course consists of selected basic concepts in general science for practicing teachers. Within a given semester a broad area is selected within either the biological sciences or the physical/earth sciences. Other topics may be added as deemed necessary. This course may not be used for graduate credit by College of Agricultural, Life, and Physical Science majors. Prerequisite: currently teaching in an elementary school. Credit Hours: 1-3

SCI504C - Selected Topics in Science for Teachers-Wetland Ecosystems (1 to 3 credits per topic). The course consists of selected basic concepts in general science for practicing teachers. Within a given semester a broad area is selected within either the biological sciences or the physical/earth sciences. Other topics may be added as deemed necessary. This course may not be used for graduate credit by College of Agricultural, Life, and Physical Sciences majors. Prerequisite: currently teaching in an elementary school. Credit Hours: 1-3

Spanish

SPAN401 - Studies on a Selected Topic A topic related to Hispanic cinema, literature, linguistics, or translation. Topic announced in advance. Credit Hours: 3-12

SPAN430 - Golden Age: Drama Plays of Lope de Vega, Calderon, Tirso de Molina, and others. Prerequisite: A grade of C- or better in SPAN 320B, or equivalent. Credit Hours: 3

SPAN451 - Studies in Latin American Literature of the 19th Century Modernism, Romanticism, Realism and Naturalism in Spanish America. Intensive study of a literary movement, trend, genre, or author of the period, as specified by the topic to be announced for each semester. Prerequisite: a grade of C- or better in SPAN 320B or equivalent. Credit Hours: 3. Credit Hours: 3

SPAN461 - Studies in Latin American Literature of the 20th Century The main currents and outstanding works in the literature of Spanish America since 1900. Prerequisite: a grade of C- or better in SPAN 320B or equivalent. Credit Hours: 3. Credit Hours: 3

SPAN465 - Post-War and Contemporary Spanish Literature and Culture The study of important literary, philosophical, and artistic works of the post-war period and beyond, and of the socio historical context in which they were produced. Prerequisite: a grade of C- or better in SPAN 320B or equivalent. Credit Hours: 3. Credit Hours: 3

SPAN475 - Travel-Study in Latin America or Spain Travel-study course or project planned under supervision of Spanish faculty and carried out in a Spanish-speaking country. Credit Hours: 3-6

SPAN490 - Advanced Independent Study Individual exploration of some topic in Hispanic literature, language, or culture. Special approval needed from the instructor. Credit Hours: 1-3

SPAN501 - Studies of a Selected Topic A topic related to Hispanic cinema, literature, linguistics, or translation. Topic announced in advance. Credit Hours: 3

SPAN511 - Linguistic Structure of Spanish A comprehensive introduction to the study of various aspects of Spanish such as phonology, morphology, and syntax with a special emphasis on sociolinguistic variation. Theoretical implications of formal and functional linguistics will be discussed in relation to theories of sociolinguistic variation including colonial, post-colonial, and other contact-varieties of Spanish. Credit Hours: 3

SPAN512 - History of the Spanish Language This course examines the biological journey of Spanish and Spanish-based languages including topics on how Spanish emerged, and how different varieties of Spanish change, diffuse, and die. It explores models of biodiversity and phylogenetics applied to Spanish linguistics, historical linguistics models and current trends in contact linguistics to explore social dynamics of Spanish language change. Credit Hours: 3

SPAN520 - Literature of the Middle Ages Studies in epic and didactic literature, and lyric poetry, from the origins of Spanish literature to the fifteenth century. Representative works such as the Cantar de M? Cid, Libro de buen amor, Romancero viejo and La Celestina will be studied. Credit Hours: 3

SPAN530 - The Golden Age: Drama Study and discussion of plays by Lope de Vega, Tirso de Molina, Calder?and other Golden Age playwrights. Credit Hours: 3

SPAN531 - Cervantes Study of Miquel de Cervantes' masterpiece "Don Quixote" and of other Cervantine works. Credit Hours: 3

SPAN532 - The Golden Age: Prose and Poetry Appreciation and analysis of the poetry of Garcilaso de la Vega, Fray Luis de Le?G?ra, Quevedo, and of narrative forms such as picaresque fiction, pastoral fiction, and Moorish fiction. Credit Hours: 3

SPAN534 - Colonial Literature Study of the literature of Latin America before 1825. Credit Hours: 3

SPAN550 - Neoclassicism and Romanticism in Spain Eighteenth and nineteenth century Spanish literature. Credit Hours: 3

SPAN551 - Spanish-American Literature of the 19th Century Intensive study of a literary movement, trend, genre, or author of the period, as specified by the topic to be announced for each semester. Credit Hours: 3

SPAN555 - Spanish Realism and Naturalism Late nineteenth century Spanish literature. Credit Hours: 3

SPAN560 - Modern Spanish Literature and Culture (1898 to the Spanish Civil War) The Generations of '98 and '27. Credit Hours: 3

SPAN561 - Spanish-American Literature of the 20th Century Intensive study of a literary movement, trend, genre, or author of the period, as specified by the topic to be announced for each semester. Credit Hours: 3

SPAN565 - Post-War and Contemporary Spanish Literature and Culture The study of important literary, philosophical, and artistic works of the post-war period and beyond, and of the socio historical context in which they were produced. Credit Hours: 3

SPAN570 - Culture and Civilization The cultural patterns and heritage of the Hispanic peoples from earliest times to the present. Credit Hours: 3

SPAN601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

Special Education

SPED405 - Introduction to Early Childhood Special Education Methods: Infants, Toddlers, and Preschoolers with This course focuses on effective methods, materials and programs for infants, toddlers, and preschoolers with special needs, including IEPs, IFSPs, working with families, service delivery, case-management, transition planning, and curriculum methods and procedures. Prerequisite: SPED 412 or consent of instructor. Credit Hours: 3

SPED408 - Characteristics and Methods for Teaching Exceptional Children (Same as EDUC 308) For pre-service teachers who serve children and youth with disabilities. The course focuses on essential

disability characteristics, data-based decision-making, scientifically-based academic and behavioral interventions and strategies to differentiate instruction and accommodate learners with disabilities in general education classrooms. Credit Hours: 3

SPED409 - Cross-Cultural Studies Seminar and/or directed independent study concerned with socio-cultural variables affecting the educational needs of children and youth with a disability. Prerequisite: SPED 300 or consent of instructor and department chair. Credit Hours: 1-6

SPED410 - Instructional Planning for Students with Disabilities This course presents the learning characteristics of children and youth with learning disabilities, emotional/behavior disorders, intellectual disabilities and autism spectrum disorders. Instructional planning, classroom management and integration of related services will be examined. Prerequisite: SPED 300 or 420 or concurrent enrollment. Credit Hours: 3

SPED411 - Assessment in Special Education Course covers general assessment information, norm reference testing, curriculum based assessment, adaptive behavior scales and issues relating to cultural diversity. Prerequisite: SPED 300 or 420, and 410 with a grade of C or better. Laboratory fee: $15. Credit Hours: 3

SPED412 - Introduction to Assessment and Curriculum Methods in Early Childhood Special Education This course presents an introduction to child and family assessment and the development of child and family goals in Early Childhood Special Education. Topics will include types of assessment commonly used, rationale for assessment, methods of assessment, reporting assessment results, writing child and family goals. A fee for testing materials is required. Prerequisite: SPED 300/420 or concurrent enrollment or consent of instructor. Fee: $15. Credit Hours: 3

SPED417 - Behavior Management for Children and Youth with Disabilities This course focuses on the implementation of behavior management strategies and tactics to be used with students with disabilities in a variety of educational environments. Prerequisite: SPED 300 or 420, 410, 411, 423, and must be admitted to the TEP as a special education major, or consent of instructor. Credit Hours: 3

SPED418 - Methods and Materials for Teaching a Functional Curriculum This course covers the principles of curriculum construction, program development and evaluation, classroom organization, instructional approaches, strategies and materials for teaching a functional curriculum. Prerequisite: SPED 300 or 420, 410, and 423, and must be admitted to the TEP as a special education major, or consent of instructor. Credit Hours: 3

SPED419 - Academic Methods and Materials for Student with Disabilities This course covers the academic methods, materials and strategies used with students with disabilities receiving special education services in school and community settings. Prerequisite: SPED 300 or 420, 410, 411, 423 and must be admitted to the Teacher Education Program as a special education major. Credit Hours: 3

SPED420 - Advanced Theories and Practices in Special Education The course is an advanced survey of exceptional populations and addresses educational, social, legal, cultural, and community practices associated with individuals with disabilities, ages 0 - 21 years old. Restricted to graduate students (SPED 300 for undergraduate students). Credit Hours: 3

SPED423 - General Procedures in Special Education Presents key provisions of Public Law 94-142 and subsequent amendments, including Individualized Education Programs (IEPs). Course content also includes principles of applied behavior analysis and effective instruction of students with disabilities. Prerequisite: SPED 300 or 420, 410, 411 or concurrent enrollment. Credit Hours: 3

SPED425 - Home-School Coordination in Special Education The course covers techniques used in parent interviews, conferences and referrals by school personnel; due process and procedural safeguards for parents and youth with disabilities. Prerequisite: SPED 300 or 420, 410, 411, 423 with grades of C or better or concurrent enrollment. Credit Hours: 3

SPED430 - Secondary Programming for Students with Disabilities Deals with modifications of and additions to school programs to ensure that they are appropriate to the needs of adolescents with disabilities. Content includes coverage of remedial and compensatory program models, transition

programming, career and vocational education. Prerequisite: SPED 300 or 420, 410, 411, 423 with grades of C or better or concurrent enrollment. Credit Hours: 3

SPED431 - Work-Study Programs for Adolescents Labeled Severely Disabled This course is designed to prepare educators and other human service professionals to assist adolescents and young adults with severe disabilities for community integrated employment options. Content will include community-referenced curriculum objectives, community-based instruction for employment and functional skill development. Credit Hours: 3

SPED494A - Practicum in Special Education-Assessment This course includes clinical experiences in public school and community settings in the selection, administration and interpretation of norm-referenced and curriculum-based assessments, adaptive behavior scales, behavior rating scales and checklists and issues relating to cultural diversity. Prerequisite: SPED 300 or 420 and 410 with grades of C or better. Credit Hours: 1

SPED494B - Practicum in Special Education-Functional Curriculum This course includes clinical experiences in public school and community settings in planning, implementing and instructing a functional curriculum. Prerequisite: SPED 300 or 420, 410, 411, 423 and must be admitted to Teacher Education Program. Credit Hours: 1

SPED495 - Internship in Special Education An applied experience for students seeking certification in special education through alternative or subsequent certificate routes. Students will be required to complete a set of activities and prepare a number of products appropriate for the special education program and/or students with disabilities being served in the internship placement. Students will be expected to complete a portfolio of products to demonstrate professional competence. Special approval needed from the Program Coordinator. Credit Hours: 1-6

SPED501 - Methods and Materials for Persons with Severe Behavior Challenges Deals with methods, materials and instructional management practices common to the instruction and management of student experiencing severe behavioral challenges in the schools and in residential settings. Credit Hours: 3

SPED505 - Organizing and Implementing Early Childhood Special Education Programs This course presents theoretical frameworks and current best practices involved in the development, implementation and evaluation of Early Childhood Special Education programs. Content will include discussion of models of teaming, ethical issues, interagency coordination, transition, mentoring and supervision. Prerequisite: SPED 300 or SPED 420, SPED 412 and SPED 405. Credit Hours: 3

SPED511A - Advanced Instructional Design and Methodology for Students with Disabilities Advanced study of evidence-based practices related to the development and delivery of effective educational programs for students with mild disabilities. Emphases will include instructional design, instructional strategies and techniques, include the use of technology to meet educational needs of students with mild disabilities. Credit Hours: 3

SPED511B - Curriculum for Instructional Remediation of Learners with Disabilities Advanced study of curriculum and curricular approaches to meeting the educational needs of students with mild disabilities in special education and general education classrooms. Emphasis include academic and functional curriculum for basic skills and content areas, direct instruction and curriculum modifications and adaptations. Credit Hours: 3

SPED512 - Advanced Child and Family Assessment, Curriculum Methods and Evaluation in Early Childhood Special E This course presents advanced coursework and practical experiences in child and family assessment, selection of curricula, and evaluation in Early Childhood Special Education. Students will review current assessment and curriculum packages, conduct evaluations and write assessment reports. Practical experience will be an integral part of this course. Prerequisites: SPED 300 or 420, 405 and 412. Credit Hours: 3

SPED513 - Organization, Administration, and Supervision in Special Education Emphasis upon the functions, underlying principles and cautions to be observed in the organization and administration of special education. The selecting and training of teachers, problems of supervision, special equipment,

transportation, cooperating agencies and legal aspects of the problem. Prerequisite: SPED 300 or SPED 420. Special approval needed from program coordinator. Credit Hours: 3

SPED514 - Simulation of Administrative Tasks in Special Education Development of skills required of special education administrators and supervisors through the use of simulation materials focusing on developing administrative skills. Prerequisite: SPED 300 or 420. Special approval needed from program coordinator. Credit Hours: 3

SPED515 - Collaboration-Based Delivery Systems in Special Education Designed to provide students with a thorough knowledge and skill base in the collaboration process including problem-solving processes, communication skills and conflict resolution skills. Collaboration-based approaches will be examined as alternative systems and methods of meeting the educational needs of students with disabilities within a continuum of special education services. Credit Hours: 3

SPED516 - Advanced Assessment for Diverse Learners Develop practitioner's knowledge and skills to develop and implement standardized and informal assessment systems to guide program planning and instructional decision-making for students with disabilities in regular and special education programs. Furthermore, practitioners will identify, utilize, and implement modifications and accommodations to facilitate students' performance on informal and standardized assessment tools. Prerequisite: SPED 411 or consent of instructor. Credit Hours: 3

SPED517 - Systems of Care for Exceptional Children and Youth Survey and examination of social agencies and models of service delivery contributing to the welfare and care of exceptional children and youth. Emphasis will be given to models, services, and organization of system of care serving youth with disabilities. Credit Hours: 3

SPED550 - Behavior Management of Exceptional Children and Youth This course deals with assessment, implementation, and monitoring procedures involved with the use of behavior change techniques in special education programming. Emphasis will be placed on the actual implementation of behavior change techniques with school aged students with disabilities. Special approval needed from the instructor. Credit Hours: 3

SPED578 - Legal Framework for Special Education Services Covers state and federal statutes and regulations including IDEA, Section 504: The Rehabilitation Act of 1973, and No Child Left Behind Act, as well as current legislation and litigation with respect to provision of educational services for children and youth/young adults with disabilities. Prerequisite: SPED 300 or SPED 420, or consent of instructor. Credit Hours: 3

SPED580 - Master's Seminar: Issues and Trends in Special Education Analysis of research, trends, and programs in the education of children with disabilities. Open to graduate students in special education or related field. Prerequisite: SPED 300 or 420. Credit Hours: 3

SPED582 - Post-Master's Seminar: Theories and Models in Special Education Critical discussion of eight major intervention models used historically and currently with handicapped children in educational settings. Special approval needed from the instructor. Credit Hours: 3

SPED583 - Post-Master's Seminar: Program Coordination in Special Education Analysis of organizational principles and practices required for the creation and maintenance of programs to meet the needs of persons who are handicapped and require specialized educational programs within the school setting. Special approval needed from the instructor. Credit Hours: 3

SPED584 - Issues in International Special Education This course is designed to examine major aspects of disability theory and issues in international special and inclusive education. It provides current knowledge on disability models, as well as on special educations systems world-wide; it examines historical patterns, the international human rights law and country legislation, cultural issues and intervention practices related to special education; it reviews major concepts, issues and debates in the international field of special education. Credit Hours: 3

SPED586 - Proseminar in Special Education A topical seminar providing for the systematic discussion of current research in the field of special education. Specific content is determined by participating faculty and students, relative to current faculty research and dissertations in progress within the department.

Doctoral students will register for a total of four credit hours, one per semester, after which they will audit the course during the pursuit of their dissertation. Master's students admitted with special approval from the adviser and department chair. Credit Hours: 1-4

SPED590 - Readings in Special Education Study of a highly specific problem area in the education of exceptional children. Open only to graduate students. Graded S/U only. Prerequisite: SPED 300 or 420. Special approval needed from the instructor. Credit Hours: 1-6

SPED591 - Independent Investigation A field study for graduate students. Conducted in a school system where full cooperation is extended. The study will involve selection of a problem, surveying pertinent literature, development of experimental design and procedures, recording results and appropriate interpretations and summaries. Special approval needed from the instructor. Credit Hours: 1-6

SPED594A - Practicum in Special Education-Behavior Interventions A capstone field-based experience for special educators seeking advanced preparation in the field of special education. Student will select the appropriate practicum experience as appropriate for his/her program of study or Learning Behavior Specialist II certification. Credit Hours: 1-6

SPED594B - Practicum in Special Education-Curriculum Adaptation A capstone field-based experience for special educators seeking advanced preparation in the field of special education. Student will select the appropriate practicum experience as appropriate for his/her program of study or Learning Behavior Specialist II certification. Credit Hours: 1-6

SPED594D - Practicum in Special Education-Early Childhood Special Education A capstone field-based experience for special educators seeking advanced preparation in the field of special education. Student will select the appropriate practicum experience as appropriate for his/her program of study or Learning Behavior Specialist II certification. Credit Hours: 1-6

SPED594E - Practicum in Special Education-Supervision A capstone field-based experience for special educators seeking advanced preparation in the field of special education. Student will select the appropriate practicum experience as appropriate for his/her program of study or Learning Behavior Specialist II certification. Credit Hours: 1-6

SPED595A - Internship-Research and Applied Studies The doctoral internship is a required experience. Internship hours do not apply to minimum needed for graduation. Each student shall engage in specialized service areas within a school system, university, state office, federal office, or private agency. Interns will participate in regularly scheduled on-campus or on-site seminars with the university and field internship supervisors. Credit Hours: 1-6

SPED595B - Internship-Evaluation The doctoral internship is a required experience. Internship hours do not apply to minimum needed for graduation. Each student shall engage in specialized service areas within a school system, university, state office, federal office, or private agency. Interns will participate in regularly scheduled on-campus or on-site seminars with the university and field internship supervisors. Credit Hours: 1-6

SPED595C - Internship-Administration The doctoral internship is a required experience. Internship hours do not apply to minimum needed for graduation. Each student shall engage in specialized service areas within a school system, university, state office, federal office, or private agency. Interns will participate in regularly scheduled on-campus or on-site seminars with the university and field internship supervisors. Credit Hours: 1-6

SPED595D - Internship-University Teaching The doctoral internship is a required experience. Internship hours do not apply to minimum needed for graduation. Each student shall engage in specialized service areas within a school system, university, state office, federal office, or private agency. Interns will participate in regularly scheduled on-campus or on-site seminars with the university and field internship supervisors. Credit Hours: 1-6

SPED595E - Internship-Program Planning and Management The doctoral internship is a required experience. Internship hours do not apply to minimum needed for graduation. Each student shall engage in specialized service areas within a school system, university, state office, federal office, or private

agency. Interns will participate in regularly scheduled on-campus or on-site seminars with the university and field internship supervisors. Credit Hours: 1-6

SPED595F - Internship-Supervision The doctoral internship is a required experience. Internship hours do not apply to minimum needed for graduation. Each student shall engage in specialized service areas within a school system, university, state office, federal office, or private agency. Interns will participate in regularly scheduled on-campus or on-site seminars with the university and field internship supervisors. Credit Hours: 1-6

SPED595G - Internship-Specialized Delivery Systems The doctoral internship is a required experience. Internship hours do not apply to minimum needed for graduation. Each student shall engage in specialized service areas within a school system, university, state office, federal office, or private agency. Interns will participate in regularly scheduled on-campus or on-site seminars with the university and field internship supervisors. Credit Hours: 1-6

SPED599A - Thesis Independent hours to be taken under the supervision of the student's Master's degree chair for the purpose of conducting and writing the Master's thesis. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-6

SPED599B - Research Paper Independent hours to be taken under the supervision of the student's Master degree chair for the purpose of conducting and writing the Master's research paper. Graded S/U only. Special approval needed from the instructor. Credit Hours: 1-6

SPED600 - Dissertation Special approval needed from the chair. Credit Hours: 1-16

SPED601 - Continuing Enrollment For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Credit Hours: 1

SPED699 - Postdoctoral Research Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted. Credit Hours: 1

Women, Gender, and Sexuality Studies

WGSS400 - Sex and Scandal in Film and Literature Film, literature, and media-based exploration of historical and contemporary texts that feature sex and scandal. Using relevant cultural and literary criticism, this class explores how "scandalous" sexualities have their own specific histories and deployments. Topics to be considered include the meaning of the word "scandal" and how different sexual relationships can appear "scandalous" in a given context. The course will question how sex and scandal intersect with race, ethnicity, nationality, religion, class, ability, and more. Credit Hours: 3

WGSS401 - Introduction to Transgender Studies Global study of transgender representation in film, media, literature, and performance. This course utilizes a cultural theory approach and draws from the work of scholars, activists, and artists within the areas of transgender, queer, feminist, and disability studies. Credit Hours: 3

WGSS406A - Gender, Family and Sexuality in Pre-Modern Europe (Same as HIST 406A) A discussion of the history of the family, creation of gender roles, and importance of sexuality from medieval times to the French Revolution. Credit Hours: 3

WGSS406B - Gender, Family and Sexuality in Modern Europe (Same as HIST 406B) From the French Revolution. A discussion of the history of family, creation of gender roles, and importance of sexuality from the French Revolution to the present. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Credit Hours: 3

WGSS407 - Sociology of Sexuality (Same as SOC 407) Examines a range of social issues related to human sexuality and the interaction between sexuality and other social processes. Emphasis is on the relevant concepts, theories, and methods in the field of sexual studies, the social and historical construction of sexuality, and the ways in which social characteristics shape sexual behaviors and

desires, sexual variation, including its causes and consequences, how basic social institutions affect the rules governing sexuality, the major moral and political controversies that surround sexuality, and the "dark side" of sexual life. Credit Hours: 3

WGSS410 - Transcending Gender (Same as ANTH 410L) How do humans become male and female in different societies? Can men become women and women become men? What other gender possibilities exist? Is male dominance universal? What are the sources of male and female power and resistance? Do women have a separate culture? What are the relationships between gender, militarism, and war? These and other questions will be examined in cross-cultural perspective. Credit Hours: 3

WGSS411 - Human Sexuality (Same as PH 410) Provides detailed information on dimensions of sexuality; characteristics of healthy sexuality; anatomy and physiology; gender roles; relationships; sexually transmitted infections/diseases; contraceptive issues and concerns; sexual victimizations; and sexuality through the life cycle. Credit Hours: 3

WGSS415 - Topics in Gender, Sexuality, and Communication (Same as CMST 415) An exploration of advanced theories and research in gender and sexuality from communication perspectives. Course may be repeated when topics vary. Credit Hours: 3

WGSS416 - Black Feminist Thought as Theory and Praxis Explore the roots, contemporary manifestations, and current embodiments of Black feminist thought. Explore the works of Black women to engage in critical thinking and thoughtful dialogue that positions the valuable knowledge, experiences and perspectives of women of color at the center of inquiry while simultaneously discovering spaces for multicultural alliances. Credit Hours: 3

WGSS426 - Gender, Culture and Language (Same as ANTH 426 and LING 426) This course is designed for students who have had some exposure to gender studies. It will focus on readings in language and gender in the fields of anthropological and socio-linguistics. Issues to be addressed are the differences between language use by men/boys and women/girls, how these differences are embedded in other cultural practices, and the various methodologies and theories that have been used to study gendered communication. Credit Hours: 3

WGSS437 - Lesbian and Gay History in the Modern United States (Same as HIST 437) This course explores the social, political, and cultural history of lesbians, gay men, and other sexual and gender minorities in the United States from the turn of the twentieth century to the present. Themes to be taken up in the class include: the emergence of heterosexuality and homosexuality as distinct categories of identity; the intersection between sexual identity and identities of race, class, gender, and ethnicity; the relationship between homosexuality and transgenderism; the movement for gay liberation; the creation of lesbian and gay urban and rural subcultures; representations of homosexuality in popular culture; anti-gay backlash; and AIDS. Credit Hours: 3

WGSS438 - Women and the Law (Same as POLS 438) The course is an advanced seminar in public law with a focus on gender, law, and society. The course will engage with issues in feminist legal practice and the development of legal theories regarding gender. We will interrogate the relationship between theory and practice and the ways in which feminist jurisprudence has taken shape in the dynamics of this relationship. POLS 114 and 230 recommended prerequisites. Credit Hours: 3

WGSS440 - Queer Visual Culture (Same as CIN 469) Course discusses aspects of the aesthetics, history, theory, and politics of media representations of gender and sexuality. Cultural texts from one or a combination of media forms, genres, historical periods, and platforms will inform the historical and theoretical consideration of media representations of gender and sexual variation with a special interest on their bearings upon the present moment. May be repeated if topics vary. Credit Hours: 3

WGSS442 - Sociology of Gender (Same as SOC 423) Examines social science theory and research on gender issues and contemporary roles of men and women. The impact of gender on social life is examined on the micro level, in work and family roles, in social institutions, and at the global, cross-cultural level. Credit Hours: 3

WGSS446 - Gender and Global Politics (Same as POLS 456) An advance course examining gender systems and women's situations across cultures and countries. This course also studies the impact globalization has had on gender issues by looking at women's activism at international and transnational

levels. Topics covered include women's political representation, gender and culture, women's social movements, gender and development, and gendered policy issues. Credit Hours: 3

WGSS448 - Gender and Family in Modern US History (Same as HIST 448) This course explores the history of gender and the family in the United States from the late 19th century to the present. Themes to be explored include: the family and the state, motherhood, race and family life, and the role of the "family" in national politics. Credit Hours: 3

WGSS450A - Women in Music (Same as MUS 450A) Explores the creative contributions of women in music, examining women's participation across a range of genres, cultural/geographic areas, and time periods. Restricted to 3rd Year/4th Year/graduate music major or consent of instructor. Credit Hours: 3

WGSS452A - Traditions of Uppity Women's Blues (Same as AFR 452A and MUS 452A) Examines the tradition of "uppity" women's blues from the so-called "classic" blues singers of the 19th century (Gertrude "Ma" Rainey, Bessie Smith, Ida Cox, etc.) to the contemporary blues of Saffire, Denise LaSalle and others. Explores ways blues women challenge conventions of gender and sexuality, racism, sexism, classism, and homophobia. Restricted to 3rd Year/4th Year/graduate music major or consent of instructor. Credit Hours: 3

WGSS456A - Feminist Philosophy (Same as PHIL 446A) A general survey of feminist theory and philosophical perspectives. Credit Hours: 3

WGSS456B - Special Topics in Feminist Philosophy (Same as PHIL 446B) A special area in feminist philosophy explored in depth, such as Feminist Ethics, French Feminism, Feminist Philosophy of Science, etc. Credit Hours: 3

WGSS456C - Women Philosophers (Same as PHIL 446C) Explores the work of one or more specific women philosophers, for example Hannah Arendt, Simone DeBeauvoir, etc. Credit Hours: 3

WGSS464 - Audio Documentary & Diversity (Same as RTD 464) The purpose of this course is the creation of short and long form audio documentaries by students, regardless of production background. It will introduce students to basic production techniques and diversity considerations during the making of a documentary. This course uses qualitative methods to investigate an issue or document an event, with an emphasis on observation and interview techniques. Topics will explore the role of gender, race, ethnicity, and class during the planning, gathering, and production stages of the documentary. Course open to non-majors. Lab fee: $55. Credit Hours: 3

WGSS465 - History of Sexuality (Same as HIST 465) Comprehensive survey of sexuality from the early modern period to the present. Examines social trends, politics, and cultural debates over various forms of sexuality. Students will engage in discussion, research, and writing. Emphasis varies by instructor. Credit Hours: 3

WGSS470 - College Student Sexuality (Same as EAHE 470) Seminar designed to provide students with a strong grounding in the field of college student sexuality and sexual identity, covering the lived experiences of U.S. college students, the construction of sexualized collegiate identities through U.S. history, and how institutions of higher education have attempted to regulate, control, and (intentionally as well as inadvertently) effect college student sexuality. Credit Hours: 3

WGSS476 - Women, Crime, and Justice (Same as CCJ 460 and SOC 461) A study of women as offenders, as victims, and as workers in the criminal justice system. Credit Hours: 3

WGSS489 - Women, State and Religion in the Middle East (Same as HIST 489) Following an introduction to the question of women in Islamic law and Islamic History, this course will examine the changing status and experiences of women in a number of Middle Eastern countries in the 20th century, focusing on Egypt, Iran, and Turkey. Major themes will include legal, social, and political rights, participation in social and economic life, cultural and literary production, and recent secular and Islamist women's movements. Credit Hours: 3

WGSS493 - Individual Research Exploration of a research project under the supervision of a faculty member having graduate faculty status. The project must result in a written research report, which is filed with the Director of Women, Gender, and Sexuality Studies. Restricted to 4th Year standing. Special

approval needed from the instructor and Director of Women, Gender, and Sexuality Studies. Credit Hours: 2-6

WGSS494 - Community Service This course gives students the opportunity to serve the community through direct engagement with organizations and services that center issues of gender and sexuality. The setting may be in one's own field of study or in general content areas recognized by the Women, Gender, and Sexuality Studies Program. Students will devise their service plan in communication with the Coordinator of the WGSS program. Prerequisite: WGSS 201. Credit Hours: 1-3

WGSS496 - Advanced Special Topics in LGBTQ+ Studies Advanced study of a topic of interest in LGBTQ+ Studies not offered through regular course listings. Credit Hours: 3

WGSS497 - Independent Study in LGBTQ+ Studies Supervised readings in selected content areas in LGBTQ+ studies. This is a capstone, synthesizing experience for students in LGBTQ+ studies. Prerequisite: WGSS 201. Credit Hours: 3

WGSS504A - Performing Justice/Theory (Same as THEA 504A) Performance is more prevalent in society than ever before. Performance, in this class means: theatre, mass media, social media, entertainment, digital humanities, and everyday life. This course considers questions such as: How can performance help gender equality? How does literary, media, and performance theory relate to struggles for social justice? What does it mean to live in a "dramatized society"? Students will gain an understanding of the economic, psychological, and political strategies behind performance and theory that seeks to intervene in unjust social structures. Restricted to graduate standing or special approval from the instructor. Credit Hours: 3

WGSS507 - Seminar in the Sociology of Sexuality (Same as SOC 507) Examines the emerging body of work in the fast-growing field of sexuality studies. While the course focuses on sociological research, it takes a few side trips into other disciplines. We begin by discussing the evolution of theory and methodology in the sexual sciences. After briefly considering the contributions of early sexologists and the work of Sigmund Freud, we will survey the sociology of sexuality from its beginnings in quantitative research, through classical sociological theory, social constructionism, and feminism. We'll then examine Foucault's radical rethinking of sexuality and grapple with the challenges of queer theory. The second part of the course will take up several substantive areas in the sociology of sexuality, drawing on cutting edge quantitative and qualitative research. Credit Hours: 3

WGSS515 - Studies in Gender, Sexuality, and Communication (Same as CMST 515) How communicative activity creates and sustains human beings as gendered. Emphasis on gaining familiarity with contemporary research on gendering from a particular perspective (e.g., ethnography, performance, phenomenology, qualitative methods, rhetorical criticism). May be repeated when perspective varies. Perspective announced prior to each offering. Credit Hours: 3

WGSS525 - Theorizing the Body (Same as ANTH 525) This seminar explores a broad range of theoretical readings centering on the human body. Once the province of medical science and certain schools of philosophy, recent research in the social sciences and the humanities position "the body" as a primary site of socialization, gendering, social control. Credit Hours: 3

WGSS535 - Seminar: Gender in Higher Education (Same as EAHE 535I) A seminar for specialized study of administrative practice and policy in gender in higher education. Credit Hours: 1-3

WGSS542 - Seminar on the Family (Same as SOC 542) Overview of the theoretical approaches, substantive issues, and techniques of research and measurement in the study of American family life. Approaches include structural functionalism, conflict theory, and the feminist critique. Among the substantive topics are family roles and relationships, kinship, relationships of the family to other institutions and family change. Credit Hours: 3

WGSS544 - Sociology of Gender (Same as SOC 544) Examines major theories, themes, and research methods on the intersection of gender, race, class and sexuality. Topics may include: construction of gender, race, class and sexual identities; work; social movement; intersection of family and work; parenting and reproduction; historical and cross-national dimensions. Credit Hours: 3

WGSS545 - Gender and Work (Same as SOC 545) This course is designed to investigate how gender structures the workplace, as well as how men and women both reproduce and negotiate gender at work. Focusing on select topics, we will develop an understanding of workplaces as gendered organizations and discuss sex segregation, wage inequality, the glass ceiling, the glass escalator, sex work, men and women in nontraditional occupations, the body at work, emotional labor, aesthetic labor, immigration and work, globalization, and unemployment and welfare. Also, this class will take an intersectional approach to analyzing and discussing issues of gender inequality at work; meaning, we will take seriously how gender intersects with race, ethnicity, class, and sexuality to shape both inequality and resistance at work. Credit Hours: 3

WGSS546 - Language, Gender and Sexuality: Anthropological Approaches (Same as ANTH 546, LING 545) This course examines the study of language in society with a particular focus on how linguistic practices are part of the construction of gender and sexual identities, ideologies, social categories, and discourses. Anthropological theories applied to the study of language, gender, and sexuality will be covered along with a variety of methodological approaches. Credit Hours: 3

WGSS547 - Gender and Social Change (Same as SOC 547) This graduate seminar is a sociology of gender course that focuses on changes in the subfield itself and in peoples' lived experiences in terms of gender, gender relations, and gender stratification. Readings and discussions will trace the development of the sociology of gender over the last several decades. We will discuss how ideas and theories have changed over the years including changes in concepts and in how sociologists define, problematize, and theorize about sex and gender as traits, identities, relations, structures, and systems. We will also explore 'objective' or actual change (or lack of change) related to gender in individuals, groups, and societies. Credit Hours: 3

WGSS550 - The Psychological Construction of Gender (Same as PSYC 550) This course will focus on the psychology of gender within a feminist perspective and using a feminist approach. The term feminism, as used here, primarily implies that we will consider information and ideas for more diverse than simple empirical data. In our reading and discussion, we will consider politics, discrimination, the history of science, the history of patriarchy, the development of theory and ideas in general and the development of feminism in particular, and objective versus subjective views of science, and within these contexts, we will consider and study the psychology of gender. Credit Hours: 3

WGSS560 - Gender and Sport: Sociological and Psychological Perspectives (Same as KIN 560) This course explores psychological and sociological dimensions underlying the concept of gender and critically examines how gender relates to sport and physical activity. Students will be introduced to non-traditional as well as traditional research that addresses the issue of gender in various physical activity contexts. Credit Hours: 3

WGSS565 - Continental Feminist Philosophy (Same as PHIL 565) An examination of major figures and problems in continental feminism, focusing on metaphysical, ethical, political, and aesthetic theories in the works of Beauvoir, Kristeva, Irigaray, Butler, and Kofman. Credit Hours: 3

WGSS575 - Women in Higher Education (Same as EAHE 575) The goal of this course is to provide an overview of women in higher education. Topics that will be considered are: feminism's impact on women in higher education; the division of labor for women (including faculty and professional staff positions); historical and sociological perspectives of access to higher education including curriculum and pedagogy. Credit Hours: 3

WGSS576 - College Men and Masculinities (Same as EAHE 576) This course is a readings-based seminar covering concepts of masculinity as demonstrated by collegiate men in the United States. The readings in this course cover cultural as well as identity elements of what being a "college man" means (and how that definition has changed over time and contexts). The readings consist of historical, contemporary and theoretical scholarship concerning collegiate masculinity. Credit Hours: 3

WGSS590 - Readings Supervised readings in selected advanced subjects. Special approval needed from the instructor and the Director of Women, Gender, and Sexuality Studies. Credit Hours: 1-3

WGSS591 - Special Topics Concentration on a topic of interest not offered through the regular course listings. Special approval needed from the instructor and the Director of Women, Gender, and Sexuality Studies. Credit Hours: 1-3

WGSS592 - Gender and Sexuality in Times of Pandemic This course explores how pandemics affect the social construction of race, gender, sexuality, and identity. Students will discuss the role of religion in health care and science and how women in religious contexts were primary caretakers during the Plagues, the Flu of 1918-1920, and the polio epidemic. The course will consider how the burden of care falls on women and sexual minorities in churches, mosques, synagogues, indigenous religious spaces and affiliated organizations in all times of public health crises, including during the Covid-19 pandemic. Students will also learn how religion has played both a divisive and positive role in the prevention and care of HIV/AIDS, particularly for Black, Indigenous, and People of Color (BIPOC) communities. The course will consider research from the fields of medicine, history, English, political theory, sociology, environmental humanities, and cultural theory. Credit Hours: 3

WGSS593 - Introduction to Critical Masculinity Studies Critical examination of masculinity in a global context. The course will explore the constructed nature of masculinity at the intersections of race, sexuality, class, national, and religious identifications. Takes an interdisciplinary approach and includes texts from the fields of history, sociology, English, film and media studies, and the visual arts. Credit Hours: 3

WGSS595 - Practicum in Educational Women, Gender, and Sexuality Studies This course provides students with supervision in their work toward course development in Women, Gender and Sexuality Studies. The instructor of record will meet with practicum members on a regular basis, and, together, they will work towards the research and syllabus construction necessary for a WGSS course. Pedagogical strategies will also be covered. Must have consent of the Director of Women, Gender, and Sexuality Studies. Graded by S/U only. Credit Hours: 1-3

WGSS596 - Advanced Feminist Theories This course introduces students to the past, present, and potential future of feminism and its various permutations. Readings are designed to stress historical, intellectual, and contemporary issues in order to inspire in-class discussion and to provide foundations for written assignments. Emphasis varies by instructor. Credit Hours: 3

WGSS597 - Graduate Pro-Seminar in Women, Gender, and Sexuality Studies This proseminar introduces graduate students to the field of Women, Gender, and Sexuality Studies (WGSS). The approach is both interdisciplinary as well as multidisciplinary. The course guides students through a process by which they build a detailed map of the intersection between their course of study and the field of WGSS. Emphasis varies by instructor. Credit Hours: 3

Post-Baccalaureate Certificate Programs

The purpose of a post-baccalaureate certificate is to enhance the marketability of students, confirm special skills or knowledge acquired by students, and provide educational opportunities and continuing education to otherwise unserved segments of the community through short-term graduate programs. The certificate program is designed to provide a certification of specialization to individuals who already possess a bachelor’s degree. All students must be admitted to the Graduate School and make formal application to the particular certificate program.

- Graduate courses taken as a degree-seeking student may count toward both a graduate degree and a graduate certificate provided that the student is admitted and enrolled in the certificate program prior to completing the last course required for the certificate and with the approval of the program.
- Graduate credit hours earned while certificate-seeking may also be applied toward a graduate program with the approval of the program, provided the student is enrolled as degree-seeking in the graduate program prior to the last semester of coursework.

- If a program would like to count transfer courses toward a Post-Baccalaureate Certificate, the same policies for transfer courses in degree programs will also be used in certificate programs. (See Transfer Credit.)
- A cumulative grade point average of 3.00 must be achieved in all graduate course work required for the certificate to be awarded from a program.

Certificate in Accountancy Analytics

The Accountancy Analytics Certificate will consist of courses which will provide the student with a specialization in Accountancy Analytics. This certificate is directed toward students who have the accounting foundation and/or work as an accounting professional who want to get more specialized knowledge in the assurance analytics area. The program requires students to complete 12 credit hours of graduate level coursework, as follows:

- ACCT 512C Accounting Research Methods Seminar-Interpreting Data
- ACCT 560 Information Technology Risk and Controls
- ACCT 561 Analytics for Accounting Data
- ACCT 563 Advanced Auditing

Certificate in Accountancy Foundation

The Accountancy Foundation consists of courses which provide the student with the necessary foundation in accounting to enter the accounting profession and/or be prepared to take the CPA Exam. This graduate certificate is directed toward students who do not have an accounting undergraduate degree. The program requires students to complete 18 credit hours of graduate level coursework, as follows:

- ACCT 500 Financial Foundations
- ACCT 501 Financial Reporting I
- ACCT 502 Financial Reporting II
- ACCT 504 Cost Management
- ACCT 506 Taxation I
- ACCT 509 Assurance Services

Certificate in Accountancy Taxation

The Accountancy Taxation Certificate will consist of courses which will provide the student with a specialization in Taxation. The certificate is directed toward students who have the accounting foundation and/or work as an accounting professional who want to get more specialized knowledge in the taxation area. The program requires students to complete 12 credit hours of graduate level coursework, as follows:

- ACCT 507 Advanced Tax
- ACCT 543 Corporate Taxation
- ACCCT 544 Partnership Taxation
- ACCT 561 Analytics for Accounting Data

Certificate in Africana Studies

The Graduate Certificate (post-baccalaureate) in Africana Studies requires 18 credit hours of graduate level coursework and independent study. Within these 18 credit hours, nine credit hours must be taken outside the student's primary discipline, including Africana Studies graduate level courses cross-listed in Anthropology, History, Music, Philosophy, Psychology, Communication Studies, Theater, and Women, Gender, and Sexuality Studies. Three credit hours of independent graduate readings are also required.

The student must be currently enrolled in a graduate degree program at SIUC or an individual holding a bachelor's degree and admitted to the Graduate School (non-declared major).

For more information contact:

School of Education
Southern Illinois University
Carbondale, IL 62901
Telephone: 618/453-7314
Email: SOEGradPrograms@siu.edu

Certificate in Analytics for Managers

The College of Business and Analytics offers a Graduate (post-baccalaureate) Certificate program in Analytics for Managers. Managers increasingly are expected to consider large amounts of data to make faster and better decisions. Analytics is a technical tool that can be used to process all these data to find solutions. This certificate allows practicing executives, managers, and those on the managerial track, to understand their organization in terms of analytics, to make the best use of their organization's analytics function, and to apply analytical models back into their organization. This is not a deeply technical program because few managers will need the highly technical skills of data scientists. But, rather, this is a program that will introduce managers to the latest advances in analytics and artificial intelligence so they can make more efficient and effective data-based decisions. Students must complete 18 credit hours of coursework in:

- Foundation of Analytics
- Information Systems
- Data Science
- Artificial Intelligence, Visualization
- Analytics Capstone

For more information contact:

Graduate Certificate in Analytics for Managers
College of Business and Analytics
Southern Illinois University
Mail Code 4619
Carbondale, IL 62901
Telephone: 618/453-3023

Certificate in Anatomy

The anatomy certificate is a graduate (post-baccalaureate) certificate program that provides students an opportunity to become proficient in anatomy teaching. This will allow them to compete more effectively for jobs in this field. The student must be currently enrolled in a graduate degree program at SIUC or an individual holding a bachelor's degree and admitted to the Graduate School (non-declared), preferably in an existing anatomically based graduate, masters, or Ph.D. program (e.g. Physiology, Biological Sciences, Anthropology, or Zoology). However, others will be evaluated on a case-by-case basis. Additional prerequisites, such as embryology, basic vertebrate anatomy, etc. are preferred but other courses may qualify. Students lacking such prerequisites may be encouraged to obtain them prior to admission into the anatomy certificate program. The Director of the Anatomy Certificate Program will review all applications. In addition to coursework in anatomy, students in the anatomy certificate program will obtain experience teaching gross anatomy to undergraduates and/or graduates at the PHSL 301 and PHSL 401 A/B level. Minimum of 17-18 graduate credit hours are required for fulfillment of the certificate requirements. They are:

- Advanced Human Anatomy, (PHSL 401A, PHSL 401B, 10 CH)
- Mammalian Histology, (PHSL 409, 4 CH)
- Either Advanced Neuroanatomy with Lab (PHSL 503, 3 CH) or Advance Human Embryology (PHSL 503, 3 CH).

Where appropriate, these courses may also count for credit toward the master's or Ph.D. degree. The Director of the Anatomy Certificate Program and the student's advisory committee will make recommendations for other coursework and oversee the student's progress. Students supported by graduate assistantships will have the same teaching obligations as all other departmentally supported students.

For more information contact:

Director of the Certificate of Anatomy Program
Department of Physiology, School of Medicine
Southern Illinois University
Carbondale, IL 62901-6512
Telephone: 618/453-1544
Email: physiology@siu.edu
Website: https://physiology.siu.edu/

Certificate in Art History

The Graduate (post-baccalaureate) Certificate in Art History will enable students to develop a broad knowledge of the history of art, become familiar with the discipline's methodology, and acquire skills necessary for teaching art history. It is open to students who have completed a bachelor's degree. The student must be currently enrolled in a graduate degree program at SIUC or an individual holding a bachelor's degree and admitted to the Graduate School (non-declared). Students enrolled in the MFA program offered through the School of Art and Design may enroll concurrently in the certificate program and apply part of their MFA art history coursework towards both degrees. The program requires students to complete 18 credit hours of graduate level art history coursework, including a teaching practicum.

For more information contact:

School of Art and Design
Southern Illinois University
Mail Code 4301
Carbondale, IL 62901
Telephone: 618/453-5403

Certificate in Clinical Leadership

The Certificate in Clinical Leadership is open to post-bachelor level students who hold a license in a clinical specialty. It is designed to provide the knowledge and skills specialized for roles in clinical leadership and/or as a preparatory certificate for graduate education. Courses in the certificate are specific to patient care environments and will include, but not be limited to: strategic planning, operations, human resource planning, health information, and evidence based managerial decision making specific to patient care environments. Students must complete 18 credit hours of graduate level study, all at SIUC, with a C or above in all required courses which includes:

- MHA 510, 3 CH - Effective Healthcare Operations (same as MHI 510)
- MHA 531, 3 CH - Human Resources in Health Care (same as MHI 531)
- MHA 536, 3 CH - Strategic Leadership in Healthcare (same as MHI 536)
- MHA 566, 3 CH - Managing Health Information (same as MHI 566)
- MHA 580, 3 CH - Managerial Epidemiology and Evidence Based Management (same as MHI 580)
- MHA 585, 3 CH - Financial Issues in Healthcare (Same as MHI 585)

Students earning a grade lower than a C may retake individual courses only once. If a grade of C or higher is not received on the second attempt of an individual course, the student is removed from the certificate program due to academic performance.

For more information contact:

School of Health Sciences
Mail Code 6615
Carbondale, IL 62901

P: 618-453-7211
Email: health.sciences@siu.edu

Certificate in College Teaching

This graduate (post-baccalaureate) certificate is open to any graduate student enrolled in or has completed at least a master's degree. The purpose is to provide individuals with a pedagogical foundation that will help to prepare them to teach adult learners in a variety of postsecondary contexts. The requirements for the certificate include 15 credit hours of coursework plus a three credit hour internship. Coursework tailored to each student with faculty approval.

For more information, contact:

School of Education
Southern Illinois University
Carbondale, IL 62901
Telephone: 618/453-7314
Email: SOEGradPrograms@siu.edu

Certificate in Cybersecurity

The Graduate (post-baccalaureate) Certificate in Cybersecurity enables students to study advanced cybersecurity knowledge, skills, methodologies, and tools. This certificate focuses on the hands-on, organizational, and applied aspects of cybersecurity. The certificate program requires students to complete 18 credit hours of graduate level coursework. Students can pursue the certificate program either independently or concurrently with a graduate degree in another discipline.

Admission

The evaluation of applicants for admission is based primarily on the student's academic record with particular attention being given to past performance in relevant undergraduate coursework. Applicants are expected to have a substantial background in undergraduate computing courses covering foundations of objected-oriented programming, networks, information assurance, and cybersecurity.

The following are required for admission:
• Bachelor's degree, related field preferred but not required.
• Courses or background in object-oriented programming, networks, and basic level information assurance and/or cybersecurity.
• Minimum GPA of 2.7/4.0 in the last two years of bachelor's degree or admission as non-declared graduate student until a B average is obtained on at least 9 semester hours.
• Résumé highlighting education and/or work experiences in computing or information technology related areas.
• Statement of purpose highlighting career and educational goals (maximum one page, single spaced).

Admission to the certificate program requires two steps:

1. Apply for admission to the certificate program with the application form available on the ITEC website. Email the completed application form, along with unofficial transcripts, résumé, and statement of purpose, to the ITEC Graduate Program Director at itec@siu.edu.

Decisions about the admission of students to and retention of students in the post-baccalaureate certificate program will be made by the ITEC Graduate Program Director and ITEC faculty subject to the requirements of the SIUC Graduate School. Students will receive an email regarding the admission decision.

2. Once accepted into the certificate program, apply to the SIUC Graduate School as a nondeclared student (unless you choose to enroll or are already enrolled in another graduate program at SIUC). This application process begins here. A nonrefundable application fee must be submitted with the SIUC Graduate School's online application. Official transcripts will be required from non-SIUC students.

The Bridge Program

Students whose undergraduate preparation or work experience does not satisfy the computing background requirements can make up this deficiency by taking one or more courses as prescribed by the graduate program director and program faculty. This coursework may be completed at any accredited college or university. The courses below are offered online by SIUC and will satisfy the admission requirements for undergraduate preparation:

• ITEC 209 - Introduction to Programming
• ITEC 216 - Information Security Fundamentals
• ITEC 224 – Network Fundamentals

More information about these classes can be found in the SIUC Undergraduate Catalog.

Requirements

• Students enrolled in the certificate program are required to complete 18 credit hours from a pool of eight graduate level cybersecurity courses. Four courses are required for a total of 12 credit hours and an additional six credit hours are completed by selecting two courses from the electives listed below. Enrollment and faculty availability will determine which electives are offered each year.
• Students enrolled in the certificate program must maintain a GPA of no less than 3.0 in all coursework counting towards the certificate. The 3.0 must be in all graduate coursework, and all courses counting toward the certificate must have grades of B or better.
• Maximum time allowed to complete all requirements for the certificate is six years from the date of the first course taken, or from the start semester.

Other Information

• Cohorts begin each fall.
• Certificate programs do not lead to a degree, but all certificate hours can be counted toward a graduate degree program if one with similar requirements is available.
• Upon completion, the student will receive a printed certificate and the earned certificate will be noted on the student's transcript.
• A student may withdraw from the certificate program at any time by sending an email to gradregistration@siu.edu. There is no penalty for withdrawing from a graduate certificate program, but withdrawal from courses in progress must follow the rules of registration for eligibility for refund, etc.

Required Courses (12 Credit Hours):

• ITEC 541 - Principles of Cryptography (Prerequisites: ITEC 209 and ITEC 280)
• ITEC 542 - Software Security (Prerequisite: ITEC 209)
• ITEC 543 - Cloud Security (Prerequisite: ITEC 216 and ITEC 235)
• ITEC 544 - Web Security (Prerequisite: ITEC 216 and ITEC 236)

Elective Courses (6 Credit Hours):

• ITEC 509 - Advanced Topics in Cybersecurity (Prerequisite: ITEC 504)
• ITEC 511 - Cybersecurity Research Project
• ITEC 545 - Wireless Communication & Security (Prerequisite: ITEC 216 and ITEC 224)
• ITEC 546 - Introduction to Machine Learning with Applications in Information Security (Prerequisite: ITEC 209 and ITEC 265)

For more information, contact:

ITEC Graduate Program Director
Southern Illinois University
Mail Code 6614
Carbondale, IL 62901
Telephone: 618-453-7253
Email: itec@siu.edu

Certificate for Dual Credit Mathematics

The post-master certificate program in Dual Credit Mathematics allows an Illinois high school mathematics teacher with a master's degree (in any field) to teach certain courses for college credit to high school students. An undergraduate degree in mathematics, mathematics education, or a related field is required for admission. The program requires 18 credit hours of graduate level mathematics courses. Many courses are available online.

For more information, contact:

Website: https://math.siu.edu/dual-credit
Email: mathgradinfo@siu.edu

School of Education
Southern Illinois University Carbondale
Mail Code 4624
625 Wham Drive
Carbondale, IL 62901

Phone:(618) 453-2415
Fax:(618) 453-1646
Email:soe@siu.edu

Certificate in Earth Science

The graduate (post-baccalaureate) certificate in Earth Science is open to students with degrees in earth science, geology, or related fields. It is intended to expand the knowledge, skills, and specialized training in geological topics. The coursework will include eighteen (18) graduate credit hours in Geology. While there are no specific courses required, the courses taken will be determined by the student and the program Coordinating Committee.

Students must maintain a B average in graduate courses. Maximum time allowed to complete the requirements for the certificate is five years.

For more information, contact:

School of Earth Systems and Sustainability
1000 Faner Dr. Mail Code 4514
Southern Illinois University
Carbondale, IL 62901
Telephone: 618/536-3375
Email: ess@siu.edu

Certificate in Geographic Information Science (GIS)

The graduate (post-baccalaureate) certificate in GIS focuses on advanced geospatial techniques and analytical skills. This certificate meets the needs of the expanding job market for Master's and Ph.D. students in this field. This certificate ensures that the students:

- Understand advanced mapping technologies
- Know how to combine individual models and functions in ArcGIS to carry out a complex spatial analysis task
- Master advanced digital image processing and analysis technologies
- Obtain competence in designing, developing, and managing spatial databases

Further, they will demonstrate an understanding of GIS's relationships with remote sensing, global positioning system, (GPS), mathematics, statistics, and other sciences and obtain capacity in integrating multi-disciplinary methods for problem-solving. Finally, they will be competent in planning, developing, and implementing a complex GIS project. Students must be admitted to an SIUC graduate program or the SIUC non-declared graduate program and maintain a 3.0 GPA in the certification courses. The program requires students to complete 18 credit hours of graduate level coursework from the following:

- GEOG 502(3) – Geographic Information Systems
- GEOG 504(3) – Spatial Analysis
- GEOG 506(3) – Intro to Remote Sensing
- GEOG 508(3) – Advanced Remote Sensing
- GEOG 520(3) – Advanced GIS Studies
- GEOG 528(3) – GIS Portfolio/Capstone Project

For more information, contact:

School of Earth Systems and Sustainability
1000 Faner Dr., Mail Code 4514
Southern Illinois University
Carbondale, IL 62901
Telephone: 618/536-3375
Email: ess@siu.edu

Certificate in Gerontology

The graduate (post-baccalaureate) Certificate in Gerontology is open to students who are interested in the area of gerontology. It is designed to provide knowledge, skills, and specialized training in programs and services for older persons. The certificate includes core courses on aging in the following areas: social work, rehabilitation, health, exercise and education. Courses within the certification program will include, but not be limited to: policy and program issues, psychosocial issues and health and fitness issues.

Core courses which are required with the certification program include:

- KIN/GRON 428: Physical Activity and Aging
- PH/GRON 440: Health Issues of Aging
- GRON 405: Introduction to Aging and Disability
- SOCW/GRON 575: Policy and Program Issues of Aging
- GRON 555: Capstone in Gerontology

The coursework also includes a practicum in an agency suitable to the individual's interest or research project. Students must complete 15 credit hours of study including a minimum of three credit hours of Capstone in Gerontology, to earn the certificate.

For more information, contact:

Certificate in Gerontology
School of Human Sciences
Southern Illinois University
Mail Code 4310
Carbondale, IL 62901
Telephone: 618/453-3155
Email: siucgerontology@siu.edu or Human.Sciences@siu.edu

Certificate in Infection Prevention and Control

The post-baccalaureate certificate in Infection Prevention and Control is designed for students with an interest in infection prevention and control within healthcare organizations. The certificate consists of 18 credit hours of coursework. A grade of “C” or higher is required in all courses and all coursework must be completed at SIUC. Students must complete the following courses:

- MHA 580: Managerial Epidemiology & Evidence Based Management (3 CH)
- MHA 556: Individual Research in Healthcare (3 CH)
- MHA 510: Effective Healthcare Operations (3 CH)
- HCM 463: Environment of Care (3 CH)
- HCM 464: Infection Prevention Informatics (3 CH)
- HCM 465: Infection Prevention & Control Operations (3 CH)

For more information contact:

School of Health Sciences
Mail Code 6615
Carbondale, IL 62901
P: 618-453-7211
Email: health.sciences@siu.edu

Certificate in Learning and Performance Technology

Students who have completed the post-baccalaureate certificate (graduate certificate) in Learning and Performance Technology may add 12 more credit hours to complete the respective Master's concentration in the Organizational Learning, Innovation, and Development degree.

Certificate in Learning and Performance Technology (18 credit hours)

- OLID 500: Foundations: Instructional Design, Training and Performance
- OLID 504: App Design & Task Analysis
- OLID 507: Online Content Management
- OLID 508: Content Development with AI
- OLID 509: Emerging Technologies Research Studio
- OLID 510: AI-Accelerated Expertise Development

For more information, contact:

School of Education
Southern Illinois University Carbondale
Mail Code 4624
625 Wham Drive
Carbondale, IL 62901

Phone:(618) 453-2415
Fax:(618) 453-1646
Email:soe@siu.edu

Certificate in Medical Education Preparation

Medical/Dental Education Preparatory Program MEDPREP is a post-baccalaureate program within the Southern Illinois University School of Medicine. Courses are restricted to MEDPREP students only. Admission to MEDPREP is by direct application to the program.

For more information, contact:

Trent Stevens
Admissions Coordinator
MEDPREP Office of Admissions
Phone: (618) 453-1554
Email: tstevens@siumed.edu

Certificate in Online Learning

Students who have completed the post-baccalaureate certificate (graduate certificate) in Online Learning may add 12 more credit hours to complete the respective Master's concentration in the Organizational Learning, Innovation, and Development degree.

Certificate in Online Learning (18 credit hours)

- OLID 500: Foundations: Instructional Design, Training and Performance
- OLID 501: Design and Delivery of Online Learning
- OLID 502: Interactive Media for Learning
- OLID 503: Universal Design & Accessibility
- OLID 505: Usability and Problem Solving with AI
- OLID 511: Story-Based Learning & Gamification

For more information, contact:

SIU Online
Carbondale, Il 62901

Phone: (618) 453-3430
Email:onlinesaluki@siu.edu

Certificate in Public Health

The graduate (post-baccalaureate) Certificate in Public Health is open to students holding a bachelor's level degree. It is designed to provide the knowledge and skills pertaining to public health. Well suited as a graduate preparatory certificate, courses are specific to public health foundations, program delivery and epidemiology. There are two available tracks from which students can choose from. For either track students must complete 15 credit hours of graduate level study, all at SIUC, with a C or above in all required courses that include:

Epidemiology/Biostatistics Track

- PH 505: Foundations of Public Health Knowledge (3 CH)
- PH 513: Public Health Analytics I (3 CH)
- PH 514: Public Health Analytics II (3 CH)
- PH 526: Evidence-based Research and Evaluation in Public Health (3 CH)
- PH 593: Principles of Epidemiology in Public Health (3 CH)

Community Health Track

- PH 505: Foundations of Public Health Knowledge (3 CH)
- PH 512: Public Health Program Planning (3 CH)
- PH 525: Applied Theoretical Foundations of Public Health (3 CH)
- PH 526: Evidence-based Research and Evaluation in Public Health (3 CH)
- PH 593: Principles of Epidemiology in Public Health (3 CH)

Students earning a grade lower than a C may retake individual courses only once. If a grade of C or higher is not received on the second attempt of an individual course, the student is removed from the certificate program due to academic performance.

For more information contact:

Gabriele Hoffmann, PA, MS, MS Ed
MPH Program Coordinator
gabriele.hoffmann@siu.edu
618-453-1860
School of Human Sciences
Southern Illinois University
Pulliam Hall, Room 308A
Carbondale, IL 62901

Certificate in Quantitative Methods

The graduate (post-baccalaureate) Certificate in Quantitative Methods (QM) is designed to provide advanced training in quantitative methods for graduate students majoring in other programs. This certificate requires a minimum of 24 graduate credit hours.

This certificate requires 18 credit hours in core courses:

- QUAN 506: Inferential Statistics (4 CH)
- QUAN 507: Multiple Regression (4 CH)
- QUAN 508: Experimental Design (4 CH)
- QUAN 531: Principles of Measurement (3 CH)
- QUAN 533: Survey Research Methods (3 CH)
- and a minimum of 6 credit hours in QUAN 580A-I "Selected Topics" (variable 2-4 credit hours per course)

Students must complete each with a letter grade of at least a *B*, and maintain an overall grade point average of at least 3.5 in courses taken under the auspices of the Quantitative Methods graduate certificate program. If a lower grade is obtained in any given course, then the same course must be repeated until this overall grade point average requirement is achieved. Otherwise, credit will not be given for the course(s) associated with this certificate and other course(s) would subsequently be required to be selected in lieu of course(s) where credit has not been earned.

For more information, contact:

School of Education
Southern Illinois University
Carbondale, IL 62901-4618
Telephone: 618-453-2415
Email: quanmethod@siu.edu

Certificate in Substance Use Disorders and Behavioral Addictions

The graduate (post-baccalaureate) Certificate in Substance Use Disorders and Behavioral Addictions, housed in the School of Health Sciences, is open to undergraduate and graduate students interested in developing proficiency in specialized counseling skills for work in treatment and other settings as a substance use disorders and behavioral addictions counselor. Students must complete 15 credit hours of required coursework in addition to an academic discipline-based 500 hour internship (eight credit hours). Didactic courses include CARE 461, CARE 471, CARE 558, CARE 566, and one approved elective.

The certificate is accredited by the Illinois Certification Board.

For more information, contact:

School of Health Sciences
Mail Code 6615
Carbondale, IL 62901
P: 618-453-7211
Email: Health.Sciences@siu.edu

Certificate in Sustainability

The graduate (post-baccalaureate) Certificate in Sustainability enables students to expand their knowledge and understanding of the long-term sustainable use of the earth's resources, including water, land use and food systems, climate change, urban sustainability, and "green" energy. This certificate helps prepare students for an expanding job market in environmental sustainability. Students must be admitted to an SIUC graduate program or the SIUC non-declared graduate program and must maintain a 3.0 GPA in the certification courses. The program requires students to complete 18 credit hours of graduate level coursework, as follows:

- GEOG 521(3) – Urban Sustainability
- GEOG 524(3) – Sustainable Development
- GEOG 536(3) – Natural Hazards
- GEOG 539(3) – Global Climate Change
- GEOG 570(3) – Contemporary Issues in Environmental Studies
- Plus either GEOG 502(3) – Geographic Information Systems -OR-
- GEOG 512(3) – Applied Geographic Statistics

For more information, contact:

School of Earth Systems and Sustainability
1000 Faner Dr. Mail Code 4514
Southern Illinois University
Carbondale, IL 62901
Telephone: 618/536-3375
Email: ess@siu.edu

Certificate in Therapeutic Recreation/Recreation Therapy

The Therapeutic Recreation/Recreation Therapy Graduate Certificate prepares students to help maintain and improve the quality of life and general health of individuals and society by creating, discovering, and disseminating knowledge through service in the profession. The certificate meets the majority of the academic requirements for National Certification as a Recreation Therapist. Students seeking National Certification should meet with recreation professions faculty to verify specific coursework required.

Completion of the Graduate Certificate in Therapeutic Recreation/Recreation Therapy will require 15-18 credit hours of coursework selected from the courses listed below (at least 50% of certificate hours must be earned in courses numbered 500 or above). Students may select course options that meet the academic requirements aligned for preparation of NCTRC certification testing or opt for an individualized plan that aligns with their career goals.

- REC 404 - Foundations of Recreational Therapy (3 CH)
- REC 405 – Recreation Therapy Facilitation Techniques (3 CH)
- REC 406 - Recreation Therapy for Physical Disabilities (3 CH)
- REC 407 - Recreation Therapy for Mental Health (3 CH)
- REC 460 - Administration of Recreational Therapy Services (3 CH)
- REC 461 - Assessment and Documentation for Recreational Therapy (3 CH)
- REC 524 - Recreational Therapy Foundations (3 CH)
- REC 525 – Recreation Therapy Facilitation Techniques (3 CH)
- REC 526 – Recreation Therapy for Physical Disabilities (3 CH)
- REC 527 - Recreation Therapy for Mental Health (3 CH)
- REC 580 - Readings in Leisure and Recreation (1-3 CH)
- REC 596 - Internship in Recreation

For more information, contact:

School of Human Sciences
107 Davies Hall
1075 South Normal Ave.
Carbondale, IL 62901 -4310
Phone:(618) 453-3115
Email:human.sciences@siu.edu

Certificate in Women, Gender, and Sexuality Studies

The purpose of the graduate Certificate in Women, Gender, and Sexuality Studies is to meet the demand for formal recognition of graduate level credentials in WGSS, and to enhance and broaden the perspectives of graduate students from various related fields. The program requires 18 credit hours of coursework. 12 credit hours must be at the 500-level, which includes WGSS 596 and WGSS 597. Six credit hours must be taken outside the student's major discipline. The student must be currently enrolled in a graduate degree program at SIUC or an individual holding a bachelor's degree and admitted to the Graduate School (non-declared).

The following graduate programs work closely as partners with the WGSS Graduate Certificate:

School of Education:

- Education Administration and Higher Education
- Organizational Learning, Innovation, and Development

College of Liberal Arts:

- Communication Studies
- History
- Political Science
- Sociology

College of Health and Human Sciences

- School of Psychological and Behavioral Sciences

College of Business and Analytics

- School of Management and Marketing

School of Law

For more information, contact:

Women, Gender, and Sexuality Studies
Southern Illinois University
Mail Code 6518
Carbondale, IL 62901
Telephone: 618/453-5141
Email: wgss@siu.edu

Accreditations

Institutional Accreditation

Higher Learning Commission

230 S. Lasalle Street, Suite 7-500
Chicago, IL 60604-1411
Telephone: (312) 263-0456
hlcommission.org

Academic Programs

Accreditation Review Commission on Education for the Physician Assistant (ARC-PA)

3325 Paddocks Parkway, Suite 345
Suwanee, GA 30024
Telephone: (770) 476-1224
arc-pa.org

- M.S.P.A. Physician Assistant Studies

American Bar Association

321 North Clark Street, 21st Floor
Chicago, IL 60654
Telephone: (800) 285-2221

Section of Legal Ed and Admissions to the Bar
Office of the Consultant on Legal Education
americanbar.org

- Juris Doctorate

American Psychological Association (APA) Commission on Accreditation

Office of Program Consultation and Accreditation

750 First Street, N.E.
Washington, DC 20002-4242
Telephone: (202) 336-5500
apa.org

- Ph.D. Psychology, Counseling Psychology Concentration

Association of American Law Schools (AALS)

1614 20th Street NW
Washington, DC 20009-1001
Telephone: (202) 296-8851
aals.org

- School of Law

Association for Behavior Analysis International (ABAI)

550 W. Centre Avenue
Portage, MI 49024
Telephone: (269) 492-9310
abainternational.org

- M.S. Behavior Analysis and Therapy

Association to Advance Collegiate Schools of Business (AACSB) International

777 S. Harbour Island Blvd., Suite 750
Tampa, FL 33602
Telephone: (813) 769-6500
aacsb.edu

- Master of Accountancy
- Master of Business Administration
- M.S. Business Analytics
- Ph.D. Business Administration

Council for the Accreditation of Educator Preparation (CAEP)

1140 19th St. NW, Suite 400
Washington, DC 20036
Telephone: (202) 223-0077
caepnet.org

- Teacher Education Programs

Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) American Speech-Language-Hearing Association (ASHA)

American Speech Language-Hearing Association (ASHA)
2200 Research Boulevard
Rockville, MD 20850
Telephone: (301) 296-5700
asha.org

- M.S. Communication Disorders and Sciences

Council on Education for Public Health (CEHP)

1010 Wayne Avenue
Silver Spring, MD 20910
Telephone: (202) 789-1050
ceph.org

- M.P.H. Public Health

Council on Social Work Education (CSWE)

333 John Carlyle Street
Alexandria, VA 22314-5745
Telephone: (703) 683-8080
cswe.org

- M.S.W. Social Work

Illinois Certification Board

Illinois Alcohol and Other Drug Abuse Professional Certification Association, Inc. (IAODAPCA)
401 E. Sangamon Avenue
Springfield, IL 62702
Telephone: (217) 698-8110
iaodapca.org

- Graduate Certificate in Substance Use Disorders and Behavioral Addictions

International Fire Service Accreditation Congress (IFSAC)

Oklahoma State University
1723 W Tyler
Stillwater, OK 74078
Telephone: (405) 744-8303
ifsac.org

- M.S. Public Safety Administration

Joint Review Committee on Education in Radiologic Technology (JRCERT)

20 N. Wacker Drive, Suite 2850
Chicago, IL 60606-3182
Telephone: (312) 704-5300
jrcert.org

- M.S. Medical Dosimetry

Liaison Committee on Medical Education (LCME)

American Medical Association (AMA)
LCME Secretariat
330 N. Wabash Avenue, Suite 39300
Chicago, IL 60611-5885
Telephone: (312) 464-4933
lcme.org

- Graduate Certificate Medical Education Program (School of Medicine)

National Architectural Accrediting Board (NAAB)

107 S. West St., Suite 707
Alexandria, VA 22314
Telephone: (202) 783-2007
naab.org

- M.Arch. Architecture

National Association of Schools of Art and Design (NASAD)

11250 Roger Bacon Drive, Suite 21
Reston, VA 20190-5248
Telephone: (703) 437-0700
nasad.arts-accredit.org

- M.F.A. Art
- M.F.A. Mass Communication and Media Arts
- Graduate Certificate in Art History

National Association of Schools of Music (NASM)

11250 Roger Bacon Drive, Suite 21
Reston, VA 20190-5248
Telephone: (703) 437-0700
nasm.arts-accredit.org

- Master of Music

National Association of Schools of Theatre (NAST)

11250 Roger Bacon Drive, Suite 21
Reston, VA 20190-5248
Telephone: (703) 437-0700
nast.arts-accredit.org

- M.F.A. Theater
- Ph.D. Communication Studies (Theater Focus of Study)

Network of Schools of Public Policy, Affairs, and Administration (NASPAA)

1029 Vermont Avenue NW, Suite 1100
Washington, DC 20005
Telephone: (202) 628-8965
naspaa.org

- Master of Public Administration

Additional Accreditation

Accreditation Association for Ambulatory Health Care (AAAHC)

3 Parkway N Suite 201,
Deerfield, IL 60015
Telephone: (847) 853-6060
aaahc.org

American Camp Association (ACA), Illinois

5 S. Wabash Street, Suite 1406
Chicago, IL 60603
Telephone: (312) 332-0833
acail.org

- Touch of Nature Outdoor Education Center-Camp Little Giant

American Psychological Association (APA)

750 First Street, N.E.
Washington, DC 20002-4242
Telephone: (202) 336-5979
apa.org

- Accredited Internship-Counseling and Psychological Services

Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC)

5205 Chairman's Court, Suite 300
Frederick, MD 21703
Telephone: (301) 696-9626
aaalac.org

Clinical Lab Improvement Amendments (CLIA)

Illinois Department of Public Health
Springfield Headquarters Office
525-535 West Jefferson Street
Springfield, IL 62702
Telephone: (217) 782-4977
dph.illinois.gov

- Student Health Center Laboratory

Commission on Office Laboratory Accreditation (COLA)

9881 Broken Land Parkway, Suite 200
Columbia, MD 21046-3016
Telephone: (800) 981-9883
cola.org

- Student Health Center Laboratory

Commission on Accreditation of Rehabilitation Facilities (CARF)

6951 East Southpoint Road
Tucson, AZ 85756-9407
Telephone: (520) 325-1044 or (888) 281-6531
carf.org

- Evaluation and Developmental Center

Commission on English Language Program Accreditation (CEA)

1001 North Fairfax Street, Suite 630
Alexandria, VA 22314

Telephone: (703) 665-3400
cea-accredit.org

- Center for Teaching English as a Second Language

Suspended Programs

The following programs are suspended from enrollment of new students. The most recent catalog year for each program is listed below.

Master's Programs

- Advanced Energy and Fuels Management P.S.M. - 2021-22 Catalog
- Art History and Visual Culture M.A. - 2018-19 Catalog
- Languages, Literatures, and Cultures M.A. - 2021-22 Catalog
- Special Education M.S. Ed. - 2018-19 Catalog

Doctoral Programs

- Rehabilitation Ph.D. - 2020-21 Catalog

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